I’d put my money on the sun and solar energy. What a source of power! I hope we don’t have to wait until oil and coal run out before we tackle that.

- Thomas Edison
The purpose of IMPACT II is to spread excellent teaching ideas throughout Ventura County.

IMPACT II does this by partnering with local businesses and organizations to provide $500 individual and $750 team grants to educators for unique, original and innovative curriculum that has been classroom tested.

IMPACT II enables excellent teaching ideas to reach all teachers in the county and raises community awareness of exemplary classroom practices. IMPACT II boosts teacher morale by recognizing innovative teaching through both grants and an annual awards dinner where we celebrate the true heroes and heroines in our communities.

Over the years Ventura County IMPACT II has matured into the program that we envisioned at its inception in 1993. Business leaders, teachers, and administrators are becoming aware of the program and are participating in unprecedented numbers.

The Ventura County IMPACT II program is a partnership between the Ventura County Office of Education and Community Sponsors.

IMPACT II puts cutting edge classroom projects into the mainstream, turning students on to learning.

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A MOMENT OF PEACE

“At our school we practice Nonviolent Communication to learn about listening, being honest, kind, and peaceful.” - 3rd graders reflecting on project

SUMMARY

“When you find peace within yourself, you become the kind of person who can live at peace with others.” - Peace Pilgrim

Elementary teachers are faced with the gargantuan task of teaching students academics in multiple subjects while simultaneously addressing social-emotional needs. So easy? Many recent studies show that students’ ability to learn depends not just on the quality of their curriculum/teachers, but also on the safety and comfort they feel at school and the strength of their relationships with adults and peers. When students feel peaceful, they learn more and everyone is happier. Picture students having the tools to “talk it out” when conflict and concerns arise. How do we go about cultivating more peaceful climates in school? Does it sound hippy-dippy and vague? Here are practical, hands-on, tools, strategies, and lessons through read-aloud books, writing, reflecting, art and more to promote peace, resulting in valuable lifelong-learning. This project can be successful simply by taking a “moment of peace” with students in small chunks but the results can be big. We all want to foster academically challenging classrooms with supportive environments. To quote John Lennon, “All we are saying, is give peace a chance!”

GUIDING QUESTIONS

What does it mean to be a peaceful communicator?

How can I practice being a positive, peaceful person?

How can I create a peaceful community?

How can self-love and confidence help me “find my own happy”?

What is the difference between grit***VS***growth mindset and how can this knowledge add peace to lives?
INNOVATION
Prioritizing peaceful climates in schools paves paths for success and creativity. A Viewsonic was used for lessons/related clips/videos, and showing students acting out NVC. Class computers were used for reflective writing assessments on Google Classroom. The text to speech tool on Google Docs was used for struggling writers. We used the iMovie app on iPads for the theatrical filming/assessment of students modeling peaceful communication. “Make a Budget Mural” is attached.

LESSONS/ACTIVITIES
Stage 1-Magic Circle (AKA Dialogue Circles) set the foundation and model a peaceful classroom that communicates kindly. We do ours after our all-school snack/recess to address issues that might have arisen during that break. Additionally, specific sign language signs are taught and modeled regularly. These signs help students meet their needs peacefully and silently. We also start the year with lots of singing of peaceful songs. Next, peace-themed read-aloud books are also the perfect, simple kick off for this project as they result in great buy-in from students who can connect to the characters. Conversation, reflection, and writing about the topics of these books is critical. Then, students fill in their own “Peace Book” that are provided depending on the focus of the lesson. The emphasis of these books is embracing self-love and kindness which beautifully leads into the next stage.

Stage 2-Now it’s time for your students to help create a peaceful space in your classroom together. We enjoyed getting a peace tree (potted tree/plant) and decorating this as a community. This space brings calm and comfort while also providing a designated area for kids to talk out conflicts or to take a moment of peace when needed or required. A “peace expert” (our counselor) was brought into class for multiple talks on Non-Violent Communication including theater games in which students act out and assess their NVC skills. The class creation of peace bridges is introduced to further implement talking out concerns. Students are paired with younger buddies within your school to share the use of the peace bridges. Invite older student role models into your class to share why peace is also important in their lives. The peace-themed read aloud books and connected writing continue. A creative art project, “Peaceful Me”, takes place when students create self-portraits of their peaceful selves using mixed media. All of this peacebuilding within themselves and their class/school community is then ready to be taken to the next level.
Stage 3-What would happen if your class designed/painted a spectacular (yet affordable) mural that represents their message/learnings of peace and shared this art in their community? Create this big mural and share it in your city. Reach out in your town and get it hung in a prominent spot. Turn this into a “mural unveiling” field trip. Call your local paper! We need more positive news in our world. Invite parents/local artists/and any “big wigs” you’d like to this unveiling. Students help write this newspaper article announcing their message of peace and sharing their art. Perhaps this art becomes a traveling art piece landing back at your school? Pictures of this art and copies of your class getting in the newspaper fill your classroom with reminders of spreading kindness every day.

ASSESSMENT
The following list of 21st-century assessments in supporting documents was used:
NonNegotiables***Post-its***Reflective typed/or handwritten self-assessments***CFU strategies***iPad videos on Flipgrid***Kahoot***Viewsonic videos/lessons***ExitTickets***Notecatchers

STUDENT LEARNING/ACHIEVEMENT
“We made the peace mural to spread kindness. You can change someone’s whole entire day by being kind. We did this to spread peace and love. We made this for ourselves as a reminder that you have to love yourself so you can be kind, confident, and spread love to others. We made a mural to remind others they are never alone.” - 3rd-grade artists reflecting

STANDARDS
Health-2nd1.1-1.12, 3rd 2.1, 4.1, 4.2, 5.1,4th 2.1-2.3, 4.2, 4.5, 5.3, 5.4
Literacy/Science-RL2.1, 2.3, 2.6, 2.7,W2.1, 2.7, 2.8,RL 3.1, 3.3, 3.7, 3.9,W 3.4-3.6RL 4.1-4.3, 4.7,4.9W4.1,4.2
Speaking and Listening-2.1-2.3, 3.1, 3.6, 4.1-4.3
Music-2.0,3.0
Theater-5.0
Visual Arts-2.0
**Magic Circle (Facilitated Communication Circles)**

Learning Target- I can peacefully communicate and listen in Magic Circle.

*Link to resources from Edutopia on “Dialogue Circles”:
https://www.edutopia.org/practice/stw-glenview-practice-dialogue-circles-video*

Tips/guidelines from our Magic Circle experiences:

- Your class can give a special name to your circle time together.
- Teachers should include themselves in the circle to signal that they are facilitators and listeners during these gatherings, not authority figures.
- Use a “talking piece” to remind students to pay attention to the speaker and that only one person talks at a time. Examples are stones, shells, sticks, stuffed animals, etc.
- Mindfulness exercises help release tension and build focus on the present moment. Breathe together.
- Demonstrate how we sit, act, listen and speak in circle.
- Create a poster of norms and routines with your class to hang near your circle meeting spot.
- Devote at least five minutes to circle time; you can gradually expand, as students get more comfortable.
- Always allow students to opt out if they choose.
- As students gain experience, and if other classes take part, students can then visit other classes to share appreciations and concerns. Students can be assigned particular days of the week so everyone doesn’t leave at once.

Sample Activities to build comfort and trust during circle:

- Provide sentence starters such as “I like it when…”, “I appreciate…”, “I feel…”
- Teach students silent signals that show they agree with a comment someone else shares.
- On a Scale of 1 to 5: Ask each student to rate how she is feeling on a scale of one to five, where a “five” might signal an upcoming birthday, and a “one” might mean troubles at home. Start the activity by sharing how you are feeling and why.
- You’re in My Boat: Have a student share something personal, such as an experience or something he is interested in by saying, “You’re in my boat if…” For example, “You’re in my
boat if someone got upset with you this morning.” All who agree with the statement get up and change seats; the others remain seated.

**Sign Language**

**Learning Target- I can silently communicate my needs in class.**

Teach students the signs for “bathroom, water, please, thank you” and any other helpful signs.

“Bathroom”- https://www.youtube.com/watch?v=Kl6St-1S4al

“Water”- https://www.youtube.com/watch?v=m49LzvNVTgc

“Please” and “Thank you” - https://www.youtube.com/watch?v=8RAhiJzvAwY
Self - Love and Confidence Books/Peace Books:
Long - Term Learning Target: I can be kind to and love myself.

We started this project by having the kiddos fill one page of their Self-Love and Self-Kindness books out a day. This was to make them happy and to help build their confidence and self-love. We pulled from a variety of online sources, created some of our own pages, as well as using The Positivity Kit By: Lisa Currie, to create a book where the kiddos worked on their confidence and self-love. We continued to use this book throughout the project.
My Brain is Awesome!

Name: [No text provided]

My Brain:

When I'm taking a test, I can think these things in my head to feel confident:

1. I will try my best
2. I can do it
3. I will try until I succeed

My brain is REALLY good at:

1. Sleeping
2. Loring animals
3. Drawing
5 Things that I like about myself...

1) I do asieel yoga
2) I'm fast chosoke
3) I'm good at drawing
4) I'm smart
5) I'm patient

[Drawing of two children holding hands]
SELF-LOVE Affirmations

I accept compliments with gratitude and love.
I am kind to myself and make the right choices for me.
I do my best and accept my best.
I live in the moment and find beauty in each moment.
I am complete and beautiful, just the way I am.

I'm beautiful
I'm always happy
My family loves me
I'm part Cherokee
I'm smart

Colors that make me happy

AN ACTUAL DREAM COME TRUE

I dreamed I did aerial yoga.
**Power Poses**

**Learning Target:** I can choose one power pose to do before an assessment.

We taught students different power poses. We practiced the power poses and talked about the power of our body language.

Youtube clips demonstrating power pose: [https://www.youtube.com/watch?v=C4ACeoqEjeA](https://www.youtube.com/watch?v=C4ACeoqEjeA) & [https://www.youtube.com/watch?v=jvZdsy9HHpM](https://www.youtube.com/watch?v=jvZdsy9HHpM)

![Power Poses](image)

**Books**

**Long - Term Learning Targets:** I can relate each book to being kind to myself and being kind to others. I can learn about different aspects of peace and how to spread it from these books.

Each day, we would read or have the kiddos read in small groups one of the books below. We would have a class discussion on how these books help us be kind to ourselves / love ourselves as well as how they can inspire or influence us to be kind to others regardless of differences or challenges that we are encountering. We learned that differences are beautiful through some of these books.

Book List:

*If Peace is…* By: Jane Baskwill

*Mistakes That Worked* By: Charlotte Foltz Jones

*Secret of the Peaceful Warrior* By: Dan Millman

*Find Your Happy: A Kids Self Love Book* By: Patricia May

*Thanks For The Feedback* By: Julia Cook
Aniya and The Power of a Positive Kid By: Melissa West
Out of My Mind By: Sharon M. Draper
A Boy Called Bat By: Elana K. Arnold
Your Fantastic Elastic Brain By: Dr. JoAnn Deak
The Elephant Who Tried to Tiptoe By: Andrew Newman
Trudy Ludwig books
A Little Peace By: Barbara Kerley
Peace By: Wendy Anderson Halperin
Peace is an Offering By: Annette LeBox
Can You Say Peace? By: Karen Katz
The Peace Book By: Todd Parr
Peaceful Pieces: Poems and Quilts By: Anna Grossnickle Hines
What Does Peace Feel Like? By: Vladimir Radunsky
**Book Reflections and Discussion Reflections**

**Long - Term Learning Target:** I can write a thoughtful reflection that clearly expresses my thoughts and feelings.

We made a book reflection and discussion reflection board where each time we finished a book or had a discussion, the kiddos could write a reflection about what they’ve learned or their response to the discussion topic. We typically wrote reflections on index cards. Each student had to write a sentence and sign their name.

**Discussion Topics:**
What makes you feel special / important?
What makes you feel loved by your friends / community?
What is one thing you are willing to make a mistake in and learn from this week?
What did you learn from this book?
I like when my family included me in super fun activities.

My friend Careen makes me happy.

I feel important when adults include me in what they're talking about.

Having friends that care about others and me makes me feel important.

Having included.
Book Reflection / Assessment:

Name:________________

A Moment of Peace in Rm  - A Debrief- “Why are we learning about peace?”

Part 1 GROUP CHAT- Please be chatty!

*Learning Target- I can analyze (DISCOVER/REVEAL) how this book teaches peace. Why does this matter? What's the message?

“I discovered…”
“I think…”
“I learned…”
“I wonder…”
“I observe peace…”

*1 minute to speak per group member.
I can listen when it’s my turn to hold the speaking stone.
I can speak honestly and openly when it’s my turn to.
I can use a whiteboard to take notes.

______________________________________________________________________

Part 2 WRITE & DRAW (On the back)

I can write at least 3 sentences sharing the learning I talked about in the group chat.

*Learning Target Reminder: I can analyze (DISCOVER/REVEAL) how this book teaches peace. Why does this matter? What's the message?

Next, I can draw a picture, symbols, or words related to my writing.
Growth Mindset

Learning Target: I can explain the benefits of having a growth mindset.

We enlarged a picture of a brain. We then discussed as a class growth mindset versus fixed mindset. We gave celebrity examples (pictures below). We gave one growth mindset example and one fixed. Then the students came up with their own examples. All examples were written on flashcards. The students then colored the growth mindset part of the brain and we posted the growth mindset flashcards there to show what your brain does when you have a growth mindset. The fixed mindset went on the other side.
Fixed Mindset

- I can't do it!
- This is too easy!
- I made a mistake, I'm done.
- I can't do this!
- I don't care.
- I give up!
- Not trying to learn new things.
- It's good enough.

Growth Mindset

- I can't do it!
- This is too easy!
- I made a mistake, I'm done.
- I can do this!
- I don't care.
- I give up!
- Not trying to learn new things.
- It's good enough.

I can try!

Brain grows if I try!

My mistakes can teach me something!

I can push myself to try.

I can push myself to try.

I will push myself!

My brain will grow if I try!

I will do this!

I will do this!

I can challenge myself!

My mistakes are valuable!
Self-Affirmations

Learning Target: I can believe in myself.

We did an activity where we talked about how we are the hardest on ourselves and how we need to be kinder to ourselves so that we can spread that kindness to others. Each student was given one flashcard and they had to rip up a negative thought that they tell themselves over the recycling bin. Then, they had to write the opposite (which should be a VERY positive thing) about themselves on a new index card. We then taped these to their cubbies so that they could see the self-affirmations each day.
Teacher Affirmations

Learning Target: I can accept a compliment and say thank you.

We form a circle around the carpet and the teacher goes around one student at a time and gives them a compliment in the following format: “I appreciate _________________.” This is one of our models of spreading peace, kindness and love.

Bringing in the School Counselor

Learning Targets:

I can practice empathy with my classmates.

I can show responsibility at school.

I can use strategies when I become disappointed.

I can use manners to spread kindness.

Helpful book resources written by author Sura Hart:

The No-Fault Classroom: Tools to Resolve Conflict & Foster Relationship Intelligence

The Compassionate Classroom: Relationship Based Teaching and Learning
We brought in our school counselor to do the following lessons with our students:
- Managing Disappointment
- Manners
- Empathy
- Responsibility

Students then actively practiced using empathy, manners and responsibility with each other with our Non-Violent Communication Cards. Students each had to tell a story about a time that they were sad or upset about something. Then, their group members each had either the role of guessing what they felt like, or wondering what the student’s needed (we made groups of 3 or 4 and the students rotated roles). Students were using these Non-Violent Communication cards to fill in the blanks.

- I’m guessing you felt _________.
- I’m wondering if you needed_______.
Peace Tree

Learning Target: I can use the Peace Tree as a tool to help me attain peace within myself as well as with others.

After reading all of our books and learning to spread peace, kindness and love to ourselves, we decided to obtain and paint the bowl of a peace tree. Our peace tree is where our students go to work out conflict with one another. If our students need a moment outside of the room to gather themselves, they take a moment at the peace tree before rejoining the class.
Spreading Kindness To Others

Learning Target: I can spread kindness to others.

Below is a list of activities with descriptions that the students did to spread kindness to others.

1) **Kindness has no name**: I used painters tape to tape a blank white piece of paper to each student's back. I explain that this is a silent activity. Each student gets a washable marker. The directions are to write one kind thing on EACH student's paper. Each student should end up with 25 (if that is your class size) kind comments. Student's are not allowed to write their names as kindness has no name. I ask each student to look around at their friends while they read their papers at the very end and see the kindness that they have spread.

2) **Random Kind Note**: Students are given the template below to fill out for a random student they select from our class fair sticks. The intention is to spread kindness to all even if they are not your best friends; to see the good and spread it to all.

3) **Random Kindness Acts**: In the classroom, we have 4 packs of random act of kindness cards. Each student was given a random card. The students had to be responsible and keep their cards in a safe place (most of them kept it in their cubbies or pockets). The students had until the following day to complete the random act of kindness. Each kiddo returned their cards as they completed their act. If a student didn't return their card, I checked in with them. I used a list of their names and gave a check each time they returned their cards.
Random Kind Note:

DEAR [NAME],

THINKING OF YOU MAKES ME [SMILING EMOJI] BECAUSE OF THESE THREE REASONS:
1. __________________________
2. __________________________
3. __________________________

I HOPE YOU HAVE A HAPPY DAY!

[SMILING EMOJI]

---

Random Acts of Kindness:

1. Help one of your parents cook a meal.
2. Think about something you are proud of doing.
3. Invite someone new to hang out.
4. Give a random thank you note. "Thank you for being my friend," "being my mom" etc.
5. Help an elderly person with something (open a door, reach or move something).

All of these are [SMILING EMOTICONS]

Be Kind.
Peace Pilgrim and Older Peer Learning

Learning Target: I can name one way that I will spread peace.

Student’s watched the Peace Pilgrim (https://www.youtube.com/watch?v=6qRWhm2ShoA) video and had to reflect on ways that she spread peace. They then had to come up with one way they would spread peace.

We also had upper-grade students come in and talk about why being peaceful to yourselves as well as others is important.
**I Love Myself Art/Peaceful Me Art**

**Learning Target:** I can make a representation of things that I love about myself.

Throughout this project, we have been practicing self-love and being kind to ourselves. We have discussed that in order to be kind to others, we need to be kind to ourselves. The students had to create an art piece using magazines, specialty paper (from Michaels), washi tape and construction paper. The goal was to have words and images around a construction creation of themselves that celebrate who they are as well as things they are proud of liking / things that make them, them.
Peace Mural
Learning Target: I can spread peace and love to our community through this piece of art.

Two third grade classes did this project together. Up until this point, the students had worked on self-love, kindness and peace. The students had also worked on spreading this peace, kindness and love to other students. We decided that the next step was to spread the peace, love and kindness to our community. The mural was made out of a tarp from home depot and the mural was done with tempera paint. We had 2-3 students per class (total of 4-6) working on the mural at a time. The students worked on the inside of the mural first, then made their way to the outside. We made a lot of mistakes and learned from them as we made the mural together. Us teachers contacted City Hall and worked with them to have the mural hung there as well as obtaining a field trip to see it. We contacted the local paper and had the students write an article to be published with a picture of their mural.
Get your school/students in your local newspaper with your peaceful mural!

Learning Target- I can help write and edit a newspaper article.

Your local paper will love featuring your students and their peace mural. Our local paper gave us all the requirements for the article and had us submit the article writing and photos. Involve your students in this process. Our students recorded the 5 W’s (see notecatcher below) and their thoughts of the peace mural experience and the field trip unveiling it. Their responses were directly quoted in the newspaper article so they had ownership of the article.

Our newspaper article posted below which can be helpful inspiration:

“Spread Peace and Love” mural by (school removed) students on display

Students had the opportunity to chat with Mayor_______ (he’s the bigger one). Photo by Manjula Perera

On Thursday, February 21st, 50 students from___walked to ___City Hall for a highly anticipated field trip. This journey was a celebration of the unveiling of their “Spread Peace and Love” mural on display in City Hall. The spirit of this peaceful mural is to be a traveling art peace around the city. When third-grade teachers___reached out to City Hall to be the first hosts of the art piece, City Hall was instantly supportive and excited.
City Hall’s Cultural Arts, Education & Historic Supervisor, helped coordinate this special event. The day involved a glance at the city’s historical art pieces within City Hall on a guided tour from the City of ___ Public Art Specialist. Students had many opportunities to learn about famous, local artists and to connect with art through reflection, observations, and questions.

The field trip concluded with a “Mayor Meet Up” as students had the unique opportunity to chat with Mayor___. Mayor___ then concluded the incredible experience by unveiling the student's art piece of peace. Many high fives, cheers, and peace signs were given and joyful pictures were taken with the Mayor.

Quotes from___ third grade artists reflecting on their big day at City Hall:

“At City Hall, we met awesome people! ___ and ___ seemed very passionate about the City Hall art and they wanted to share it with us. City Hall inspired us to do more. The Mayor was much different than I thought he’d be. I thought he’d be really old. He was so fun and cool! We learned that the Mayor’s job is important. The Mayor makes ___ a better community. He’s a kind person. Meeting him was an exciting opportunity. Maybe I can be the Mayor one day. The Mayor said that every day he walks into City Hall and the first thing he sees is our mural saying, ‘Spread Peace and Love’ and it reminds him to do that. He said the best Mayors spread peace and love.”

“This mural was about kindness, spreading peace, and love to others. We went to be representatives of kindness. We went to show ourselves being a part of the community. Spreading peace, love, and kindness is all that we want to do and are going to do; all that we are. We want our community to be peaceful and kind. We are all pieces of the mural. There are 50 parts/bones of the mural.”

“Our mural is a chance to express ourselves and the work we’ve done. Our peaceful family is open for others to join. We can all be one and bring others together. When you’re kind to yourself, it makes being kind to others easier. The mural is a reminder you can be peaceful and you can set the example; it’s something we don’t want people to forget.”
# OUR PEACE MURAL PROJECT: THE 5 W'S

Learning Target- I can identify and record the 5 W’s (who, what, when, where, why) of our peace mural process/field trip.

<table>
<thead>
<tr>
<th>WHO</th>
<th></th>
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<tbody>
<tr>
<td>WHAT</td>
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<td>WHY</td>
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**LT** - I can reflect and write about why the peace mural was an important project to us. Write at least 4 sentences.
Peace Bridges
Learning Target- I can build a peace bridge and use this tool to peacefully talk out concerns.

Pictures of Peace Bridges and Process:
I listen. Speak 2nd.

When you—

I feel—

I request/need—

Are you willing?

Speak 1st, listen 2nd.
Other Assessments:
Checks for Understanding- These strategies can be used to check in and assess throughout the project and conversations.
*Thumb-o-meter- Use your thumb to show a feeling or rate something

*Window open or shut? - Pretend to open a window and peer out if you see it/get it, or shut your window if you're still confused

*Dance to the music! - Play a fun song and the students dance around the room. When the music stops, they find the person closest to them and tell them the answer or their thoughts.

*Post it exit tickets- Assess student learning by asking 1 question to check for understanding and this is the exit ticket they hand to you on their way out of class.

*Learning Line-ups Identify one end of the room with a descriptor such as “Novice” or “Beginning” and the other end as “Expert” or “Exemplary”. Students place themselves on this continuum based on where they are with a task or learning target. Invite them to explain their thinking to the whole class or the people near them.

*Use Google Classroom to post reflective writing assignments throughout the project. Students can respond to writing prompts shared on a Google doc such as these examples below. These prompts can also be used for debriefs at the end of the project:

“I can write about a real life example of how I’ve used my peaceful NVC skills to deal with a recent concern/challenge/situation (positive or negative)."

“On a scale of 1-10 (1 is beginner, 10 is mastery) I can assess where I’m at with my use of peaceful communication in my life. I will assign myself a number and provide at least 5 typed sentences that support this assessment/brainstorm steps to reach more mastery.

*iPads, iMovie, Flipgrid- All of these tech tools are super for students to act out and record their learning to share, discuss, and debrief with classmates.
Thank You Books

Learning Target- I can write a thoughtful letter of thanks expressing gratitude to the people who helped our field trip happen.

Writing thank you letters to the folks/establishment that end up hosting your peaceful mural is a great debrief activity that simultaneously gives closure to your project and while showing gratitude to others.
**Additional Resources:**
*Email Denise Miller of “Live Love and Peace” foundation at their website:
https://liveloveandpeace.com/about
She will mail your class a package of peace bracelets and you can Skype with her to open the package together with her “there” and she can explain her mission for spreading peace in the world.

**MAKING A MURAL ON A BUDGET**- Buy a drop cloth canvas at Lowes or Home Depot. We spent around $25 and cut ours to be 6X6 feet. Buy a bucket of white primer paint around $10. Before painting, we stenciled squares on the canvas so pairs of students could be responsible for priming their square. After the first layer dries, repeat this again to get a solid foundation. Next, brainstorm ideas. What conveys a message of peace to your students? Keep it fairly simple. Pick one and have a parent help stencil this design on the dried/primed canvas. We used acrylic paint for the art. Make it colorful and bold. It’s a loose canvas art piece (see below) which makes it very portable but still large and affordable. Have fun!
Creating a “Peace Corner” inside your classroom as a safe place for students to talk out conflicts, relax, reflect, or take a break.
*Sing peaceful songs together. Here’s a resource with a list of peaceful songs to sing with kids:
https://www.songsforteaching.com/themeunits/peacetheme.htm

*Peaceful team building games (free resource):
http://www.ventureteambuilding.co.uk/
As part of the science curriculum in our Moderate/Severe middle school class we learned about the causes and effects of climate change on the Earth’s environment, and what humans can do to mitigate this problem. We wanted to explore not only the causes of global warming, but how it impacts the earth, humans, and animals. As we delved deeper into the subject we also wanted to find ways that we as a class could help with solutions to this dilemma. So we decided to help share our new understanding of the causes and solutions to global climate change through an educational game that can be shared with other classes and our families.
Climate Change Champions

As part of the science curriculum in our Moderate/Severe middle school class we learned about the causes and effects of climate change on the Earth’s environment, and what humans can do to mitigate this problem. We wanted to explore not only the causes of global warming, but how it impacts the earth, humans, and animals. As we delved deeper into the subject we also wanted to find ways that we as a class could help with solutions to this dilemma. So we decided to help share our new understanding of the causes and solutions to global climate change through an educational game that can be shared with other classes and our families.

We began our unit by discussing what we knew about climate change. The students had heard of it, but they were unsure what the term meant. So we watched some videos on BrainPop and Youtube to find out more about what global warming is. We then delved into our modified text about climate change and how humans impact the environment. Using graphic organizers we mapped out what we had learned so far about the: who, what, when, where, and how of climate change. The students then used these graphic organizers to create a Google Slide presentation about their new understanding of the issue.

During our classroom discussions and exploration of this topic, we decided that we would like to do something to help scientists spread awareness about this problem. Many students reported that they did not think that their family knew about the problem, and that they would like to share their new learning with their friends and family. They wanted to start recycling at home, and share tips with their parents and siblings about turning off lights, and walking instead of driving when possible. We did a group brainstorming session and came up with a list of things that we as a class and as individuals can do to help mitigate climate change. Our class decided that we wanted to create a game to share with our peer tutors and families about global warming.

We decided to base our game on a game that we have been using in our social skills group called Candyland. Our board is similar to the one in that game except that players all start in a dirty, polluted environment and progress across the board to a clean, healthy environment at the end of the game. The board is covered in squares which are brown, black, gray, green or blue. The first half of the board is covered in the brown, black and gray squares to symbolize pollution. The latter half of the board is covered in the blue and green squares to symbolize a clean environment. The students created cards that move the students either forwards or backwards across the board. All of the materials we used for the game were made from upcycled and recycled materials. The pieces for each player are made from old bottle caps, and the cards and game board are made of recycled paper.

Example of a blue or green card may read: “You find a can on the ground and recycle it, move forward one blue space” or, “You eat a plant based meal, move forward two green
squares”. Examples of a brown, black or gray card may read, “A factory produces a lot of pollution that goes in the air, move backward one brown square” or “Greenhouse gases melted another glacier, move backwards two spaces”. The person who makes it to the end of the board first is the winner.

Our plan is to make this game interactive using GoogleEarth so that each student can login and play a similar version with their family and friends at home. We also want to share our original game with the general education class that we do integration time with. During the course of our studies we learned that sharing the word about how immediate the danger is from global warming, and also giving people tips on how to combat climate change is one of the most powerful things that young people can do to help. So we hope that our Climate Change Champions game will help spread awareness and give people some tools to help save the planet.
Climate Change

By: Netza
Global Warming

The earth is getting warmer.
Humans cause climate change.

Using electricity from non-renewable resources.

Using fossil fuels (coal, gas).

Cows make methane gas.

Factories.
Effects of Global Warming

Flooding

Polar ice is melting

More water in the ocean. Ocean levels are rising.

Forests are turning into deserts.

Stronger storms.
Things we can do to help fight climate change

Recycle

Ride a bike

Take the bus

Eat vegetarian meals sometimes

Turn off lights when you leave the room

Tell people about global warming
Teaching Environmental Science and Earth Science is my passion. I enjoy being able to expand the horizons of my students and open their eyes to the world around them using an environmental perspective. I constantly challenge them to think critically and “outside the box”. As the world changes and the energy demand rises globally, the next generation is going to need to be able to think “outside the box” in order to protect the environment and meet the energy demand of our ever growing population.
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This unit is called Energy to Power the World and is focused on renewable energy sources. This unit is taught toward the end of the year once most of the basic environmental ecology and biodiversity information has been learned. It also follows the non-renewable resources unit in hopes to bring the students out of the doom and gloom of fossil fuels and into the light of innovation and progress within the green energy movement.

The unit starts with a basic introduction into the current Energy Grid and how it works, as well as a quick review of the non-renewable energy unit. Throughout the unit I always bring in as many current events and case studies as possible so that students feel more connected to the curriculum and can understand it better not only from an educational point of view but also from a personal impact point of view. I find that if students can make a personal connection with the material and see real world examples then they will understand the information better.

The unit then moves into the essential guiding question, “What are some of the Energy Challenges being faced around the world?” At this point we brainstorm as a class and read some case studies from various countries. As a homework assignment students are given a Home Energy Audit to take home and work on with their parents so that they will make the connection to their own home and family.

We then move through the various main types of renewable energy sources such as Solar, Hydro, Wind, and Geothermal. In each unit I continue to bring in current events, case studies, hands on activities, math computations, video clips, and labs. Once these energy sources are learned we circle back to the energy grid but focus on a Smart Energy Grid this time around.

The next half of the unit is focused on better batteries, hydrogen fuel, and biofuels. Again I bring in current events, case studies, hands on activities, math computations, video clips, and labs so that students have multiple different ways of learning the material. This part of the unit is completed by creating and participating in a Superhero/Villan Energy Battle in which students always seem to enjoy. We also do an activity called Energy Shark Tank in which the students have to create and “sell” their renewable energy company while the class fills out an investor sheet.

Finally, the unit wraps up with learning about the human impact of global clean energy use over non-renewable sources, green cities, green architectural design and LEED certifications. The culminating activity is called: Battle of the Most Sustainable Roomies in which the students
must design and off the grid fully sustainable home and they present and compete against other groups to see who has the best green design and which is the most sustainable.

One other activity that is done using what they learned in this unit is developing a Tri-Fold poster, interactive activity, and creating a booth at the Earth Day Fair we run every year. This allows the students to truly understand the information as well as share with the rest of the students what they have learned. I believe that the students really enjoy this unit and make great strides in learning about Alternative Energy Resources to Power the World.
Energy Superheroes/Villains

Overview: You will create an energy "superhero" or “villain” that highlights the advantages and disadvantages of various types of energy. You will present your superheroes to the class as part of the CLEAN ENERGY LEAGUE that fight against the FEARSOME FOSSIL FUELERS.

Superhero Choices: Wind, Solar (PV-Photovoltaic (solar panels) and CSP-Concentrated Solar Power (Solar towers w/ mirrors)), Hydropower (river and wave or tidal), Geothermal, Biomass (waste-to-energy, algal biofuels, and ethanol), Hydrogen fuel cells
Villain choices: Natural Gas, Coal, Petroleum (crude, oil sands, oil shales), Nuclear (fission and fusion)

Extra Credit: Create a sidekick for your superhero or villain.

Directions: Each item below must be easily identifiable and accurate. Make sure your information is thorough.
1. Read your book and other resources about your assigned energy source.
2. Create and diagram an “Energy Superhero” or “Villain” that highlights the advantages and disadvantages of this type of energy.
3. Include the following components in your visual diagram:
   a. Superhero/Villain– what does he/she look like? Color required. You will not be graded on artistic ability but stick-figures will not be accepted
      • Extra Credit- Include a Sidekick.
   b. Name – who is he/she? To earn this point the name should be creative and displayed on your drawing somewhere, not just mentioned in a word bubble.
      • EC. Include name of sidekick.
   c. Description of Lair- Think of a creative way to explain where this energy source is located in/on the Earth as well as where you found find the largest reserves.
   d. Descriptions of main advantages – Think of a creative way to communicate these. This could be done in his/her costume, accessories, dialogue bubbles or other items in your drawing. Identify a main super power that corresponds with its strength.
      • EC. Include sidekick’s advantages.
   e. Descriptions of main disadvantages - Think of a creative way to communicate these. This could be done in his/her costume, accessories, dialogue bubbles or other items in your drawing. Perhaps even identify his/her main nemesis.
      • EC. Include sidekick’s disadvantages.

Organize your drawing in a similar format to the right.
Energy Alternatives: Energy Battle Royale

Your superhero of choice and your team of experts have put in a bid to be the new energy suppliers to a new city that is in the planning stages. The city will be called Thneedville. The city is estimated to grow to a size of 100,000 people maximum within ten years. Your job is to research your assigned type of alternative energy production, make a superhero representing your energy type (keeping in mind all of your research) and debate the other energy superheroes in front of the class.

**Energy Alternatives:** Nuclear, Biofuel, Hydroelectric, Solar, Wind, Geothermal, Hydrogen, Tidal/Wave

**Superhero:**
Create a character for your assigned energy alternative. Your character should have a poster showing their face with a personality to match *(think WWE wrestling, Justice League, Avengers)* and their stats.

Brainstorm your character’s distinctive qualities. Name everything you can think of that applies.

Some things to consider are…
- Special powers—such as superhuman abilities, mutations, or scientific knowledge.
- Strengths of your energy source/superhero
- Weaknesses of your energy source/superhero
- Appearance—are they colorful, funny, serious, drab, dark, or menacing?
- Background—where did they come from, and did they go through a shocking experience that made them who they are?
- Public or “secret” identity—what is their social life like, do they have regular jobs, family, and friends?
- Special equipment—such as tools, weapons, or vehicles.
- Place of residence—rural or urban, apartment or house, secret lair or in plain sight.

**Debate:**
You may use charts, graphs and any other graphic your company feels necessary to defend your position and fight for the energy rights to Thneedville. *Be prepared to point out drawbacks and problems with the other power types. Are you ready to Rumble????!!??*

To prepare for Battle, some things to consider…
- Describe how this process produces electricity
- Pros
  - Economically
  - Environmentally
- Cons
  - Economically
  - Environmentally
- Safety issues: *short and long term*
- Pollution prevention measures needed
- Waste disposal needed
- Cost to develop
- Cost to consumers (price per kilowatt hour and price per year)
- Where in the country and the world will each type best be utilized
- Etc…
Day of the Battle:
Each team will have 30 seconds to introduce your energy superhero

Then the battle will begin…..
Each character will be matched up against an opponent for a one on one verbal energy battle (*aka: a debate*).

Battles will last 4 minutes and include a 30 second half time for each character to recharge.

When the bell rings one player will declare a reason why they are a better source of energy as opposed to their opponent. The opponent will then have a chance to respond. The battle will go back and forth, until time is called.

*Note: while this is a competition, we also want to be respectful and polite of our opponents. So no talking/shouting over each other, no derogatory comments, etc.*

Winners will be based on the strength of your convincing arguments and judged by both the head referee (your teacher) as well as the viewers.

Winners will move ahead to battle in the next round until ONE SUPREME ENERGY ALTERNATIVE is chosen.
## Conventional Alternatives to Fossil Fuels

<table>
<thead>
<tr>
<th>Description/Definition</th>
<th>Nuclear Power</th>
<th>Bioenergy</th>
<th>Hydroelectric Power</th>
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<td>Fission</td>
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<td>Fusion</td>
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<td>Renewable or nonrenewable?</td>
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<td>How it is retrieved</td>
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<td>Byproducts</td>
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<td>How is the retrieval, building of and/or byproducts harmful or beneficial to the environment?</td>
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<td>How are the byproducts regulated?</td>
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<th>Top 3 Producers</th>
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<th>“Need to know” vocab words</th>
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<th>Diagrams of how it produces energy:</th>
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<tr>
<td>“New” Renewable Energy Options</td>
<td>Solar Energy</td>
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<tr>
<td>Description/Definition</td>
<td>Passive Solar</td>
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<td>State of Technology, Availability, &amp; Economics</td>
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<td>How it produces energy</td>
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<td>Byproducts and regulations associated with energy source</td>
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<td>Diagrams of how it produces energy:</td>
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Computers: Energy Lab Challenge

Click on the link below to complete your own energy challenge! This activity should take you about 30 minutes and should be completed all at once. You should sign in using “Guest Pass” when prompted.

Go to: http://www.pbs.org/wgbh/nova/labs/lab/energy/

Instructions:

1. Click on “Research Challenge”
   Read Instructions!

2. Click “Begin”

3. Click the boxes on the bottom and answer the following:
   1. What area of the United States has the highest potential for Solar Power?
   2. What area of the United States has the highest potential for Wind Power?
   3. What area of the United States has the highest potential for Geothermal Power?
   4. What area of the United States has the highest potential for Biomass Power?

4. Click on Los Angeles. Read the prompt and accept the challenge.
   5. Describe the energy profile of Los Angeles.

6. What is your challenge?

7. What is your budget?

8. What is your target?

5. Click “Design your system”
   9. Describe the way you set up your system
6. **Click “Test Your System”**

10. Write down the warnings and design tips that you received throughout the year and which months your received them in.

*Always click “continue test”*

*You do not need to “power up” we will suspend our work in the testing phase, but you can if you want!*

7. **Conclusion: In a paragraph answer the questions below.**

13. Using the color coded bars, which source of energy worked the best for Los Angeles?

14. Which worked the least?

15. a. What times of the year did your system run below the requirement?

b. Why do you think that is?

c. What would you change when you redesign the system? Why?

16. How do you think your results would be different if we chose Las Vegas instead of Los Angeles?
Computers: Solar Energy

Go to: [http://www.eia.doe.gov/kids/energyfacts/index.html](http://www.eia.doe.gov/kids/energyfacts/index.html)

Click on “energy Sources” and then click on the word “Solar.”

1. What is solar energy?

2. Solar energy is converted into what type of energy?

3. Give two examples of how solar energy is used.

4. List the two ways in which solar energy can be converted to electricity.

5. How do solar cells work?

6. How do solar power plants generate electricity?

7. Explain how solar energy is beneficial for the environment.

8. Describe the 2 main disadvantages of solar energy.

9. Covering ______% of the world's desert areas with photovoltaics could supply the equivalent of all of the world's electricity.

Go to: [http://science.howstuffworks.com/environmental/green-tech/energy-production/solar-thermal-power.htm](http://science.howstuffworks.com/environmental/green-tech/energy-production/solar-thermal-power.htm)

10. List the two main ways of generating energy from the sun.

11. Describe how each of the two ways listed above generate energy.

Click “keep reading” in the bottom right corner

12. What are the two types of solar thermal systems?

13. Describe the differences between the two types of systems listed above.
14. What is Ivanpah? Where is it located?

15. How many homes can it power? ________________

16. Describe how it turns solar into electricity (the technology).

17. Passive solar design takes advantage of a building’s ____________, ____________, and ____________ to minimize energy use.

18. How does a passive solar home design work?

19. List the four basic elements that work together to make a passive solar home.

20. What is Photovoltaics?

21. When was the first photovoltaic module built?

22. Another name for photovoltaic cell is a ____________________________________.

23. Explain how a Solar Cooker works.

24. a. List the three types of solar cookers.

   b. Which type of solar cooker do you think is the most effective? Why?

25. What are the key features to a successful Solar Cooker?

26. a. Who uses Solar Cookers?

   b. Why would they want/need to use them?

27. Look up a NEW article having something to do with Solar Power and answer the question/describe – What’s new in Solar power?
DVD: Who Killed the Electric Car?

1. What are some of the health problems that result from increased levels of smog from the use of fossil fuels?

2. What chemicals are added to the atmosphere from the use of fossil fuels? What affect do these chemical have on our atmosphere?

3. What mechanical components exist on today's fossil fuel based cars that help prevent air pollution?

4. What legislative policy was established in order to get the car companies to build an electric car?

5. What are the components of an electric car's engine?

6. Compare and contrast EV cars with fossil fuel cars with regards to cost, fuel cost, repair cost, speed, ease of use, and style.

7. What components of a fossil fuel car are not needed with an EV?

8. Do you think the elimination of these parts and maintenance was a contributing factor to the death of the EV?
9. Describe 2 limitations of an EV. For each limitation, describe a possible solution (*ex. technical, legislative, and educational*) for this problem.

10. *EVs run on electricity, which is produced typically from coal.* Describe 2 environmental problems which result from the use of burning coal.

11. Who were the different suspects in the demise of the electric car? For each suspect, describe 2 things they did that contributed to killing the electric car.

12. How did hydrogen fuel cell technology contribute to the death of the electric car?

13. What are the problems with hydrogen fuel cell cars?

14. What are the "5 miracles" that need to happen before hydrogen fuel becomes common place?

15. Why do you think this type of technology was adopted by the car companies rather than electric cars?

16. Was anyone primarily responsible for killing the electric car, or was it everyone? Explain.

17. Do you think the decision to kill the eclectic car was a prudent one? Explain
Geothermal Exploration

Introduction:
Geothermal energy is the heat from the Earth. It's clean and sustainable. Resources of geothermal energy range from the shallow ground to hot water and hot rock found a few miles beneath the Earth’s surface, and down even deeper to the extremely high temperatures of molten rock called magma.

In the United States, most geothermal reservoirs of hot water are located in the western states, Alaska, and Hawaii. Wells can be drilled into underground reservoirs for the generation of electricity. Some geothermal power plants use the steam from a reservoir to power a turbine/generator, while others use the hot water to boil a working fluid that vaporizes and then turns a turbine. Hot water near the surface of Earth can be used directly for heat. Direct-use applications include heating buildings, growing plants in greenhouses, drying crops, heating water at fish farms, and several industrial processes such as pasteurizing milk.

Task:
GeoPower Corporation (a developer of geothermal sources) has recently completed drilling three 1,800 foot deep exploration holes in an attempt to locate a geothermal resource thought to be in the Eastern part of Arizona. The holes were filled with water, and after several weeks, the water temperature became the same as the temperature of the surrounding rock. Readings of the water temperature at every 200 feet were taken to determine how the temperature changed with depth.

*A temperature of at least 300 °F is needed to make use of a geothermal source for electricity production.

Use the table below to graph how temperature changes with depth in each bore hole.
(Use a different color for each line, and be sure to include a key)

<table>
<thead>
<tr>
<th>Table 1: GeoPower –Eastern Arizona Exploration Results</th>
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<tbody>
<tr>
<td>Depth (Feet)</td>
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<td>200</td>
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Questions:
1. Which bore-hole would you recommend developing for electricity production? EXPLAIN WHY you chose this hole over the others!
2. At what depth would you expect to reach 300°F in the geothermal reservoir you chose?
3. Which bore-hole would you recommend developing for a heat pump? What are heat pumps used for and EXPLAIN WHY you chose this hole over the others.
4. Describe each of the 3 types of geothermal power plants.
5. Which type of power plant would GeoPower most likely be developing with these bore-holes? EXPLAIN WHY!
6. Who are the top two geothermal producing countries?
7. What are 2 disadvantages of geothermal power?
8. Describe the process of producing geothermal electricity.
9. Describe the process of using a geothermal heat pump to heat a home.
Battle of the Most Sustainable California Roomies

To win this exciting battle—no need to fight, just design the most sustainable home in California, for the title of the BEST California Environmental Roomie and cash prize of $800,000 to build this beautiful sustainable home.

The money comes with conditions.

✓ It can only be used to (design) build an “off the grid” home.
✓ The home may be no larger than 2700 square feet and no smaller than 1500 square feet.
✓ It must be on a lot size of at least 2 acres and not larger than 15 acres.
✓ It must incorporate at least two forms of renewable energy as its primary energy source and have another way to have back-up energy that is also renewable.
✓ All appliances must be energy star appliances and the house itself should be sustainably designed and energy efficient.
✓ You must also be “off the grid” in terms of water and wastewater.
✓ You must also be off the grid for 80% of fruits and veggies. Supplying these needs should be done as sustainably as possible.

You and your roomie must present a portfolio/presentation with your house design, with an advertised piece of land where you are welcome to presume that you can buy it at 10% below the advertised price. You must also include the following information:

1. Prices of all appliances
2. Amount allotted to actually constructing the house
3. How your construction is sustainable and energy efficient
4. How you are dealing with the water part of your infrastructure.
5. Costs and model numbers along with “where” you are purchasing your alternative energy equipment. Don’t forget the “backup” equipment. You may print actual catalog information and pictures to fulfill this part.

*** A brief (1.5-2 pages) narrative outlining the innovative energy strategies incorporated into your house.

Other necessary items:

6. House floor plan - drawn
7. House drawing - same as above
8. Illustration of land design- How does your house sit in its surroundings
9. Information on how your technology works

“Presenting the Portfolio” involves you showing me your design and how you are “Off the grid” in all mandatory ways.

Finally: You present to class in 5 minutes or less please.

True energy efficiency and sustainability will be examined and the class members who “win the roomie contest will be awarded the grand APES cake.

This counts as a test grade/project
Make a slide show to express 1-9 above

Renewable Energy 15%
Water, Wastewater treatment properly selected/presented/explained 15%
Sustainable garden/remember 80% of food 15%
House/Lot selected properly 10%
Floor plan, House drawing, land design, Energy Star appliances (costs, vendor) 15%
Sustainability of construction/site plan (least damage to environment and long lasting sustainability) 20%
• 1.5-2 page narrative (with citations) 20%
Some links to help you and your roomie-check out housing styles, toilets-yes:


http://www.buildingdashboard.net/whrc/woodwell/

http://earthship.com/


http://science.howstuffworks.com/environmental/green-science/living-off-the-grid2.htm

http://www.containerhomeplans.org/2015/04/what-i-wish-id-known-before-building-my-shipping-container-home/

https://www.thenaturalhome.com/

http://www.earthshelteredhome.com/

http://www.balewatch.com/

http://www.domehome.com/

http://floorplanner.com/

http://inhabitat.com

http://www.energystar.gov/


http://www.amconservationgroup.com/


http://www.treehugger.com/bathroom-design/more-hot-poop-composting-toilets.html
<table>
<thead>
<tr>
<th>Criteria</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Your Score</th>
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</thead>
<tbody>
<tr>
<td>Attention to</td>
<td>Did not attempt to engage audience.</td>
<td>Little attempt to engage audience.</td>
<td>Engaged audience and held their attention most of the time by remaining on topic and presenting facts with enthusiasm.</td>
<td>Engaged audience and held their attention throughout with creative articulation, enthusiasm, and clearly focused presentation</td>
<td>1-4</td>
</tr>
<tr>
<td>Audience</td>
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<tr>
<td>Clarity</td>
<td>No apparent logical order of presentation, unclear focus.</td>
<td>Content is loosely connected, transitions lack clarity.</td>
<td>Sequence of information is well-organized for the most part, but more clarity with transitions is needed.</td>
<td>Development of ideas is clear through use of specific and appropriate examples; transitions are clear and create a smooth and even flow.</td>
<td>1-4</td>
</tr>
<tr>
<td>Content</td>
<td>Thesis is unclear and information appears randomly chosen.</td>
<td>Thesis is clear, but supporting information is disconnected.</td>
<td>Information relates to a clear thesis; many relevant points, but they are somewhat unstructured.</td>
<td>Exceptional use of material that clearly relates to a focused thesis, supported by various supported materials.</td>
<td>1-4</td>
</tr>
<tr>
<td>Creativity</td>
<td>Delivery is repetitive with little or no variety in presentation technique.</td>
<td>Material presented with little interpretation or originality.</td>
<td>Some apparent originality displayed through use of presentation, but interpretation of presented materials unstructured.</td>
<td>Exceptional originality of presented material and interpretation.</td>
<td>1-4</td>
</tr>
<tr>
<td>Presentation</td>
<td>Greatly exceeding or falling short of allotted time.</td>
<td>Exceeding or falling short of allotted time.</td>
<td>Remained close to the allotted time.</td>
<td>Presented within the allotted time.</td>
<td>1-4</td>
</tr>
<tr>
<td>Length</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Speaking Skills</td>
<td>Monotone; speaker appeared uninterested in material.</td>
<td>Little eye contact; fast speaking rate, little expression, mumbling.</td>
<td>Clear articulation of ideas, but apparently lacks confidence with material.</td>
<td>Exceptional confidence with material displayed through poise, clear articulation, eye contact, and enthusiasm.</td>
<td>1-4</td>
</tr>
</tbody>
</table>
The Duke of Nuke

A little unstable, famous for overreacting

- His childhood was filled with unrest and bullying from natural disasters such as tsunamis.
- He creates radioactive waste that has trouble being disposed of.
- He is expensive and costly.
- His core is toxic.
- Nuclear power stations are susceptible to meltdowns.
- Human error can create meltdowns or explosions from his core.

- Known for overreacting. He creates diseases such as cancer and birth defects in addition to death.
- His main residence is occasionally a huge nuclear reactor that no one can ever expand.
- Since his malfunction, he is concentrated in the eastern U.S., Europe, and Eastern Asia.
- When contained, he reduces fossil fuel emissions.
- He can be unstable.

Main Nemesis: Human Error

H.O Boi calms the Duke of Nuke when he begins to overheat.
Windy Wu Wind Blowing Warrior!

Advantages
- Renewable
- Travels internationally (can be anywhere)
- Never gets tired (abundant/inexhaustible)
- Lowest priced energy
- Hired worker for good pay (creates jobs)
- No pollution or greenhouse emissions
- Made of stainless steel

Weakness: Dead zones! (Anywhere it is not windy)

Windys Lair is anywhere the wind blows
- Gansu wind farm, China
- London offshore wind farm, UK
- Sweet water wind farm, Texas

Disadvantages
- Blades accidentally harm wildlife (birds)
- She's lowkey ugly (she's a 4)
- Very loud (noise disturbance)
- Wind is not constant
- Has to pay sidekick (cost of maintenance)

Whiff the Worker

Advantages
- Very handy - fixes blades & does maintenance repairs
- Has a great attitude
- Part-time weatherman (informs Windy)

Disadvantages
- Dubs too much
- Gets upset by dead birds
- Requires a lot of money & maintenance
Solar Power

Advantages
- Renewable
- Abundant
- Sustainable
- Saves $!
- Reliable
- Creates Jobs
- Provides energy
- Independence
- Potential to Power the whole world

Disadvantages
- Expensive
- Requires Space
- Requires exotic materials
- The Sun doesn't shine 24 hours a day
- Weather

His Powers:
- Creates sustainable energy for cities within a 1000 mile radius
- He can fly
- Can transfer energy to anything

Weaknesses:
- Only operates when the Sun is out
- Can't perform at night w/o his sidekick

Powers:
- Can fix any Solar panel!
- Provides solar power during the night
- Great engineering skills

Weaknesses:
- His hands are tools
- He's part human

Air: Yuma, Arizona, the nearest place to Earth

Solar panels on his body
- Stores Solar's energy
- Transfers it to him.

Made of solar panels
- Can shoot energy in the form of fire

Absorbs heat and turns it into fire

Blowtorch

Fix Solar panel

This superhero is the best.
Biomaster

Advantages:
- Zaps villains with electricity
- Produces heat, steam and electricity
- Renewable resource
- Reuses waste materials

Disadvantages:
- In some cases, major cause of pollution
- Not very clean
- Risk of deforestation
- Requires alot of water
- Not as efficient as fossil fuels

Nemesis

Money, it can cost more to grow or process the biomass than the fuel that is produced is worth
Photos – Build a Wind Turbine
Energy to Power the World

Overview
Essential Q: Why are countries around the world looking for new energy resources?
- Aging Energy Grid
- Non-Renewable Energy Unit prior knowledge/Fossil Fuel Facts
  ○ What are the problems with using Fossil Fuels?

Essential Q: What are some Energy Challenges begin faced around the world?
- Case Studies (Nat Geo booklet) – Russia’s Vast Energy Wealth

Take Home Lab - Home Energy Audit

Solar Power
- Brainstorm w/ partner – adv and disadv of solar power
- Catch the Sun w/ Q’s
- Solar Impulse Plane
  ○ Takes Flight (2:27) https://youtu.be/hI4VQux3qIo
  ○ https://youtu.be/dnhL8fiTYoY
- Solar Roadways
  ○ Clip: Solar Freakin Roadways! (7:00) https://youtu.be/qlTA3rnpgzU
  ○ UPDATE: http://www.cityofsandpoint.com/visiting-sandpoint/solar-roadways#ad-image-2
- Solar Roofs
  ○ https://youtu.be/4sfwDyiPTdU
  ○ https://www.tesla.com/solarroof
  ○ https://youtu.be/4sfwDyiPTdU
- WS: Photovoltaic Power (Math)
- Nat Geo – Freiburg, Germany – Article
- Nat geo (Sustainability) – Plugging Into the Sun – Article
- Nat geo (Sustainability) – Can Solar Save Us? - Article

Hydro – Wind – Geo Power
- Hydro-Wind-Geo, How much do you know?

Hydro Power
- Nat Geo – Harnessing Water in Brazil – Case Study
- Flipped Notes: (5:40) Hydroelectric Power https://youtu.be/Mly-yIHRdV4?list=PLlIVwaZQks2qK4Z6xBVDRak8an1-kqsgm
**Wind Power**
- (4:23) tour [https://youtu.be/5vj6GwVhQT0](https://youtu.be/5vj6GwVhQT0)
- Enercon E126 - The Most Powerful Wind Turbine in The World [https://youtu.be/qS3CtSX8Eck](https://youtu.be/qS3CtSX8Eck)
- Lab: Wind Energy – Build a Wind Turbine
- WS: Wind power Math Problems

**GeoThermal Power**
- Clip: Energy 101: Geothermal Energy (3:47) [https://youtu.be/mCRDf7QxjDk](https://youtu.be/mCRDf7QxjDk)
- Activity: Geothermal Exploration (graphing)
- Nat Geo – Reykjavik, Iceland – Article
- Nat geo (Sustainability) – Iceland’s Power Struggle - Article

**Smart Energy Grid**
- CS – Building a Smarter and More Energy Efficient Energy Grid pg. 405 w/ Q’s
- Nat geo (Green) – 21st Century Grid – Article
- WS: Energy Problems

**Better Batteries**
- SF 16.1 The Search for Better Batteries pg. 407 w/ Q’s
- Tesla
  - [http://www.consumerreports.org/hybrids-evs/2017-tesla-model-3-electric-car-unveiled/](http://www.consumerreports.org/hybrids-evs/2017-tesla-model-3-electric-car-unveiled/)
  - [https://www.caranddriver.com/tesla](https://www.caranddriver.com/tesla)
  - [https://youtu.be/9fCRWOa9gQk](https://youtu.be/9fCRWOa9gQk)
- Fuel cells
- Hydrogen Fuel
  - SF 16.3 pg. 431 – The Quest to make Hydrogen Workable w/ Q’s
  - Clip: Burning hydrogen: Toyota launches new alternative to electric cars CBS News (3:17) [https://youtu.be/HmblzNI9eMo](https://youtu.be/HmblzNI9eMo)
  - Hydrogen Cars - Toyota Mirai – Explained (4:04) [https://youtu.be/0jnZFGx_4kY](https://youtu.be/0jnZFGx_4kY)
  - [https://youtu.be/p7O05buGLOY](https://youtu.be/p7O05buGLOY)
  - [https://cars.usnews.com/cars-trucks/cheapest-hybrid-cars](https://cars.usnews.com/cars-trucks/cheapest-hybrid-cars)

WS: Car Energy Calculations & Eco Footprint Q’s

DVD: Who killed the Electric Car *93min W/ Q’s

**Biofuels**
- **Algae**
  - SF 16.2 Fuel from Algae
  - WS – Biofuels Clip Q
  - Clip: Energy 101 Biofuels (2:55) [https://youtu.be/-ck3FYVNI6s](https://youtu.be/-ck3FYVNI6s)
  - [https://youtu.be/yCNkmi7VE0I](https://youtu.be/yCNkmi7VE0I)
• **Biodiesel**
  o Clip: Fuel Emissions - Gas, Ethanol, E85, Kerosene (3:00) [https://youtu.be/WOAYoCo3xXA](https://youtu.be/WOAYoCo3xXA)
  o Clip: Turning poop into power, not pollution (6:51) [https://youtu.be/ASoXPy8RWlQ](https://youtu.be/ASoXPy8RWlQ)
  o CS: Is Biodiesel the Answer? & CS: Is Ethanol the Answer? Pg. 425 w/ Q’s

Activity – Superhero Energy Alternatives battle
Activity – Shark Tank

**Human Impact**

- Clean energy Improves Lives – Nat Geo Article
- Nat geo (Green) – Saving Energy, It Starts At Home - Article
- What can I do – Go on an Energy Diet
- Computers: Energy Lab Challenge [http://www.pbs.org/wgbh/nova/labs/lab/energy/research](http://www.pbs.org/wgbh/nova/labs/lab/energy/research)
- Educate Your Community – Ad Campaign Poster on an Alternative Energy Source

**Clean Cities**

- LEED Certification
  o What is LEED? Leadership in Energy & Environmental Design
  o Clip: What is LEED (1:10) [https://youtu.be/tIVseOWToL4](https://youtu.be/tIVseOWToL4)
- Green Design
- Computers: You have the power – play the game… [https://www.nationalgeographic.org/game/national-geographic-energy/](https://www.nationalgeographic.org/game/national-geographic-energy/)
- Nat Geo – Portland Oregon - Article

**Wrap-up**

- Battle of the Most Sustainable Roomies
Sell Me A Car! Alternative Fuel Vehicle Project

Objective: Create a sales pitch to try to convince me to buy your alternative fuel vehicle car. The sales pitch will come in two forms: a PowerPoint presentation (no more than 5 minutes long) and a billboard.

Sales Pitch Requirements: Your Sales Pitch Must Include:
- Type of vehicle
- Cost to purchase
- Anticipated life expectancy of the vehicle
- Type of fuel used
- Costs associated with the maintenance of the vehicle
- Distance traveled on a tank of fuel
- Mileage
- How fast does the vehicle go?
- Advantages of owning the vehicle
- Disadvantages of owning the vehicle
- Would you purchase this vehicle?

Billboard Requirements: Your billboard must include:
- A picture of your car type
- A catchy slogan
- Any other additional information that you would like

Types of Alternative Fuel Vehicles
Fuel Cell
Hybrid gas/electric
Propane
Natural gas
Ethanol
Fossil fuel- Gasoline
Biodiesel
Electric-100%

Please include references. Convince me to buy your product!
Energy Source Shark Tank
DUE: ______________

With the growing desire to switch from nonrenewable to renewable energy sources, how can we decide which energy resource to use? This project is designed to compare and contrast forms of renewable energy.

Each group is a “start-up” company for a type of renewable energy:
1. solar power/photovoltaics
2. wind
3. hydropower
4. bioethanol
5. biodiesel
6. hydrogen
7. geothermal
8. biomass (anything burnable other than ethanol/diesel)

Choose a name for your company and divide up responsibilities. Each group will have an expert in:
1. Net energy yield (function and efficiency) /Basic costs for start-up & running
2. How it works: *this is the most important part to be clear on*
3. Environmental impact (human health, climate, etc)
4. Effect on national and global economics and military security (vulnerability to attack, etc)

Your goal is to produce a 5-7 minute commercial aimed at investors to convince them to put money towards your company and your technology. Some investors are financial geniuses but may not have a strong scientific background. Your audience needs to understand how your energy source works and how much energy will be produced, otherwise they will not want to invest!

Grading

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<tr>
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<th>5</th>
<th>3</th>
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<tr>
<td>Company name</td>
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<tr>
<td>Net energy yield: function/efficiency</td>
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<td>Development costs</td>
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<td>How it works</td>
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<td>Economic/security impacts</td>
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<tr>
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<td>3</td>
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</table>

# of investors acquired/Peer Reviews:_______/25pt        TOTAL SCORE: ______/100 points
You are an investor with a significant amount of money to invest in a renewable energy start-up company, or to split between many companies. Based on the pitches you see, how much money (in terms of a %) would you invest in each company, and why?

<table>
<thead>
<tr>
<th>Resource/Company</th>
<th>% Investment</th>
<th>Why?</th>
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<tbody>
<tr>
<td>Solar</td>
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<td>Geothermal</td>
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<tr>
<td>Biomass</td>
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</table>
**APES Energy Problems**

**The Basics:**

**Energy:** The basic unit of energy is a Joule (J). Other units are calorie, kilojoule, British Thermal Unit (BTU), and therm.

Thermal Unit (BTU), and therm.
- $1000\text{J} = 1 \text{kJ}$
- $1000\text{cal} = 1\text{kcal}$
- $1 \text{cal} = 4.184 \text{J}$
- $1 \text{BTU} = 1.05 \text{kJ}$
- $1 \text{therm} = 100,000 \text{BTU}$

**Power:** Power is the rate at which energy is used. $(P = \frac{E}{t})$ Unit: Watt

$1\text{W} = 1\text{J/s}$  
(1 Watt = 1 Joule per second)

A 100 Watt bulb uses 100 J/sec of electrical energy. If it is 20% efficient, then the bulb converts 20% of the electrical energy into light and 80% is wasted by being transformed into heat (ever felt a hot light bulb?).

**What is the example of the First Law of Thermodynamics above?**
- Electric energy transformed into light and heat energy
- This is the law of the conservation of energy. It states that energy can neither be created, nor can it be destroyed. This means that the total amount of energy in the universe always remains conserved, or constant. However, energy can be changed from one form to another.

**What is the example of the Second Law of Thermodynamics above?**
- The 20% efficiency (80% waste) increasing disorder
- This is the law of increasing entropy. It states that the entropy of the universe increases with every physical process (change) that occurs. Entropy refers to the level of disorder, randomness, or chaos, of a system. The higher the randomness of a system, the higher its entropy. The more organized a system, the lower its entropy.

**Practice:**

(ALWAYS SHOW YOUR WORK!!!)

1. How much energy, in kJ, does a 75 Watt light bulb use then it is turned on for 25 minutes?

2. The Kilowatt Hour, or kWh, is not a unit of power but of energy. Notice that kilowatt is a unit of power and hour is a unit of time. $E = P \times t$ (rearranged from above). A kilowatt hour is equal to 1 kW delivered continuously for 1 hour (3600 sec). How many kJ are in 1 kWh?

3. Assume your electric bill showed you used 1355 kWh over a 30-day period.
   a.) Find the energy used, in kJ, for the 30 day period.
b.) Find the energy used in J/day.

c.) At the rate of $.0749/kwh, what will your electric bill be for this month?

4. A 100 Watt light bulb is 20% efficient. \(100 \text{ W} = 100 \text{ J/s}\)
   a. How much energy does it use in 12 hours of operation?

   b. How much energy does the bulb convert to light during 12 hours?

   c. Convert total energy use to kWh

5. An electric clothes dryer has a power rating of 4000 W. Assume a family does 5 loads of laundry each week for 4 weeks. Assume each dryer load takes 1 hour.
   a. Find the energy used in J and kWh. \(4000 \text{ W} = 4000 \text{ J/s}\)

   b. Find the operating cost for 4 weeks. Assume cost is $.0758/kWh

6. Refrigeration is costly in terms of energy usage. A single-door, manual defrost refrigerator uses 600 kilowatt hours/year (abbreviated kWh/yr). A large, 20 cu ft two-door automatic defrost refrigerator uses 1880 kWh/yr. How many kcal/yr do each type of refrigerator use? \(1 \text{ kWh} = 860 \text{kcal}\)
7. Assume you use an air conditioner for a total of 137 days, 24 hours per day, at a rate of 7.25 kWh per hour. Assume the cost per kWh is $0.0825 and 1 kWh = 3400 BTUs
   a. Calculate the total number of kWh used per year.
   b. Determine the cost of air conditioning for one year.
   c. How many kcal are used per year?
   d. How many BTUs are used in one year?

8. Suppose your electric lights use 400 watts per hour and average four hours per day, every day for one year.
   a. How many kWh per year does this represent? 400 W = 400 J/s
   b. If replacing the lights with a fluorescent bulb would save 60 w per night, what savings in kWh does this represent in one year?
   c. If the fluorescent bulb costs $18 but lasts for 10 years, would you consider it a wise investment over incandescent bulbs? Explain your answer.

9. Transportation energy is costly.
   a. Calculate the gallons of gas use just for going to the supermarket in one year if you take 5 trips to the store per week, traveling 7.5 miles roundtrip, and your car gets 22 miles per gallon.
b. Convert the gallons to kcal/year if there are 32000 kcal per gallon.

c. What are some of the other energy uses associated with getting foodstuffs to the consumer other than transportation costs?

d. What suggestions would you make to the “average American” to help save energy and money relating to the answers you gave in C?

10. The environmental impact of washing a load of dirty dishes in an electric dishwasher differs from that of washing them by hand in a sink. Use the information and data below to answer the questions that follow. Show your calculations.

Assume:

i. The dishes all fit in one load.
ii. The water coming into the water heater for the sink & into the water heater in the dishwasher is at 50° F.
iii. The water heaters for the sink and the dishwasher are both 100% efficient.
iv. In one complete cycle, the electric dishwasher uses 10 gallons of water heated to 140° F and the dishwasher also uses 0.500 kWh of electrical energy for its mechanical operation.
v. Washing the dishes by hand requires 20 gallons of water heated to 110° F.

Other Information:

1 gallon of water = 8 lb. water
1 BTU = the amount of energy needed to raise the temperature of 1 pound of water by 1° F.
1 kWh = 3400 BTUs.

a. Calculate the total energy (in BTU’s) used both to heat the water and run the electric dishwasher to wash a load of dishes.

b. Calculate the energy (in BTU’s) used to heat the water for washing the load of dishes by hand.
Biofuels

Energy 101 Biofuels (2:55)  https://youtu.be/-ck3FYVNl6s

1. What can biofuels be created from?

2. Biomass is ____________________ material.

3. List the two examples of nonedible biomass that can be used as biofuels.

4. In the future what are some things we can grow that could be used specifically for making biofuels?

5. How does it work?
   a. ____________________ can be used to breakdown biomass into liquid sugars.

   b. Then ________________________ like ________________________ ferment those into renewable fuel.

   c. Extreme _______________ can break down biomass too.

   d. When you take ________________________ out of the mix biomass is rapidly broken down into a bio-crude oil to be refined into biofuel.

   e. Add Oxygen to high heat and biomass __________________ are converted to a ________________ and that can be converted into biofuel.


6. What are the large manmade ponds of algae called?

7. In general, how long does it take to cultivate each new crop of algae?

8. What do we use from the algae to make the biofuels?

9. Microalgae could potentially produce up to ________________ times more oil than land based plants.
10. What needs to be done in order to get to the oil inside the algae?

11. What two processes are used to extract the oil?

12. Microalgae is great for the environment because it is a ________________________ fuel source.

13. How many strains of algae are there?

14. Is this fuel source ready for market?

---------------------------------------------------------------------------------------------------------------------------------------

Fuel Emissions - Gas, Ethanol, E85, Kerosene (3:00) [https://youtu.be/WOAyoCo3xXA]

15. Jar #1 = Gasoline = _____% gasoline & _____% ethanol
   a. Description of jar after burning:

16. Jar #2 = E85 = _____% gasoline & _____% ethanol
   a. Description of jar after burning:

17. Jar #3 = 2 Cycle Fuel (gasoline & oil)
   a. Description of jar after burning:

18. Jar #4 = Kerosine
   a. Description of jar after burning:

19. After a few hours the emissions settle on the filter paper, which two sources of fuel burn the cleanest?
Home Energy Audit

Introduction

Energy plays a fundamental role in the way we live our lives. Energy keeps our homes a comfortable temperature, heats our water, lights our lights, chills our food, and keeps our televisions and other appliances running. All of this requires a lot of energy: Households consume nearly one-fifth of the total energy used in the United States each year. Most of this energy is generated by burning fossil fuels – coal, natural gas and oil – which results in greenhouse gas emissions. Home energy use contributes 20 percent of the nation’s annual carbon dioxide (CO₂) emissions from fossil fuel combustion. Figure 1 below compares the CO₂ emissions from different household energy categories. Finding ways to use less energy, more efficiently is important to reducing our climate impact.

In this activity you will conduct an energy audit of your home to assess its energy efficiency. You will investigate some of the features that make a building an energy-waster or an energy-saver, and identify steps you could take to reduce how much energy you use – and ultimately, how much CO₂ is generated by your household energy consumption.

Use less energy - It may seem obvious, but using less – or conserving - energy is a straightforward strategy for reducing greenhouse gas emissions. Energy conservation involves reducing or eliminating unnecessary energy use or loss. Turning down your thermostat when you’re not home, for example, is a conservation strategy. Your heater isn’t working to keep an empty house warm, which means it uses less energy than if it were kept on all day. Turning off lights when you don’t need them and taking shorter showers are additional examples of conservation. Energy can also be conserved if your home has certain design features, such as south-facing windows. South-facing windows receive more direct sunlight, and the natural energy from the sun can increase the interior temperature of our homes. In the winter, this solar energy can offset the amount of energy that would otherwise be used to heat that room. In the summer, closing window shades can help keep that room cool. Deciduous trees outside south and west-facing windows also provide summer shade.

Use energy more efficiently - Energy efficiency refers to products or systems that use less energy to do the same or better job than others. Consider light bulbs, for example. A compact fluorescent light bulb (CFL) is more energy efficient than a standard, incandescent light bulb. For the same amount of light output, CFLs use up to 75 percent less energy. Plus, they can last up to ten times longer! So by using CFLs and taking other steps to make our homes as energy efficient as possible, we can get more out of every unit of energy we consume.

For your home energy audit you will examine a variety of features and behaviors that affect home energy use, such as windows, insulation, heating systems, water use and electricity. In each category, identify the features and behaviors in effect at your home, and whether they represent an energy efficiency or energy conservation feature or behavior.

Procedure:

1. Conduct your audit on the back of this sheet
2. Answer the questions below...

Questions:

1. What is the difference between energy efficiency and energy conservation?
2. In your opinion, based on the results of this audit, how energy efficient is your home? Explain.
3. What area of your household do you think needs the most work to become more efficient?
4. What are three things your household could do to conserve more energy?
5. Are you willing to make these changes? Why or why not?
6. For what purposes is hot water really needed in the home? In your opinion, what are some reasons many people use more hot water than they really need?
7. What energy efficiency or design features do you think should be considered when constructing new homes?
8. Did you come across any other factors that might affect home energy use, but were not included in this audit? What were they?
Hydrogen Fuel Cells


1. What four things are fuel cells being used for today?

2. Hydrogen fuel cell exhaust is ________________________________.

3. How do you get more power from hydrogen fuel cells?

4. Hydrogen is not an energy source it is an energy _____________________.

5. What are the two common ways to extract Hydrogen?

Burning hydrogen: Toyota launches new alternative to electric cars CBS (3:17)  https://youtu.be/HmblzNI9eMo

6. Which major car company launched their first Hydrogen car?

7. Where are the Hydrogen fuel tanks located in the car?

8. How many miles can this car travel on a single tank?

9. What is one major drawback to Hydrogen fuel cars?

10. How many Hydrogen fuelling stations does California have currently?

11. What other car companies have Hydrogen fuel cars?

12. What is the price range for the Toyota Hydrogen car in this clip?

13. What will help keep the cost of these cars down and more affordable to the average person?
1. Hydropower can generate __________________________, __________________________, and __________________________ energy.

2. Describe the process of hydropower (ie. How do we get the electricity?)

3. How long has America been using hydropower?

4. What percent of all our electricity is generated from hydropower?

5. What makes hydropower renewable?

6. Describe the types of technology used to create hydropower.
   a. Impoundment (Dams):

   b. Diversion:

   c. Pumped:

7. What are some of the things being done today to improve hydropower?

8. How many dams are in the U.S today?

9. How many of the dams in the U.S. produce power?

10. List 2 types of technology being used to make hydropower even more environmentally friendly?

11. Where is the Bay of Fundy?

12. What makes this bay so unique?

13. What is the average distance between tides in most of the world?

14. What is the average distance between tides in the Bay of Fundy?

15. The natural ___________ of Fundy’s water corresponds with, and is reinforced by, the ___________.

16. What is the name of the tidal power generating station in the Bay of Fundy?

17. What will the newer generation of tidal power in the bay consist of to generate power?


18. What is an “ideal place” for a lot of wind?

19. Describe how a wind turbine works…
   a. Blades:

   b. Weathervane:

   c. Rotor/Gears:

20. What is the RPM of a wind blade?

21. What speed do the gears spin to generate the electricity?

22. Why are wind turbines so tall?
23. What is the length of ONE blade?

24. What is the diameter of the turbine blades full circle?

25. Besides land, where else could you find wind turbine farms?

26. How much of the U.S. population lives within 50 miles of the coastline?

27. How does geothermal energy work? (Where does it come from?)

28. What areas of the world would you more likely find geothermal energy?

29. What is the most common type of geothermal power plant?

30. Describe how each of the following types of geothermal power plants work.
   a. Dry Steam Power Plant:

   b. Flash Steam Power Plant:

   c. Binary Cycle Power Plant:

31. List some of the benefits of geothermal energy.

32. What % of the power along the Northern California coast is generated by Geothermal energy?
Questions:
1. Which sector has the largest carbon footprint?

2. What is the megatrend in where people live?

3. a. What is the name of the second tallest building in the world?
   b. Where is it?
   c. Why is it relevant?
   d. What is providing the energy to the building?
   e. What is “intelligent” skin?

4. The EPA estimates that on some days as much as __________% of the pollution above LA comes from ________________________________.

5. What does LEED stand for?

6. What do “Green” buildings do?

7. List ONE example of Why Sustainable Design?

8. What was MGM’s added cost to achieve LEED Gold for their Nevada project?

9. What was their energy savings due to their LEED Gold?

10. How long will it take MGM to recoup their costs?

11. Which state is the leader in LEED certified buildings?

12. Buildings of the future should be able to do what?

13. List the 3 main categories of Benefits for Sustainable Design.
Wind Energy

ALWAYS SHOW YOUR WORK!

Exercise 2: Windpower

Consider a wind turbine that is rated at 1.5 MW. This means that with sufficiently high winds, it will produce 1.5 MW or 1500 kW of power. The installed cost of this turbine is $1.5 million.

1. If this turbine runs at its rated power 100% of the time for a full year, how much energy would it produce in a year?

   ________________ (million kWh/year)

2. This wind turbine has a capacity factor equal to 0.38. This means that over a year, it will produce only 38% of its theoretical maximum energy production. How much energy does this turbine actually produce in a year?

   ________________ (million kWh/year)

3. Over the next 20 years, US annual electric energy consumption will increase by 1.5 trillion kWh/year. How many 1.5 MW wind turbines would be needed to supply 10% of this additional energy?

   ________________

4. Calculate the cost of installing these wind turbines.

   ________________ ($)

5. Assuming the electric energy produced by these turbines is worth 5 cents per kWh, these turbines would generate electric energy worth $7.5 billion/year. Calculate the simple payback period for these turbines. (Payback period is the time it takes for a system’s net benefits to equal its cost.)

   ________________ (years)
Creative interactive web-based projects, engaging video clips, Socratic seminar, various non-fiction documents, collaborative groups and community outreach are all part of a four to five week unit designed to encourage students grades 6-8 to see beyond their own footprint. The unit is a student centered, inquiry led format utilizing a variety of learning methods that leads students to challenge the status quo in order to be the agent of change.
Footprints in the Sand

Creative interactive web-based projects, engaging video clips, Socratic seminar, various non-fiction documents, collaborative groups and community outreach are all part of a four to five week unit designed to encourage students grades 6-8 to see beyond their own footprint. The unit is a student centered, inquiry led format utilizing a variety of learning methods that leads students to challenge the status quo in order to be the agent of change.

Guiding Questions

Is it okay to challenge tradition?
How can we reduce our carbon footprint?
How can we start something that matters?

Stage 1 Under the microscope

The first stage is designed to open the gates to question and view data from a variety of perspectives. Similar to the Scientific Method, students start with questions derived from observing Raw Data from Harper’s Index. Once students create in depth questions and record them on post-it notes, they place them in categories displayed in the room: economic, political, social and environmental. Students finish by creating a claim based on analyzing the different perspectives.

To encourage different perspectives, the next activity involves observing the photo “Earthrise” through an I See, I Think and I Wonder strategy. Using the model questions from the prior day, students stretch their thinking to include economic, social and environmental observations. Additionally, students analyze an excerpt from Rocket Men: The Daring Odyssey of Apollo 8 and the Astronauts Who Made Man’s First Journey to the Moon focusing on craft and varying perspectives. Using the model, students create their own sentence with similar figurative language and structure. This exit ticket serves as an assessment.

Next, the class moves into an investigative mode, evaluating multiple infographics on the topic of renewable energy. Students will dissect “What is said?” and “What is NOT said?”- eventually writing a summary with a partner using the 6-step burrito fold method. To further extend their thought process, groups collaborate to analyze the information from various perspectives using a Circle of Viewpoints strategy. We will return to this activity, often re-examining the data.
Stage 2 Hypothesizing

Stage 2 is designed to encourage students to start weighing the benefits and complications of transitioning to renewable energy. To begin, students watch an episode of Student CNN News that focuses on Haagan-Daz’s Looping Project. After discussing the pros and cons, students delve into researching various renewable energies by way of non-fiction texts, Ted Talks and other educational videos. Based on their investigation, groups are tasked with creating a glogster advertisement to “sell” different types of energies. Groups create a list of benefits and then design a glogster advertisement. Glogster is a cloud-based platform for creative and interactive presentations. The advertisements are presented during a Gallery Walk. During the Gallery Walk, students browse the various glogster ads and evaluate varying types of energies by completing a checklist for the ads.

After having explored a variety of energies, students are now ready to engage in a Socratic Seminar. The seminar is designed to give all students the opportunity to share their opinions while synthesizing the material. Each student will participate as a member of the seminar and as an observer. During seminar, students reference their checklists from the Gallery Walk, research from their glogster ad and the Circle of Viewpoint from earlier activities.

Stage 3 Sharing Results; Switching on

Now that students have developed an individual perspective on the benefits of different energies, including ideas about how they can reduce their own carbon footprint, the class moves to applying their insight and understanding with a personal application. With this purpose in mind, groups work to see the interactions between bills established by our government representatives and our community. In a cycle poster activity, students examine two bills: H.R. 2746 (2017-2018) and Senate Bill 100 and the resulting actions. To continue, students explore opinions by reading various letters and opinion articles from the local paper about the city’s move to renewable energy. Students are told that the city has requested their input in regards to the selection of what type of energy the city should use. First, students jigsaw the steps to creating an opinion editorial, then review their research, select an energy, and present a plan by way of a letter to the editor for a local paper. A scaffolded version of the letter is provided to help students format the letter. This is an opportunity for students to see the power of their own voice.

Assessment and Extension

Students are assessed throughout the unit by way of exit cards, group projects, seminar contributions and the culminating writing assignment. Many of the activities in the unit make use of best practices and can
be applied to other units. There are opportunities for extensions to this unit as well. Students could participate in a debate, arguing one energy over another. There are also novels, like *The Boy Who Harnessed the Wind* and *Ship Breaker* that could be offered for literature circles.

Involving students in the practice of expressing their opinions in a civic and public forum, lays the foundation for them to see themselves as a pivotal member of their community, ultimately establishing the commitment to start something that matters.

**Curriculum Connections**

In addition to the focus on all Common Core Reading Standards for Informational Text, the unit also includes the following English Language Arts Standards:

- Writing 7.1 A-E, 7.2 A-F, 7.4-8
- Speaking and Listening 7.1 A-D and 7.2-6

Science and Technical Subjects Standards:

- RST 6-8. 1, 2, 4 and 7-9
Raw Data

Number of the ten deadliest heat waves in recorded history that have occurred since 2000: 9

Estimated percentage chance that the UN’s “worst-case scenario” for global warming is too optimistic: 35

Factor by which more energy is required to mine a dollar’s worth of bitcoin than a dollar’s worth of copper: 4.25

Year in which Alberta, Canada, launched a campaign to eliminate its breeding populations of rats: 1950

Estimated number of times a rat is spotted there each year: 24

Percentage of Americans who, when asked, say that caring for animals gives their lives a “great deal” of meaning: 45

Who mention pets or animals as a source of meaning without being prompted: 5

Year by which a Norwegian company aims to use dead fish to help power cruise ships: 2021

<table>
<thead>
<tr>
<th>What do you notice?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you think?</td>
<td></td>
</tr>
<tr>
<td>What do you wonder?</td>
<td></td>
</tr>
</tbody>
</table>
environmental  social  economic  geographical  political
**WONDER**

- How tight is it?
- How much money can you raise in a fundraiser?
- How big is the moon?
- Space: good picture in picture-in-space.

**THINK**

- They arent cheap.
- What does that make you wonder?
- What do you think about that?

**SEE**

- This is really cool.
- Conductor, Roselyn.
WONDER

Conspiracy
Conspiracy

Imagine Dawson

From Apollo, why was this taken?
When was this taken?

THINK

What do you see?
What do you think about that?
What does that make you wonder?
I wonder why this was taken.

I think this was taken by an astronaut.

I think that space is dry.

I think it rains on the moon.

I wonder why the government put the moon crusty.

It's the moon crusty.

Pictures... when tom this was taken... why?

What do you see? What do you think about that? What does that make you wonder?
SOLAR OR WATER?

MAPPING RENEWABLE ENERGY IN THE U.S.
REDUCTION IN EMISSIONS

- **27 Million Metric Tons**
  - Carbon emissions reduced by solar power annually

- **126 Million Metric Tons**
  - Carbon emissions reduced by wind power in 2014

Forbes

https://www.forbes.com/cit/renewable-energy/#d571561987
73,000
Wind-related jobs

209,000
Solar-related jobs

300,000
Hydro-related jobs

INCENTIVES AND INVESTMENTS

30%
Solar Investment Tax Credit (ITC) for residential and commercial properties through the end of 2019, stepping down to 26% and 22% in 2020 and 2021
STATES WITH THE MOST INSTALLED SOLAR ELECTRIC CAPACITY IN 2015

https://www.forbes.com/cit/renewable-energy/#46d571561987
24,100 MW
Total solar capacity installed in the U.S., enough to power 7 million homes for one year

46%
Decline in the average price of a residential photovoltaic installation between 2010 and Q3 2015
STATES WITH THE MOST INSTALLED WIND CAPACITY IN 2015
74,000 MW
Total wind power installed in the U.S., enough to power 21 million homes for one year

2,734%
Growth in wind electricity generation between 2001 and 2015

STATES WITH THE HIGHEST PERCENTAGE OF ENERGY PRODUCTION FROM HYDRO IN 2015

https://www.forbes.com/cit/renewable-energy/#46d571561987
102,000 MW
Total conventional hydropower and pumped storage capacity in the U.S., enough to power 30 million homes for one year

4.8%
Estimated increase in hydropower usage between 2014 and 2017
Lithium-ion Batteries
Provide high-energy density and high-charging efficiency. Prices are predicted to fall by over 60% by 2020.

Author: Bryan Borzykowski  Designer: The TOM Agency

Engineer

Engineers might not like having to build so much, and work a lot. Engineers would be happy.

Scientist

Scientists would like how there's an easier way to produce energy. Scientists would want it faster.

Archaeologist

Archaeologists would not like it because they can find coal. They would want it sooner.

Circle of Viewpoints

Renewable Energy
Circle of Viewpoints

Renewable Energy

I think engineer would feel happy because they can build new inventions.

If the tools were cheaper, I think scientists would be happy because they wouldn't have to spend so much money.

Clean water would be good because some animals died from dirty water that was in the world.

Scientist

Archaeologist
Engineer

Engineers would be happy because 80% of U.S. electricity by 2050.

Scientist

would be happy because they wouldn't spend too much money.

Contaminated or unsafe water can be converted to drinking water.

Circle of Viewpoints

Renewable Energy
Circle of Viewpoints

**Engineer**

I don't think the engineer would like it because then they would have to think of new ways that they could build new items.

I think that the scientist

I think that the archaeologist would be intrigued by it because they could study that since solar panels can make fresh water and they would like to see if that would species would be extinct.

**Scientist**

**Archaeologist**

**Renewable Energy**
“Earthrise was the most beautiful sight Borman had ever seen, the only color visible in all the cosmos. The planet just hung there, a jewel on black velvet, and it struck him that everything he loved—Susan, the boys, his parents, his friends, his country—was on that tiny sphere, a brilliant blue and white interruption in a never-ending darkness, the only place he or anyone else had to call home.

Lovell was overwhelmed by the smallness of Earth, home to three and a half billion people who, from this vantage point, all wanted the same things—a family to love, food to eat, a roof over their heads, children to kiss. From this distance, he could scarcely comprehend the fragility of Earth’s atmosphere, a layer no thicker than the skin on an apple, the only thing that protected those lives, and life itself.

To Anders, Earth appeared as a Christmas tree ornament, hung, radiant blue and swirling white in an endless black night. From here, it was no longer possible to pick out countries or even continents; all a person could see was Earth, and it occurred to Anders, in this last week of 1968, this terrible year for America and the world, that once you couldn’t see boundaries, you started to see something different. You saw how small the planet is, how close all of use are to one another, how the only thing any of us really has, in an otherwise empty universe, is each other. As Apollo 8 came around the limb of the Moon and readied to reconnect with home, it seemed to Anders so strange—the astronauts had come all this way to discover the Moon, and yet here they had discovered the Earth” (Kurson, 248-249).
"Earthrise was the most beautiful sight Borman had ever seen, the only color visible in all the cosmos. The planet just hung there, a jewel on black velvet, and it struck him that everything he loved—Susan, the boys, his parents, his friends, his country—was on that tiny sphere, a brilliant blue and white interruption in a never-ending darkness, the only place he or anyone else had to call home.

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My heart beats (add a simile) and it reminds me that ____________________________

Races
ticks
Name:  
Date:

My heart feels as time waits to find another source for great love and it reminds me that life is short to value things. - my mom, my friends, my life.

Name:  
Date: 2/14/2019

My heart beat, it reminds me that life is short and could be difficult—school, exams and college.

Name:  
Date: 2/14/14

My heart races like I am in the Indy 500 and it reminds me that I love my horse—my dog, my uncle, my toys, my games, my TV and my batting cage.
Practice Sentence — Ticket Out

Name: Cam A. Fish  Date: 2/14/19

Timothy was a young boy who liked cars— but not just any old cars, he liked Super Cars, American Muscle, and off- roading Jeeps.

Practice Sentence — Ticket Out

Name: Yosmin Espinola  Date: Feb 14, 2019

My heart beats like the clock and it reminded me that its Valentine’s Day and am grateful for having a family, my mom taking care of me, and having a brother that plays with me.

Practice Sentence — Ticket Out

Name: Savannah Z  Date: 2/14/19

My heart races like a rabbit; it reminds me that I need to appreciate life— pitty.
Practice Sentence — Ticket Out
Name: Gonzalez, Rosie Date: 2.14.19
My heart beats and it reminds me I have people who love me. My parents, my sisters, my cousins, my friends.

HAPPY VALENTINE'S DAY

Practice Sentence — Ticket Out
Name: Pilly Portfolio Date: 2/14/19
Valentine's Day is a day of love. And on a day of love, it represents the heart. My heart beats like a car (SWRT SWRTT) and it reminds me to appreciate life. — Savannah

Practice Sentence — Ticket Out
Name: Megan Spadas Date: 2.14.19
My heart beats like a loud speaker and it reminds me about a party that was really fun. I'm grateful for my parents because I wouldn't be here right now and my friends because I wouldn't be as shy as I was when I didn't have friends.
Practice Sentence — Ticket Out

Name: KARIN DE LA CRUZ Date: 2-14-19

My heart beats as fast as a rabbit runs and it reminds me for the people I care for — family, friends and others.

Practice Sentence — Ticket Out

Name: González, Nathalie Date: 

My heart beats as fast as a car and it reminds me that people who care about care about me and my family.

Practice Sentence — Ticket Out

Name: JULIO MORA Date: 2-14-19

My heart beats like a clock ticking fast and when it dies it stops.
### 6-Step Summary Body Paragraph
(Burrito Fold Method)

**Title:** Energy Infographics

Write a topic sentence using the six-part TS method

<table>
<thead>
<tr>
<th>Step 1: Name It!</th>
<th>Verb It!</th>
<th>Finish the Thought (main idea)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Understanding the Grid&quot;</td>
<td>contends</td>
<td>that the United States should</td>
</tr>
<tr>
<td>&quot;Solar, Wind or Water? Mapping Renewable Energy in the U.S.&quot;</td>
<td></td>
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<tr>
<td>&quot;Ramping Up Renewables Energy You Can Count On&quot;</td>
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<td>&quot;Value of Solar Energy&quot;</td>
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<tr>
<td>&quot;7 Amazing Solar Energy Facts You Probably Didn't Know&quot;</td>
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<tr>
<td>&quot;Where America's Energy Goes&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Step 2:** Synonyms for verbs

Focuses on
Explores
Discusses
Argues
Claims

**Step 3:** Final Copy Topic Sentence

The infographic "__________________________" contends that the United States should ____________
Step 4: Fact Outline
Make a short outline of the facts you will include.

Step 5: List transition words
* in order that
* in addition
* for example
* as a result
* instead
* however
* furthermore
* although
* when
* thus
* according to

Step 6: Use your fact outline to write the Final Summary Body Paragraph
TS: The infographic "______________________________" contends that the United States should

CD: For example, renewable energy provides

CD: In addition, there were many

CM: Although the need for renewable energy has been questioned, the author contends that

CD: Furthermore, according to the author

CD: Also,

CM: Because of our use of energy,

CS: Thus, without
Step 4: Fact Outline
Make a short outline of the facts you will include.

- in order that
- in addition
- for example
- as a result
- instead
- however
- furthermore

Step 5: List transition words
- although
- when
- thus
- according to

Step 6: Use your fact outline to write the Final Summary Body Paragraph
TS: The infographic "Hopping up Renewables" contends that the United States should

CD: For example, renewable energy provides better electricity than no other has had before.

CD: In addition, there were many people who bought wired electricity then changed to renewable energy.

CM: Although the need for renewable energy has been questioned, the author contends that the highest percent of electricity from wind and solar power in 2012 in Denmark.

CD: Furthermore, according to the author people spend so much money and time on this product.

CD: Also, the lowest percent of electricity from wind and solar power in 2012 in Oregon.

CM: Because of our use of energy, the world has a lot of air pollution.

CS: Thus, without renewable energy the air would probably not be safe to breathe in.
Step 4: Fact Outline
Make a short outline of the facts you will include.

- For example
- Instead
- However
- According to
- Although

Step 5: List transition words

- In order that
- In addition
- For example
- As a result
- Instead
- However
- Furthermore
- Although
- When
- Thus
- According to

Step 6: Use your fact outline to write the Final Summary Body Paragraph

TS: The infographic "Pumping up Renewables" contends that the United States should provide more energy.

CD: For example, renewable energy provides energy and power.

CD: In addition, there were many electronics.

CM: Although the need for renewable energy has been questioned, the author contends that the lowest percentage of electricity from wind and solar power in 2012 is Oregon.

CD: Furthermore, according to the author, the United States has 3.6% of electricity.

CD: Also, the highest electricity is Denmark.

CM: Because of our use of energy, there is barely any electricity.

CS: Thus, without energy we wouldn't be able to use electronics.
Step 4: Fact Outline
Make a short outline of the facts you will include.

- Wind energy jobs are increasing.
- Texas is #1 in wind installed state.
- California is #1 in solar panels per capita.
- New Jersey is #3 in solar panels.
- Washington is #1 in hydro jobs.

Step 5: List transition words
* in order that
* in addition
* for example
* as a result
* instead
* however
* furthermore
* although
* when
* thus
* according to

Step 6: Use your fact outline to write the Final Summary Body Paragraph
TS: The infographic "Solar, Wind or Water?" contends that the United States should

CD: For example, renewable energy provides
Easy usage of energy

CD: In addition, there were many
types of energy usage

CM: Although the need for renewable energy has been questioned, the author contends that
It is useful to society

CD: Furthermore, according to the author
Wind energy jobs are increasing

CD: Also,
California is #1 in solar panels, Texas is #1 in wind, and Washington is #1 in hydro

CM: Because of our use of energy,
We need new ways to create energy

CS: Thus, without
energy, we would be in a dark
world.
Sell Your Energy!

Directions: Your group will be assigned one of the listed energy sources.

Your job is to research the energy and create a glogster advertisement that sells your energy as the best option for community use.

The glogster ad must include a brief definition/description of the energy, a history of its use, and a list of benefits, both short and long term.

Step 1: Research your energy. Determine how long and where it has been in use.

What are the benefits? Are there any negative results? How available is the energy?

Is it renewable, or finite? Are the benefits economic, environmental, political or social?

Step 2: Create a Glogster advertisement to sell your energy.

You will want to include as many positive benefits as possible and creative ways of engaging the audience. You can include video, sound, and color.

Step 3: Present your advertisement at the Gallery Walk.

Step 4: Walk through the Gallery and analyze and evaluate the other advertisements using your energy Checklist.

Energies:

Biomass, Coal, Geothermal, Hydropower, Natural Gas, Petroleum, Propane, Solar, Uranium, Wind
Glogster Advertisement Evaluation Checklist

During the Gallery Walk, make sure you walk through and analyze each group's advertisement. Complete the following checklist to help you evaluate the energy.

<table>
<thead>
<tr>
<th>Energy</th>
<th>Brief Description</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geothermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydropower</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td></td>
<td></td>
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<tr>
<td>Petroleum</td>
<td></td>
<td></td>
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<tr>
<td>Propane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uranium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wind</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes
<table>
<thead>
<tr>
<th></th>
<th>1 Standard Not Met</th>
<th>2 Standard Nearly Met</th>
<th>3 Standard Met</th>
<th>4 Standard Exceeded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Claim</strong></td>
<td>Not claim included.</td>
<td>Claim included but unclear or contradicts point of view.</td>
<td>Claim strong and clear.</td>
<td>Claim uniquely catches audience's attention.</td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td>No evidence and/or does not relate.</td>
<td>Lacks persuasiveness or support of claim.</td>
<td>Persuasive and supports claim.</td>
<td>Multiple sources evident; persuasive and supports claim.</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td>Billboard is disorganized and difficult to read.</td>
<td>Includes information, but it is not easy to read. Unbalanced.</td>
<td>Appropriate amount of information with a balance between pictures and text. Easy to read and it flows.</td>
<td>Excellent balance between text and pictures. Easy to read and follow.</td>
</tr>
<tr>
<td><strong>Word Choice</strong></td>
<td>Word choices are incorrectly used.</td>
<td>The word choice does not enhance persuasiveness.</td>
<td>The word choice is appropriate.</td>
<td>Word choice is unique and clever.</td>
</tr>
<tr>
<td><strong>Punctuation and Grammar</strong></td>
<td>Billboard has not been edited and has multiple errors.</td>
<td>Billboard has been edited with fewer than 5 errors.</td>
<td>Billboard has been edited with fewer than 3 errors.</td>
<td>Billboard has been carefully edited with no errors.</td>
</tr>
<tr>
<td><strong>Creativity</strong></td>
<td>The ideas are not developed, lack focus and are not original.</td>
<td>The ideas are not fully developed, focused or original.</td>
<td>The ideas are developed, somewhat focused, but not original.</td>
<td>The ideas are developed, focused and original.</td>
</tr>
<tr>
<td><strong>Appearance</strong></td>
<td>Appearance is unfinished and reflects that little time and effort were put forth.</td>
<td>Appearance is not neat and lacks color. The lack of effort is noticeable.</td>
<td>Appearance is neat and colorful.</td>
<td>Appearance shows time and effort. It's colorful and attention-grabbing. Overall polished look.</td>
</tr>
</tbody>
</table>
Renewable Energy Sources

Benefits:
- Clean energy
- Less air pollution
- Available many places
- Low impact on environment
- Negligible noise pollution

History: Wind power has been around since early recorded history. Ancient people used wind to power their homes.

Made by Glogster.com
Renewable Energy Sources
<table>
<thead>
<tr>
<th>Pre-Activities</th>
<th>Seminar Questions</th>
<th>Post Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade: 7/10</strong></td>
<td><strong>Theme: Renewable Energy</strong></td>
<td><strong>Students:</strong></td>
</tr>
</tbody>
</table>

**Student Selection:**

- Walk with the groups
- Participate in a Gallery
- Poster
- Create a blog online
- Read nonfiction articles
- Renewable energies

**Core Questions:**

- What type of persuasive does the support of renewable energy?
- Renewable energy is good for the environment, can you verify or even improve this assumption?
- The assumption is made that renewable energy is needed for renewable energy.
- What would happen if we only relied on renewable energy?
- What would happen if we refused to use renewable energy?
- What benefits from using renewable energy?
- How would a scientist, geologist, economist, environmentalist, zoologist, activity.

**Evaluation:**

- Seminar and responses to follow-up throughout dialogue of social Check for understanding:

   - Write a letter to the City Council.
What can you do to start something?

What questions would you like to ask?

How do you think the Thousand Oaks City Council handled the City of Thousand Oaks' energy?

How can you reduce your carbon footprint?

Extending:

What evidence can you cite that renewable energy is a necessity?

Who should ultimately be held responsible for implementing renewable energy?
Socratic Seminar

Rules and Goals For Seminar

- Focus on ideas and values in the text
- Keep an open mind
- Allow everyone to share their ideas
- Use classmates names
- Try to allow one person to speak at a time
- You do not need to raise your hand
- All opinions matter, and nobody is wrong
- Look at the speaker
- Speak voluntarily at least twice
- Make clear statements using academic language
- Refer to the text and other relevant sources
- Explore inferences
- Acknowledge changes in your perspective

Rules and Goals for Observer

- Do not speak
- Observe seminar
- Keep tally marks for speakers
- Write down thoughts and observations

This Photo by Unknown Author is licensed under CC BY
Self-Assessment: In a Seminar

Name: ___________________________  Date: ______

<table>
<thead>
<tr>
<th>In seminar I....</th>
<th>Rarely</th>
<th>Usually</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Expressed my ideas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listened to the ideas of others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Referred to the text</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed arguments to support a viewpoint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenged truth of statements by others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requested reference from the text to support statements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreed/disagreed with statements made by classmates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felt good about myself</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not interrupt others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was a positive contributor to the group</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Argumentative Letter

Tips for effective letters:

1. Be professional. Letters should be typed or neatly handwritten. Language should be polite, but persuasive. Include any relevant information that supports your opinion.
2. Keep it brief and to the point. Start with a compelling introduction and introduce yourself. When you state the case, make sure you provide clear, factual points. You should include any statistics or research on the topic that focus on important aspects. Keep it simple and short.

Introduction

State your reason for writing the letter. Address the Thousand Oaks City Council directly. The following are sentence frames which may help you structure the introduction.

In recent ______________________, we have been hearing a great deal about ____________________________
by __________________________. ____________________________ has been in the news recently because ____________________________.

In discussions of __________________________, one controversial issue has been __________________________. People who believe __________________________ claim that __________________________. On the other hand, those who believe __________________________ assert that __________________________. My own view is __________________________.

Body

This is where you state your case and include facts, references or research. You will want to consider a counterargument, or what your opponents might say. Here are some sentence frames that may help you write part of the body.

When it comes to the topic of __________________________, most of us would agree that __________________________. Where this agreement ends, however, is on the question of __________________________. Whereas some are convinced that __________________________, others maintain that __________________________. My view is __________________________.

While at one time it may have been true that __________________________, we can now state that __________________________.

_____________________________________ makes sense when he/she/they say __________________________, but __________________________.

Despite the validity of __________________________’s claim that __________________________, he/she/they miss the mark when it comes to __________________________ because __________________________.

Conclusion

Include a call to action, ask readers to follow up with some sort of activity. End with a strong, positive statement in support of your case.
Argumentative Letter

Tips for effective letters:

1. Be professional. Letters should be typed or neatly handwritten. Language should be polite, but persuasive. Include any relevant information that supports your opinion.
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In recent ________________, we have been hearing a great deal about ________________
by ________________. ________________ has been in the news recently because ________________.

In discussions of ________________, one controversial issue has been _________________. People who believe ________________ claim that _________________. On the other hand, those who believe ________________ assert that _________________. My own view is ________________.

Body

This is where you state your case and include facts, references or research. You will want to consider a counterargument, or what your opponents might say. Here are some sentence frames that may help you write part of the body.

When it comes to the topic of ________________, most of us would agree that ________________. Where this agreement ends, however, is on the question of ________________. Whereas some are convinced that ________________, others maintain that ________________. My view is ________________.

While at one time it may have been true that ________________, we can now state that ________________. Not everyone can afford it, but ___ makes sense when he/she/they say ________________. Energy acts _________________.

Despite the validity of ________________’s claim that ________________, they should _________________. He/she/they miss the mark when it comes to ________________, because ________________.

Conclusion

Include a call to action, ask readers to follow up with some sort of activity. End with a strong, positive statement in support of your case.
Argumentative Letter

Tips for effective letters:

1. Be professional. Letters should be typed or neatly handwritten. Language should be polite, but persuasive. Include any relevant information that supports your opinion.
2. Keep it brief and to the point. Start with a compelling introduction and introduce yourself. When you state the case, make sure you provide clear, factual points. You should include any statistics or research on the topic that focus on important aspects. Keep it simple and short.

Introduction

State your reason for writing the letter. Address the Thousand Oaks City Council directly. The following are sentence frames which may help you structure the introduction.

In recent __ years __, we have been hearing a great deal about __ solar energy __ by __ The Acorn __. __ This __ has been in the news recently because __ it's been a major problem in some cities.__

In discussions of __ renewable __, one controversial issue has been __. People who believe __ it was a good idea __, claim that __ the output was __. On the other hand, those who believe __ it wasn't a good idea __, assert that __ they shouldn't have __. My own view is __ asked for permission __ on charging us more on our electricity bills without telling us. __

Body

This is where you state your case and include facts, references or research. You will want to consider a counterargument, or what your opponents might say. Here are some sentence frames that may help you write part of the body.

When it comes to the topic of ________________, most of us would agree that ________________. Where this agreement ends, however, is on the question of ________________. Whereas some are convinced that ________________, others maintain that ________________. My view is ________________

While at one time it may have been true that ________________, we can now state that ________________

________________________ makes sense when he/she/they say __________________, but ________________

________________________.

Despite the validity of ________________'s claim that ________________, he/she/they miss the mark when it comes to ________________ because ________________.

Conclusion

Include a call to action, ask readers to follow up with some sort of activity. End with a strong, positive statement in support of your case.
Since we use a lot of electricity, our community provides us with solar panels. If the Community lowers the price of solar panels more people, more people would afford to buy solar panels and which would keep our community a better place.
Dear Thousand Oaks City Council,

Hello. My name is Christine Gattis and I have been asked “What source of energy should our city use and why?” I am here to convince you that our city should transfer to solar energy. My first point, solar energy is renewable and widespread around the globe. According to SolarReviews.com, “NASA estimates that the sun will shine for another 6.5 billion years. The surface of the earth receives 120,000 terawatts of solar radiation (sunlight) – 20,000 times more power than what is needed to supply the entire world.” We have way more than enough solar energy to power the whole world, so powering Thousand Oaks will be a breeze. I also mentioned that solar energy is widespread across the globe. According to SolarReviews.com, “The level of solar irradiation that falls upon the earth varies with the geography of the planet. Generally, the closer to the equator the more solar energy but what most don’t realize is that solar energy can be used anywhere. For example, in the sunniest parts of America a solar system will produce on average 4.7 kWh of power per 1 kilowatt of solar panels but in the least sunny areas, such as the mountains and north east, it will produce 2.9 kilowatt hours per kilowatt, per day. So although some areas are better than others for solar power it is still viable in almost all locations.” This is undeniable proof that solar energy reaches everywhere, save the deep depths of the ocean. We don’t have to live in homes without power, we don’t have to sit without lights, without access to the fridge, without access to microwaves! It’s so simple, we just have to install these panels and then badda bing badda boom we have power! You can argue that apartments and homes aren’t built for solar panels, but according to SolarReviews.com, “Because of shading, insufficient space and ownership issues many American homes are simply unfit for solar panels. With the introduction of shared solar, homeowners can subscribe to “community solar gardens”, and generate solar electricity without actually having solar panels on their own rooftops. The advantage of this is that installation costs can be cheaper if large numbers of panels are installed on vacant land. Legislation is required to enable community solar in each state and whilst this has existed from some time in some smaller states it is only just coming into play in key states such as California and New York.” Not only is the option of community solar gardens much cheaper than solar panels (around $14,000 for a singular solar panel and around $1,000,000 for one solar garden to power our town of 150,000 people according to Data USA.com), but this would also cover the apartments and houses that can’t handle solar panels. We could easily afford this solar energy and it would benefit us with lowered electricity bills! Anybody in our town, even in the mountains! In conclusion, solar energy is cheap, widely spread, and renewable. Please consider this shift in power sources.
### Letter to the Editor Rubric

#### Teacher Evaluation

<table>
<thead>
<tr>
<th>Name:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Beginning 1</th>
<th>Developing 2</th>
<th>Accomplished 3</th>
<th>Exemplary 4</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening Paragraph</td>
<td>No attempt to catch the reader’s attention</td>
<td>Some attempt to catch the reader’s attention</td>
<td>Good attempt to catch the reader’s attention</td>
<td>Creative attempt to catch to reader’s attention</td>
<td></td>
</tr>
<tr>
<td>Claim</td>
<td>Opinion not clear; No reference to issue</td>
<td>Opinion confusing; little reference to issue</td>
<td>Clear opinion; some reference to issue</td>
<td>Strong, clear opinion; issue identified</td>
<td></td>
</tr>
<tr>
<td>Body Paragraphs</td>
<td>Does not follow format; weak argument; less than 3 points</td>
<td>Strays from format some; only two points; weak argument</td>
<td>Follows format; good flow; 3 points; not persuasive</td>
<td>Weaves format effectively; 3 or more persuasive points</td>
<td></td>
</tr>
<tr>
<td>Evidence CD</td>
<td>Minimal or irrelevant evidence to support claim</td>
<td>Repetitive evidence used to support claim</td>
<td>Good use of evidence to support claim</td>
<td>Unique evidence supports claim</td>
<td></td>
</tr>
<tr>
<td>Elaboration CM</td>
<td>Minimal elaboration</td>
<td>Weak or uneven elaboration</td>
<td>Good elaboration</td>
<td>Effective and various elaboration techniques</td>
<td></td>
</tr>
<tr>
<td>Counter-argument</td>
<td>Does not consider the opposition</td>
<td>Some reference to the opposition</td>
<td>Considers opposition, but weak</td>
<td>Excellent response to opposition</td>
<td></td>
</tr>
<tr>
<td>Transitions</td>
<td>Few or no transitions evident</td>
<td>Inconsistent use of transitions; little variety</td>
<td>Adequate use of transitions with some variety</td>
<td>Consistent use of transitions; variety</td>
<td></td>
</tr>
<tr>
<td>Closing Paragraph</td>
<td>No attempt at lin; no reference to opinion; no call to action</td>
<td>CP does not link; weak summary and small call to action</td>
<td>Good link with general summary with basic call to action</td>
<td>Excellent link with strong summary and call to action</td>
<td></td>
</tr>
<tr>
<td>Word Choice and Tone</td>
<td>Language and tone unclear; lacks description</td>
<td>Some and descriptive words; lacks persuasive tone</td>
<td>Adequate persuasive word choice</td>
<td>Clearly descriptive and persuasive</td>
<td></td>
</tr>
<tr>
<td>Written Expression</td>
<td>Weak vocab; no variety in sentence structure.</td>
<td>Good vocab, some variety in sentence structure.</td>
<td>Strong vocab, sentence structure.</td>
<td>Thoughtful vocab, sentence structure.</td>
<td></td>
</tr>
<tr>
<td>Format</td>
<td>Letter formatted improperly</td>
<td>Not all paragraphs formatted properly</td>
<td>Letter formatted properly; missing address</td>
<td>Letter formatted properly</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL**
Renewable Energy Sources

Wind Power
- Benefits: clean energy source, no air pollution, available in many places, low impact on environment
- Negatives: noise pollution

History: Wind power has been around since early recorded history. Ancient people used wind to power boats on the Nile.
California to rely on 100% clean
delectricity by 2045 under bill
Signed by Gov. Jerry Brown
Lesson Plan Title: How can I overcome my implicit bias?
Lesson Plan Grade Levels: 7
Lesson Plan Subject Areas: Health; History/Social Sciences; Language Arts/Reading; Physical Education

Sometimes students don’t understand why they are studying medieval History. Why do we have to know this? From the beginning to the end of this unit, students knew why they were studying Medieval Africa. In this unit, Walking Away from Implicit Bias, students analyzed the concept of implicit bias, studied Medieval Africa and the spread of Islam, read the novel A Long Walk to Water, engaged in Social and Emotional Learning, wrote formal emails in support of Salva Dut’s organization (Water for South Sudan), and undertook a long walk in order to empathize with the experiences of the “Lost Boys of Sudan.” This truly was an engaging unit that our students are not soon to forget.
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To begin the novel, students were asked what they knew about Africa. Their prior knowledge was pretty scant and most of images evoked by their prior knowledge had to do with animals and poverty. We showed students of Nairobi, a thriving city in Kenya, and students were surprised. We studied both the physical and political geography of the world’s second largest continent. Students used Google Earth to take a tour around various cities and geographical regions in Africa. They became familiar with many of the continent’s 54 countries. Students also analyzed the local news to see how many minutes were devoted to any news about countries in Africa. Not surprisingly, few if any air time was devoted to this part of the world.

Next, we introduced the concept of implicit bias. Students watched PBS videos on the topic and had class discussions about what implicit bias means. Our essential question for the unit was: *How can I overcome some of my implicit bias?* Students were asked to think about what assumptions they have about various groups: teachers, people who live in poverty, rich people, white people, black people, Latinx, etc. We analyzed ways to overcome bias, such as asking questions and building relationships.

Students then identified key elements and people from the medieval African empires of Ghana and Mali. They mapped the spread of Islam into north Africa. Students did simulations of the salt and gold trade in western Africa. Many students were shocked to learn that Mansa Musa, one of the richest people to ever live, was from Africa. They drew pictures of Mansa Musa’s hajj across Africa to Mecca. They read about Timbuktu and identified it as a great center of learning. At the end of the unit, students completed a Google Classroom quiz on the political and physical features of Africa, key facts about the empires and people of medieval Africa, and the contributions made by medieval African societies to the modern world.

To bring history alive, students read *A Long Walk to Water* which discusses Salva Dut’s life during the Sudanese Civil War. Salva was one of the “Lost Boys of Sudan” who walked hundreds of miles from Sudan to Ethiopia to Kenya as a refugee. When the United States offered, Salva asylum, he moved to Rochester, New York and lived with an American family. Years later, Salva learned that his father was still alive but had become ill due to a waterborne disease. He vowed to help bring clean water to his country. He began the organization, Water for South Sudan. Our students LOVED this novel. As they read, they used feelings and needs charts and tracked the character’s social and emotional experiences as he walked to search for his family and safety. All students took AR quizzes on the novel, and an overwhelming majority received 80% or above.
Students then watched documentaries about the lives of the 3,800 “Lost Boys” who moved to the United States from the refugee camps in Kenya. Students enjoyed watching how the young men reacted to some of the cultural differences. At one point in the film, a “Lost Boy” eats a pad of butter and asks, “Is this meat? Is this cheese? I can’t tell.” Students are clearly amused. However, later in the film, students see the hardship the Sudanese faced in our country. Because 25 of the young men were living in close proximity, they often were together. Many white residents in the midwest town were they relocated were scared when groups of the black men walked together. Why we asked? And the students had an answer: Implicit bias. Students then created artistic guides for both new arrivals to the United States and for locals who would welcome refugees from other countries. Some students wrote: Butter is not to be eaten by itself. Others addressed the local community: Be sure to get to know your new neighbors. In this way, we were able to assess students’ ideas for overcoming implicit bias.

To conclude the novel, students wrote emails to famous individuals to inform them about Salva’s organization. In this learning experience, students learned how to research to find “Contact me” sections of individuals and organizations. They also learned how to write informative emails. This project gave real world application to their learning.

As a concluding activity, students embarked on a long walk. They walked to a local park, hiked a trail, and then walked back to school. Along the journey, we had posted quotes from the book to serve as discussion topics along the way and to help students empathize with Salva’s experiences. This field trip may be the highlight of this year!

This was an extremely successful unit that incorporated the critical frameworks of implicit bias and social and emotional learning, while also addressing History and ELA standards. Students were assessed using quizzes on geography and medieval Africa, an AR test, refugee brochures, and the informative email.

Standards addressed:
CCSS.ELA-LITERACY.RL.7.2
CCSS.ELA-LITERACY.RL.7.6
CCSS.ELA-LITERACY.W.7.2
7.4 Students analyze the geographic, political, economic, religious, and social structures of the sub-Saharan civilizations of Ghana and Mali in Medieval Africa.
Kidtopia was inspired during a family vacation when we were able to attend Kidzania in London (https://kidzania.com). I was able to take the format of this hands on world made for children and apply it to our whole school. With the help of many volunteers, teachers, and school staff, we essentially turned our school campus into a mini town and put the children to work. There were volunteers from various jobs around our community and each presenter talked about his or her career for about five minutes and then had the children work on one aspect of his or her job for an additional ten to fifteen minutes. The students then received a small amount of paper Kidtopia bucks which they could spend later at special stores we created. Children in grades 1st through 8th were allowed to freely walk around campus and choose which jobs they wanted to learn about and work at. The Kindergarteners also participated, but they were escorted in small groups by a parent helper. The day was a tremendous success and the students are still talking about it.
Kidtopia

Kidtopia was inspired during a family vacation when we were able to attend Kidzania in London (https://kidzania.com). I was able to take the format of this hands on world made for children and apply it to our whole school. With the help of many volunteers, teachers, and school staff, we essentially turned our school campus into a mini town and put the children to work. There were volunteers from various jobs around our community and each presenter talked about his or her career for about five minutes and then had the children work on one aspect of his or her job for an additional ten to fifteen minutes. The students then received a small amount of paper Kidtopia bucks which they could spend later at special stores we created. Children in grades 1st through 8th were allowed to freely walk around campus and choose which jobs they wanted to learn about and work at. The Kindergarteners also participated, but they were escorted in small groups by a parent helper. The day was a tremendous success and the students are still talking about it.

As educators we have devoted our lives to giving our students the tools to become successful and productive members of society. We want them to have the skills and tools needed to work in the ever changing world. However when we talk about careers, community helpers, or future jobs, we haven’t changed the format in years. Many schools have “career days” or “job fairs” and feel that they are inspiring kids to be excited about choosing a future path. Unfortunately, this is usually not the case. Kidtopia is very different and is a highly interactive version of a “Career Day.” The format focuses on students being able to choose what interests them, performing an aspect of the career or job, and receiving a small financial reward for their efforts. In other words, Kidtopia is simulating what working in the real world will be like. Our state standards emphasize independence, content knowledge, technology, multiple audiences and perspectives, multidisciplinary learning, problem solving, and real world application, and Kidtopia meets all of these standards.

The Kidtopia process took several months. I began by asking for parent and community volunteers. Each presenter planned to speak about his or her job and then working together we came up with various activities for the children to try out. For example, we had a computer engineer who had the children take apart the major components of an iPad. We had a newspaper where students went around campus, conducted an interview, and then wrote a short article to be displayed in the front office. The farmer helped the children plant a school garden. The grocery store worker taught them to bag groceries correctly. I made sure that we enough presenters to fill every classroom on campus and several outdoor locations as well.

After making sure that the presenters had activities, supplies, and locations, I next approached the teachers on campus. I explained the Kidtopia event and the logistics of the day. Since we were simulating real life, there would be no bells to tell students when to change, the grade levels would all be mixed, and the number of students in each location would vary. Each teacher was to be stationed at their
classroom door to monitor the students inside and outside. The teachers were to enforce our school rules and make sure that everyone was treated with respect throughout the morning. Then each teacher was to explain the Kidtopia event, expectations, and locations to his or her students.

I provided the teachers with a short digital presentation which contained talking points. The teachers then helped the students by going over the map, creating wallets to hold Kidtopia bucks, and explaining the careers and locations. There were large maps created by the middle school students and posted around campus and smaller maps made available to students to guide them around Kidtopia.

On the day of Kidtopia the supplies were in place, the presenters were on site, the Kidtopia bucks were ready, the maps were hung, and the locations were labeled. After several months of preparation and organization the day of the event arrived. Teachers opened their classroom doors and students went off to find a job and career. Some students went to the design studio to practice being a graphic designer, while others visited the police station to find out about how to apprehend a suspect. Others role played what the secret service does, or visited the Kidtopia Laboratory to develop fingerprints like a forensic scientist. At the end of each fifteen minute job, the students received two to three Kidtopia bucks and went to find another career to try. Students were able to experience coaching, accounting, flower arranging, nursing, and other careers within the hour and a half allotted. Each student was able to participate in five to six activities and collect their Kidtopia bucks throughout. Towards the end of the event there were parents available to “sell” small donated items such as pencils, pens, and erasers for Kidtopia bucks at several stores around campus. We also opened the Kidtopia store again after school to allow additional time for students to make “purchases.”

The day was a wonderful success and the learning that took place was memorable, meaningful, and real. Several classes followed up with their students and provided written student feedback. One student wrote that she learned, “You don’t always get what you want.” Another student wrote that she learned that pediatric nurses had to change diapers and this would not be the job for her. Students asked to learn about more sports and entertainment careers in the future. They wished they that Kidtopia had been longer and hoped that we would do this every year. As I walked around and supervised the event, I saw students of all grade levels smiling, reading maps, solving problems, listening intently, and running around campus excited to learn about the possibilities their futures hold.
Kidtopia

Kindergarteners breaking down an iPad

Learning how to bandage an arm

Taking an oath to serve as a prosecutor
Role playing what the secret service does

Conducting a chromatography experiment

Flower arranging
<table>
<thead>
<tr>
<th>Forensic Scientist</th>
<th>Learn how to develop and lift fingerprints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary – $3 Kidtopia Bucks</td>
<td></td>
</tr>
</tbody>
</table>
3 Things I learned:
1. I learned that the CPU is the heart of a computer.
2. I learned that there are 10 layers of thousands of wires in an Ipad.
3. I learned that if you get a job and you want a different one, you go to the Human Resources person.

2 Things I found interesting:
1. I found that if you have a cup of water, a piece of filter paper, and a marker you can do an experiment of separating the pigments from the marker.
2. I found that almost everything you see was designed by a graphic designer.

1 suggestion I have:
I think next time we do the kidtopia, we should have more time to explore careers.

3 Things I learned:
1. Fire fighters crawl into buildings because the smoke rises.
2. There are 3 different types of Stethoscopes that pediatrics use.
3. Finger prints can be found by computer if there are pictures.

2 Things I found interesting:
1. You can hear your own heartbeat if you are wear a stethoscope.
2. Fire fighter have a ton of gear that they have to put on quickly.

1 suggestion I have: Next year we should get more time.
3 Things I learned:
1. In one class I learned how to take an elfed apart. It was interesting to see the inside of an elfed and how it worked.
2. In another class I learned how to start my own business, and that when you are in business success is when you have time and money.
3. Finally I learned how to bandage a wounded arm and leg.

2 Things I found interesting:
1. It was interesting to see how an elfed works. When we took them apart I could see all the tiny wires and things that know input to give output.
2. Another thing I found interesting was that when you have a large cut you hold your arm above the level of your heart.

3 Things I learned:
1. I learned that you don't always get what you want.
2. I learned how you can lift finger prints.
3. I learned how to find out what colors were used to make a marker.

2 Things I found interesting:
1. I thought that interviewing people was interesting.
2. I thought that taking care of babies was interesting.
I went to [blank] to ask her questions about the school yearbook. She has been in charge of the yearbook for a very long time. She has a group of eighth-grade students who work on the yearbook at lunch and after school. They take photos for the purpose of preserving history. The students learned to use cameras and edit a book online. The students have been working very hard to create a great book that everyone will enjoy. The yearbook will be very good this year because of the great students and teachers.
Anne Lamott, American novelist, is quoted as saying, “You have to make mistakes to find out who you aren’t. You take the action, and the insight follows: You don’t think your way into becoming yourself.” In Mirror, Mirror, a four-week introspective unit for grades six and above, students question and evaluate the choices and mistakes they’ve made- ultimately molding their future selves. Through Socratic seminar, engaging nonfiction and fiction articles, collaborative groups, artistic representation, research and jigsaw, students are encouraged to draw conclusions about the role obstacles play in their lives.
Anne Lamott, American novelist, is quoted as saying, “You have to make mistakes to find out who you aren’t. You take the action, and the insight follows: You don’t think your way into becoming yourself.” In *Mirror, Mirror*, a four-week introspective unit for grades six and above, students question and evaluate the choices and mistakes they’ve made—ultimately molding their future selves. Through Socratic seminar, engaging nonfiction and fiction articles, collaborative groups, artistic representation, research and jigsaw, students are encouraged to draw conclusions about the role obstacles play in their lives.

**Guiding Questions**

What is beauty?
Why do people lie? What do they gain from it?
How do the obstacles and difficulties you face in life shape who you are?

**A Question of Beauty**

The unit begins by helping students establish a definition of beauty and explore how it affects our perception of others. Students examine images speculating about whether the picture is an example or non-example of beauty. To extend their thinking, students take on the role of a specific discipline like engineer, scientist, artist and geologist and now consider what that perspective would consider beautiful. In order to develop their thoughts, students complete a concentric circle focusing on the relationships between beauty they see in their self, in history in science and in the world. We will return to this visual often adding additional examples. In order to stretch their thinking about the possible consequences of beauty, students respond to a Would You Rather prompt defending their choice with evidence as well as considering any counterarguments. Would you rather live in an exotic tribe where you must stretch your neck until it is 18 inches long, or be in a tribe where a plate is inserted into your lower lip causing it to eventually hang down 6 inches from your mouth?

To build on their definitions, students watch several engaging Edpuzzle videos focused on individuals like Richie Parker who was born with no arms but works as a vehicle engineer for Hendricks Motorsports. Through articles on Newsela like “Teen Wrestler Has Perfect Score and a State Title. He Also Has No Legs,” and the Photo Essay titled, “Raising My Head High: A 16-year-old with Quadriplegia Goes to the Prom,” students stretch their thinking over how each individual’s approach to his obstacles leads to a thing of beauty.
To continue questioning how our perception of others affects our sense of self, students read the Pulitzer Prize winning article titled, “The Boy Behind the Mask.” This nonfiction article allows students to empathize with a young man their own age who suffers from a facial deformity. Students interact with the text through annotation and Socratic seminar, ultimately creating a claim supported with evidence from multiple documents.

Questionable Acts

Armed with their insights, students analyze, question and challenge the findings expressed in the Americans with Disabilities Act and Individuals with Disabilities Education Act in a short research project. Groups identify acts of discrimination our own government admits people with disabilities face; then find a current event that magnifies those obstacles. After presentations, students participate in a Thinking Routine called CSI: Color, Symbol, Image requiring them to reflect and express their reactions. The focus then transitions to analyzing the obstacles characters encounter in the novel Wonder.

In the novel, each character has obstacles he or she must deal with- some out of their control and some of their own doing. To encourage higher order thinking, students take on the point of view of a psychologist analyzing the behavior of a character. Through this activity, students observe a common thread in what contributes to the difficulties the characters create for themselves- lying. In order to investigate why people lie and its consequences, students interact with an infographic titled, “The Psychology of Lying.” Students look for “What Is Said?” and “What Is Not Said?” in the document as part of a class discussion. Next, students read and annotate “The Age Kids Lie the Most, According to Science” and “American Teens Lie, Cheat and Steal- And They Think They’re Okay.” Collaboratively, students make claims supported with textual evidence.

Success: No Question About It

Now with their understanding in tow, students shift to examining obstacles as stepping stones to success. This time, students use the infographic titled, “Kindness Health Facts” to compare and contrast the effects of acting kindly with the effects of acting deceptively. After examining the documents, students participate in a Human Continuum where they respond with self-reflection.

The unit concludes with two culminating activities. First, students read and dissect the arguments presented in the article, “Overcoming Obstacles: How Your Biggest Failure Can Lead to Your Success.” In jigsaw groups, each team analyzes the claim and supporting evidence; then acting as experts, each member presents his or her findings rotating through the table groups. Once students understand the
claims made in the article, they apply that knowledge in an essay connected to how a character’s behavior reflects the idea that “the mere fear of failure can stop people from taking risks.” The essay will be graded based on a rubric students were provided prior. Last, students participate in a Breakout Box activity where they must collaborate in teams to work through the obstacles presented in order to succeed relying on their creative problem solving.

**Achievement and Assessment**

The unit addresses individual needs and considers a variety of learners by providing scaffolds, assessing creative thinking and adapting to multiple modalities. Student success is measured via tests, small and large group discussion, essays, claim writing, common formative assessments and completed projects.

Overall, the unit is standards based, adaptable, student-centered, engaging, and one I will continue to use. *Mirror, Mirror* challenges students to look beyond the classroom to how the detours in life lay the foundation for an adventure-filled journey. I feel an overwhelming need to do this unit since my students are at an age where they are discovering who they will become and what they stand for.

**Standards**

Common Core Reading Standards for Literature and Informational Text
Reading Standards for Informational Text 1-6 and 8-9
Writing Standards 1-9
Speaking and Listening Standards 1-5
Language Standards 1-6
Think like a disciplinarian: How would each perspective define beauty? What would they consider beautiful? How would they express beauty?
Would You Rather: Beauty

Directions: Choose one of the two choices below. Write one body paragraph defending your decision and a second counterargument body paragraph where you look at the weakness of your claim and counter it with more evidence. You may use the internet to look for evidence to support your claim.

BP#1
TS: Having... or Living in...
CD: For example,
CD: In addition,
CM: Although...
CS:

BP#2
TS: Not everyone agrees with...
RC: For example, my opponents might claim that...
CA:
CA:
CS:

Would You Rather:

BE IN AN EXOTIC TRIBE WHERE YOU MUST STRETCH YOUR NECK UNTIL IT IS 18 INCHES LONG -OR- BE IN A TRIBE WHERE A PLATE IS INSERTED INTO YOUR LOWER LIP CAUSING IT TO EVENTUALLY HANG DOWN 6 INCHES FROM YOUR MOUTH?

Respond Below:
Would You Rather

Directions: Choose one of the two choices below. Write one body paragraph defending your decision and a second counter argument body paragraph where you look at the weakness of your claim and counter it with more evidence. You may use the internet to look for evidence to support your claim.

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Respond Below:

Having a stretched neck presents fewer negative and it's better than plates inserted into your lower lip. For example, they have ringed necks because they're passing down traditions and the tribe keep their traditions alive through the centuries. In addition, this tribe have their neck stretched because they thought it made them beautiful and so they could get married and have a family. Although they will never see their neck in centuries until their neck gets to 18 inch long (1 ft and 6 in). So having a long neck it's so much better than having a plate in your lower lip and it's more stylish and isn't that bad to get your neck long I think it looks good.

Not everyone agrees with having long neck. For example, my opponents might claim that you’re not going to see your neck and it might ruin their shoulder and their collar bone. Well long necks is beautiful in that tribe and they get married and it's stylish. Also they don't have it forever, and they could take it off when its 1 ft and 6 in and it doesn’t look different at all, it's just the rings makes it appear longer. Not everyone wants long necks.
Edpuzzle
Mirror, Mirror Video Questions
Overcoming Obstacles

Follow the links to watch the videos. Complete the questions on the provided graphic organizer.

Edpuzzle Video: “Obstacles”:
https://edpuzzle.com/media/5c5a50736d7a884112626b5c

Edpuzzle Video: “Overcoming Obstacles: Steven Claunch”:
https://edpuzzle.com/media/5c5a538bc1d799412c2b258e

Edpuzzle Video: “Overcoming Obstacles”:
https://edpuzzle.com/media/5c5a548028d4ec4139974c53

Pre-Seminar activities:

1. What details, facts or opinions in the article did you find most important, significant or disturbing? (Use bullets here)

   ____________________________
   ____________________________
   ____________________________
   ____________________________
   ____________________________

2. What do you think is the significance of the statement, "Tonight, there are no shadows"?

   ____________________________
   ____________________________
   ____________________________
   ____________________________
   ____________________________

3. Where in the text do you notice **Contrasts and Contradictions**, a moment where the characters act in a way that it contradictory or unexpected given how he/she usually acts?

   ____________________________
   ____________________________
   ____________________________
   ____________________________
   ____________________________
4. What tools do you notice in the article? List 2 openers, 2 S-V splits and 2 closers. Remember the tools can be words like adjectives, adverbs and phrases like prepositional phrases.

Openers:
________________________________________________________________________________________________________________________________________________________

________________________________________________________________________________________________________________________________________________________

S-V Split:
________________________________________________________________________________________________________________________________________________________

________________________________________________________________________________________________________________________________________________________

Closers:
________________________________________________________________________________________________________________________________________________________

________________________________________________________________________________________________________________________________________________________

5. What do you think Tom Hallman Jr. wants the reader to ponder when he says, “He walks into noise and laughter and chaos, into the urgency that is all about being 14 years old. Into a place where nothing is worse than being different”? 
__________________________________________________________________________________________________________________________________________________________________________________________________________

__________________________________________________________________________________________________________________________________________________________________________________________________________

__________________________________________________________________________________________________________________________________________________________________________________________________________

__________________________________________________________________________________________________________________________________________________________________________________________________________
Mirror, Mirror
Example

Concept attainment to grab attention
Example
Concept attainment to introduce concept of beauty (examples and non examples)
Non-example
Non-example
Example or Non-example?
Example or Non-example?
Example or Non-example?
What’s the Universal Concept?

BEAUTY
Application #1

Concentric Circles to introduce the concept within context
Application #2

Use big ideas to embed universal concepts
Americans with Disabilities Act of 1990, Titles I and V

An Act
To establish a clear and comprehensive prohibition of discrimination on the basis of disability.

Be it enacted by the Senate and House of Representatives of the United States of America assembled, that this Act may be cited as the "Americans with Disabilities Act of 1990".

* * *

FINDINGS AND PURPOSES
SEC. 12101. [Section 2]

(a) Findings. - The Congress finds that-

(1) some 43,000,000 Americans have one or more physical or mental disabilities, and this number is increasing as the population as a whole is growing older;

(2) historically, society has tended to isolate and segregate individuals with disabilities, and, despite some improvements, such forms of discrimination against individuals with disabilities continue to be a serious and pervasive social problem;

(3) discrimination against individuals with disabilities persists in such critical areas as employment, housing, public accommodations, education, transportation, communication, recreation, institutionalization, health services, voting, and access to public services;

(4) unlike individuals who have experienced discrimination on the basis of race, color, sex, national origin, religion, or age, individuals who have experienced discrimination on the basis of disability have often had no legal recourse to redress such discrimination;

(5) individuals with disabilities continually encounter various forms of discrimination, including outright intentional exclusion, the discriminatory effects of architectural, transportation, and communication barriers, overprotective rules and policies, failure to make modifications
to existing facilities and practices, exclusionary qualification standards and criteria, segregation, and relegation to lesser services, programs, activities, benefits, jobs, or other opportunities;

(6) census data, national polls, and other studies have documented that people with disabilities, as a group, occupy an inferior status in our society, and are severely disadvantaged socially, vocationally, economically, and educationally;

(7) individuals with disabilities are a discrete and insular minority who have been faced with restrictions and limitations, subjected to a history of purposeful unequal treatment, and relegated to a position of political powerlessness in our society, based on characteristics that are beyond the control of such individuals and resulting from stereotypic assumptions not truly indicative of the individual ability of such individuals to participate in, and contribute to, society;

(8) the Nation's proper goals regarding individuals with disabilities are to assure equality of opportunity, full participation, independent living, and economic selfsufficiency for such individuals; and

(9) the continuing existence of unfair and unnecessary discrimination and prejudice denies people with disabilities the opportunity to compete on an equal basis and to pursue those opportunities for which our free society is justifiably famous, and costs the United States billions of dollars in unnecessary expenses resulting from dependency and nonproductivity.

Works Cited

Summary Frame with Sentence Starters
(Modified from original by Kate Kinsella)

Directions: Complete the sentence starters below to write a summary of "PUBLIC LAW 108–446—DEC. 3, 2004" and "Americans with Disabilities Act of 1990, Titles I and V." Use the verbs and transition words at the bottom for help.

In the Federal Laws and Regulations __________________ enacted by __________________

(title of document) Name individual who signed including the date

verb Main idea Transition word
Congress __________________ verb __________________ First supporting idea

The law __________________ verb __________________ Second supporting detail

________________________. __________________ the group/agency __________________ that __________________

Transition word __________________

Third supporting detail

________________________, Congress/law/document __________________ verb noun __________________ as __________________

Final transition Final supporting or concluding idea

<table>
<thead>
<tr>
<th>Helpful Verbs for Summaries</th>
<th>Transition Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>acknowledges</td>
<td>First</td>
</tr>
<tr>
<td>advises</td>
<td>last</td>
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<tr>
<td>asserts</td>
<td>another</td>
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<td>assigns</td>
<td>Next</td>
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<td>to begin</td>
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<td>defines</td>
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<td>reveals</td>
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</table>
Color Symbolism Chart

Red: Excitement, energy, passion, love, desire, speed, strength, power, heat, aggression, danger, fire, blood, war, violence, all things intense and passionate, sincerity, happiness (Only in Japan)

Pink symbolizes love and romance, caring, tenderness, acceptance and calm.

Beige and ivory symbolize unification. Ivory symbolizes quiet and pleasantness. Beige symbolizes calm and simplicity.

Yellow signifies joy, happiness, betrayal, optimism, idealism, imagination, hope, sunshine, summer, gold, philosophy, dishonesty, cowardice, jealousy, deceit, illness, hazard and friendship.

Dark Blue: Symbolizes integrity, knowledge, power, and seriousness.

Blue: Peace, tranquility, cold, calm, stability, harmony, unity, trust, truth, confidence, conservatism, security, cleanliness, order, loyalty, sky, water, technology, depression.

Turquoise symbolizes calm. Teal symbolizes sophistication. Aquamarine symbolizes water. Lighter turquoise has a feminine appeal.

Purple: Royalty, nobility, spirituality, ceremony, mysterious, transformation, wisdom, enlightenment, cruelty, honor, arrogance, mourning, temperance.

Lavender symbolizes femininity, grace and elegance.

Orange: Energy, balance, enthusiasm, warmth, vibrant, expansive, flamboyant, demanding of attention.

Green: Nature, environment, healthy, good luck, renewal, youth, spring, generosity, fertility, jealousy, service, inexperience, envy, misfortune, vigor.

Brown: Earth, stability, hearth, home, outdoors, reliability, comfort, endurance, simplicity, and comfort.

Gray: Security, reliability, intelligence, staid, modesty, dignity, maturity, solid, conservative, practical, old age, sadness, boring. Silver symbolizes calm.

White: Reverence, purity, birth, simplicity, cleanliness, peace, humility, precision, innocence, youth, winter, snow, good, sterility, marriage (Western cultures), death (Eastern cultures), cold, clinical.

Black: Power, elegance, wealth, mystery, fear, evil, unhappiness, sadness, remorse, anger, anonymity, mourning, death, detachment.
Judging people solely based on appearances limits our experiences. Think of what we might miss out on. When we discriminate against individuals, it leads to isolation. As a result, we not only hurt those with disabilities, but ourselves as well.

Even though people with disability have many obstacles in front of them, hope exists for a better future.

After examining the limitations of those with disabilities in the past, a feeling of optimism emerges as I now understand that laws have improved in order to protect individuals with physical and mental challenges.
Think Like A Psychologist

What is the origin of this behavior? When did it start? Why did it start?

What behavior is interesting about this character (good or bad)?

How do the character’s thoughts and actions form a paradox? Does the character mean to do what he does or does it go against his thoughts?

What factors contribute to the behavior?

What is making it worse? Continue? What is making it better?
THE PSYCHOLOGY OF LYING

What happens when YOU TELL A LIE?

Setting aside any ethical concerns, whether we realize it or not, lying on some scale is something that we do on a daily basis.

But what goes on in your brain when you willfully deceive someone? And how can you spot when someone is LYING TO YOUR FACE?

What happens in your brain?
1. The frontal lobe is activated. This is involved in suppressing or inhibiting the truth.

2. The limbic system is activated. This is involved in the increased anxiety from the deception.

3. The temporal lobe. This is associated with memory encoding and retrieval, it is involved in checking whether the mental imagery is correct.

4. When someone tells the truth, an alternate cognitive process occurs. Fewer brain areas are active in the frontal and limbic system as they are not inhibiting truth or becoming anxious.
STUDIES HAVE SHOWN THAT:

Compulsive liars have up to **26%** more white matter in their prefrontal cortex, so they are better at making connections between thoughts not connected in reality. E.g. "me" and "a fighter pilot"

**A lie detector** measures the activity in the limbic system - the anxiety felt by the subject.

A lie detector can therefore be fooled if a subject is **unusually calm or anxious** during the test. A lie detectors accuracy has been quoted between **50% & 90%**, due to this their use is restricted in court proceedings.

**Eye movement and lying**
THE MOVEMENT OF SOMEONE'S EYES
can tell you what part of the brain they are accessing

You can try and tell if someone is constructing made up information or genuinely recalling what happened by which way they look:

UP AND LEFT:
Indicates visually constructed images (a purple buffalo)

TO THE LEFT:
Indicates auditory constructed sounds (the highest sound of a pitch possible)

DOWN AND LEFT:
Indicates feeling, smell or taste (Can you remember the smell of a campfire?)
UP AND RIGHT: Visually Remembered Images
(What colour was the first house you lived in?)

TO THE RIGHT: Auditory remembered sounds
(What does your mother’s voice sound like?)

DOWN AND RIGHT: Internal Dialogue
(As they talk to themselves)

This is the most common model but is not the same with everyone. Before relying on it, do some groundwork to see which way people look when creating or remembering information.
Most people lie **once or twice a day** - almost as often as they snack from the refrigerator or brush their teeth.

**BOTH MEN & WOMEN LIE EQUALLY**

A fifth of social exchanges lasting 10 or more minutes involve at least 1 lie.

Over a week, people deceive about 30% of those with whom they interact one-on-one.

**COLLEGE STUDENTS**

lie to their mothers in one out of two conversations.
Who Is Lying?

65% of people think we have become less honest in the last decade, compared with 2% that think more honest.

15% of people admitted to telling a lie at work in the last month - of that, 59% did not feel guilty.

79% of people think that most regard personal gain over integrity & honesty.

94% of people think that politicians are likely to lie in their job, compared with...

- 92% for business leaders
- 91% for celebrities
- 77% for lawyers
- 27% for doctors
How to Spot a Poker Bluff

Being able to spot a lie can be difficult but is an enviable skill. Poker is one of the only situations in which lying is encouraged and so it’s a great way to go one on one with people who are possibly lying to you.

The neocortex section of the brain which is made up of the Frontal and Temporal Lobes, is intellectual and capable of dishonesty, it’s therefore unreliable in telling if you’re being lied to. The limbic system however compels a person to react subconsciously to situations, these thoughtless reactions are very honest and can reveal a person’s true feelings or when a player is concealing a bluff.

Establish a baseline

Is the person a pro or an amateur?
This may mean that they intentionally throw you off, or are easier to read. What is their normal behaviour? This will help you spot differences in actions that are caused by a lie.

Feet are the biggest revealers

Primitively our feet react to environmental threats first, by running freezing or kicking, this happened instantaneously and without thinking. Wiggling or bouncing feet usually means a good hand, whilst a sudden freeze indicates a bluff.

Shoulder crunching

Hand to Body Touching
The stress of a lie creates tension in a person's shoulders, you might see a slight crunch or roll in their shoulders to release this - if you're observant enough.

Touching your face or neck is a pacifying action, which means it helps calm us down during stressful situations. Watch for players massaging their neck, stroking their faces or licking their lips.

Heavy Breathing

Increased blood pressure due to the stress of lying means more oxygen is needed for the body. Watch for any slight increases in your opponents breathing rate which might indicate a bluff.

High vs Low confidence Displays
The body language is very different between someone who had a good hand vs one who has a bad hand. Wringing of hands or interlocked fingers is a sign of low confidence, whilst steepled fingers are indicative of confidence.

Sources:
RSNA Radiology (http://pubs.rsna.org)

British Journal of Psychology (http://bjp.rcpsych.org)
Yang, Y., Lencz, T., Bihrlle, S. et al., Prefrontal white matter in pathological liars.

NPR (www.npr.org)
Dina Temple-Raston, Neuroscientist Uses Brain Scan to See Lies Form

BiLife.com (http://www.bilife.com)

Works Cited

American Teens Lie, Cheat, and Steal—and Think They’re Okay

Chuck Colson, BreakPoint

December 9, 2008

The Josephson Institute of Los Angeles, which studies contemporary ethics and morals, recently released its “2008 Report Card on the Ethics of American Youth.” According to the Institute, the “results paint a troubling picture of our future politicians and parents, cops and corporate executives, and journalists and generals.”

The Report Card was based on a survey of 29,760 high school students across the country. They were asked 62 questions about their actions and their attitudes.

STEALING: Thirty percent of those surveyed “admitted stealing from a store within the past year.” Contrary to what you might expect, girls were not significantly less likely to steal than boys—26 percent versus 35 percent.

Whatever drove kids to steal, it wasn’t the impersonal nature of the offense—23 percent admitted to stealing from a parent or relative, and 20 percent acknowledged stealing from a friend.

CHEATING: Inside the classroom, 64 percent admitted to cheating on at least one test, and 38 percent said that they had cheated two or more times during the past year.

LYING: Forty-two percent said that they sometimes lie to save money, and 83 percent confessed that they had lied to their parents about “something significant.” Twenty-six percent even admitted that they lied on some of their survey answers.

Yet despite all the admissions of lying, theft, and cheating, 93 percent described themselves as “satisfied with their personal ethics.” Seventy-seven percent said that, when it comes to doing right, they are better than most people they know.
The Age Kids Lie the Most, According to Science

Esther Crain
Writer, Yahoo Parenting
September 21, 2015

Everyone lies, at least a little bit. But in news that won’t shock parents used to sketchy answers about bad grades and missed curfews, no age group fibs as frequently as teenagers.

That’s the conclusion of a new study, which examined lying across the entire lifespan. The main finding: While adolescents tell the most lies, college-age and young adults between 18 and 29 are the best, most successful liars.

Young children between ages 6 and 8 and adults over 60 were found to be the least dishonest age groups and also the least skilled liars, according to the study, published in the September issue of the journal Acta Psychologica.

Study authors looked at 1,005 kids and adults between the ages of 6 and 77. To find out about lying frequency, they asked each subject to self-report how many lies they had told in the past 24 hours.

On average, the study participants told two lies a day. Yet that number increased throughout childhood, with frequency peaking in the teen years at 2.8 fibs daily before petering out in the young adult years, midlife, and among senior citizens.

When it came to determining who were the best fibbers, the study authors asked subjects to answer certain yes-no questions that each had an obvious right answer, such as “can pigs fly.” Then they measured how quickly each participant answered each question.

What does response time have to do with lying? The researchers theorize that to lie successfully, a person must have high levels of “executive control,” in other words, the ability to suppress the truth almost instantly and not give away the fact that they aren’t telling the truth by stammering or pausing.

“Typically, people are slower and make more errors when lying, and this was taken as an index of the difficulty of lying,” study coauthor Bruno Verschueren, associate professor of forensic psychology at the University of Amsterdam, tells Yahoo Parenting.

Teens and young adults have the highest levels of executive control, the researchers think, because the prefrontal cortex of their brains are sharpest. Young kids have yet to develop executive control because the prefrontal cortex hasn’t matured. “That part of the brain matures at about age 25, then starts to decline in late adulthood,” says Verschueren.

While the study confirms what many parents have long suspected (and makes it clear that the teen TV drama Pretty Little Liars is perfectly named), it doesn’t delve into why teens lie — and what parents can do about it.

“Most people lie to get out of accountability or to avoid owning up to an error, and that’s generally the case with teenagers,” Fran Walfish, a Beverly Hills–based child and family psychotherapist, tells Yahoo Parenting. “When younger children lie, it’s usually to get attention by sensationalizing.”

Also driving adolescents to deceive their parents is a subconscious need to separate and develop their own distinct identity. “At this age, kids are opposing and defying their parents, and that leads them to lie,” says Walfish.

Even though lying is part of growing up, that doesn’t mean parents have to accept it. “Honesty is the foundation of every relationship, and parents should insist that their kids tell them the truth,” says Walfish.
Lying Big Ideas

A central idea is a main point that the author is making. It can always be supported with details from the text. In this activity, you will identify central ideas and text evidence in “American Teens Lie, Cheat, and Steal- And They Think They’re Okay....”

1. Find a central idea

Read the text evidence below. Decide what central idea it supports, and write it in the space provided.

CENTRAL IDEA:

TEXT EVIDENCE:

1. “30% admitted stealing from a store within the past year” p. 94.
2. “64 percent admitted to cheating on at least one test, and 38 percent said they had cheated two or more times during the past year” p. 94.
3. “Forty-two percent said that they sometimes lie to save money and 83 percent confessed that they lied to their parents about ‘something significant’” p. 94.

2. Find text evidence

Find three pieces of text evidence for the central idea below from “The Age Kids Lie the Most, According to Science.” Use section 1 as a model for how to quote text evidence. Be sure to include page numbers for the text evidence.

CENTRAL IDEA: Everyone lies and it even serves a purpose.

TEXT EVIDENCE:

1. 

2. 

3. 

...
3. Find a central idea, text evidence and commentary.

Choose a precept of Mr. Brown’s on pages 311-313 that supports the claim of “The Age Kids Lie the Most, According to Science.” Then write two pieces of text evidence from the article and one commentary. Remember to include page numbers.

CENTRAL IDEA/PRECEPT:

TEXT EVIDENCE:
1. 


2. 


Commentary: Begin with a subordinating conjunction
3. 


Choose a precept of Mr. Brown’s on pages 311-313 that supports the claim of “American Teens Life, Cheat and Steal- And They Think They’re Okay....” Then write two pieces of text evidence from the article and one commentary. Remember to include page numbers.

CENTRAL IDEA/PRECEPT:

TEXT EVIDENCE:
1. 


2. 


3. Commentary: Begin with a subordinating conjunction


225
**DID YOU KNOW?**

**KINDNESS IS TEACHABLE**
“It's kind of like weight training, we found that people can actually build up their compassion 'muscle' and respond to others' suffering with care and a desire to help.”
Dr. Ritchie Davidson, University of Wisconsin

**KINDNESS IS CONTAGIOUS**
The positive effects of kindness are experienced in the brain of everyone who witnessed the act, improving their mood and making them significantly more likely to “pay it forward.” This means one good deed in a crowded area can create a domino effect and improve the day of dozens of people!

**KINDNESS INCREASES:**

**THE LOVE HORMONE**
Witnessing acts of kindness produces oxytocin, occasionally referred to as the 'love hormone' which aids in lowering blood pressure and improving our overall heart-health. Oxytocin also increases our self-esteem and optimism, which is extra helpful when we're in anxious or shy in a social situation.

**ENERGY**
"About half of participants in one study reported that they feel stronger and more energetic after helping others; many also reported feeling calmer and less depressed, with increased feelings of self-worth”
Christine Carter, UC Berkeley, Greater Good Science Center

**HAPPINESS**
A 2010 Harvard Business School survey of happiness in 136 countries found that people who are altruistic—in this case, people who were generous financially, such as with charitable donations—were happiest overall.

**LIFESPAN**
"People who volunteer tend to experience fewer aches and pains. Giving help to others protects overall health twice as much as aspirin protects against heart disease. People 55 and older who volunteer for two or more organizations have an impressive 44% lower likelihood of dying early, and that’s after sifting out every other contributing factor, including physical health, exercise, gender, habits like smoking, marital status and many more. This is a stronger effect than exercising four times a week or going to church." Christine Carter, Author, “Raising Happiness; In Pursuit of Joyful Kids and Happier Parents”

**PLEASURE**
According to research from Emory University, when you are kind to another person, your brain’s pleasure and reward centers light up, as if you were the recipient of the good deed—not the giver. This phenomenon is called the "helper's high."

**SEROTONIN**
Like most medical antidepressants, kindness stimulates the production of serotonin. This feel-good chemical heals your wounds, calms you down, and makes you happy!

**KINDNESS DECREASES:**

**PAIN**
Engaging in acts of kindness produces endorphins, the brain's natural painkiller!

**STRESS**
Perpetually kind people have 23% less cortisol (the stress hormone) and age slower than the average population!

**ANXIETY**
A group of highly anxious individuals performed at least six acts of kindness a week. After one month, there was a significant increase in positive moods, relationship satisfaction and a decrease in social avoidance in socially anxious individuals.
University of British Columbia Study

**DEPRESSION**
Stephen Post of Case Western Reserve University School of Medicine found that when we give of ourselves, everything from life satisfaction to self-realization and physical health is significantly improved. Mortality is delayed, depression is reduced and well-being and good fortune are increased.

**BLOOD PRESSURE**
Committing acts of kindness lowers blood pressure. According to Dr. David R. Hamilton, acts of kindness create emotional warmth, which releases a hormone known as oxytocin. Oxytocin causes the release of a chemical called nitric oxide, which dilates the blood vessels. This reduces blood pressure and, therefore, oxytocin is known as a "cardioprotective" hormone. It protects the heart by lowering blood pressure.
HUMAN CONTINUUM

Directions:
1. Stand up.

2. Imagine that there is a line down the middle of the classroom with one end representing "I Strongly Agree" and the other representing "I Strongly Disagree."

3. I will read a series of statements.

4. After each statement, move and place yourself along the continuum based on how you feel. If you don't feel strongly one way or another, you will stand closer to the middle of the line.

5. Once you're in position, share your thoughts with either shoulder partner.

6. We'll debrief after each statement before moving on to the next.

Statements:

1. People can change.

2. Little white lies don't hurt people.

3. Life is what I make it.

4. Maintaining harmony takes precedence even if it means not telling the truth.

5. Random acts of kindness happen on our campus daily.

6. I can have a positive affect on our campus.

7. The mistakes I've made and the obstacles I've faced will hold me back from reaching my full potential.

8. I am in control of my future.
Creating a good game usually takes thoughtful and careful planning. While each game designer may approach the process differently, we have created this template and brainstorming document to help you start the process of designing games that can work with the Breakout EDU platform.

<table>
<thead>
<tr>
<th>Game Name: What is the name or title of the game you are designing?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overcoming Obstacles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Game Designer: Your Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kari White</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content Areas: What is subject or content areas of your game? Ex. Math, Fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language arts; teamwork</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommended Ages: Who is your target audience?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle school and high school</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ideal Group Size: Is this game intended for small groups? A whole class? Larger audiences?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole class</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suggested Time: How long do you anticipate players needing to complete this game?</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 minutes</td>
</tr>
</tbody>
</table>
Story: There's a locked box in the room. Why are people trying to open it? Think of the story as a script that the facilitator could read to introduce the game to the group about to play.

"I have learned that success is to be measured not so much by the position that one has reached in life, as by the obstacles which he has overcome while trying to succeed" - Booker T. Washington. Your team will need to work together through the obstacles presented in order to succeed. It's going to take creative problem solving. Let's get motivated and keep moving forward; you've got 45 minutes to take this journey.

Lock Combinations: What codes will open the locks on the box?

<table>
<thead>
<tr>
<th>3-Digit Lock - 3 Numbers</th>
<th>683</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Digit Lock - 4 Numbers</td>
<td>2576</td>
</tr>
<tr>
<td>ABC Lock - 4-5 Letters for the ABC Multilock</td>
<td>KIND</td>
</tr>
<tr>
<td>Directional Lock - 5 Directions for the Directional Multilock</td>
<td>↑ → ← ↑</td>
</tr>
<tr>
<td>Key Lock - Where is the key hidden?</td>
<td>In 365 Days of Mr. Browne's Precepts</td>
</tr>
</tbody>
</table>

Setup Instructions: List the steps that a facilitator needs to do in order to set up the game. You can test your instructions by having someone else try to set up your game. You'll quickly figure out how they need to be improved.

<table>
<thead>
<tr>
<th>STEPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Print and hang around the room the &quot;overcoming obstacles wall displays&quot; *notice the number on the bottom left. Display them in order so the four digit code works.</td>
</tr>
<tr>
<td>2 Print the overcoming obstacles scrambled puzzles, cut them and place in an envelope.</td>
</tr>
<tr>
<td>3 In the large break out box, place the &quot;scrambled up word cards.&quot; On the outside of the envelope, write &quot;unscremble us and find our match and you will be able to open the 4 number hatch.&quot;</td>
</tr>
<tr>
<td>4 Use the black light pen to write on the poster &quot;in the middle of difficulty lies opportunity,&quot; find my match and you will find the 3 digit code.</td>
</tr>
</tbody>
</table>
Reflection Questions: When the game concludes, we encourage the use of Reflection Cards to have a debrief with the participants. Please include 5 questions related to your game that could be asked in a discussion.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What traits or steps will help you handle obstacles in the future?</td>
</tr>
<tr>
<td>2</td>
<td>How would you describe your attitude about dealing with obstacles?</td>
</tr>
<tr>
<td>3</td>
<td>What part of collaborating did you find easy?</td>
</tr>
<tr>
<td>4</td>
<td>What part of collaborating did you find most challenging?</td>
</tr>
</tbody>
</table>

Does your game align to any standards (optional)? Local country, CCSS or NGSS for US preferred

4.12.3. Demonstrate strategies to prevent, manage or resolve interpersonal conflicts

**CCSS.ELA-LITERACY.SL.7.1**
Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

**CCSS.ELA-LITERACY.SL.7.1.C**
Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.

Brainstorm Worksheet (OPTIONAL)

This guide below can serve as a visual mapping or brainstorming tool for creating your game. It can also serve as a quick reference for you or a new facilitator.

<table>
<thead>
<tr>
<th>LOCK TYPE</th>
<th>LOCK COMBINATION</th>
<th>HOW WILL THEY KNOW THE COMBO?</th>
<th>WHERE WILL IT LEAD?</th>
</tr>
</thead>
</table>
| 4-Digit Lock | 2576 | From matching the mixed up words from the envelope with wall posters and completing the math problem  
1. Failure (574)  
2. Goals (862)  
3. Opportunity (311)  
4. Divide by 2  
5. Troubleshooting (ADD)  
6. Motivation (276)  
7. Action (757)  
8. Detours (683)  
9. Journey (=) | 1 or 4 locks on hasp to pen small breakout box |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Digit Lock</td>
<td>683</td>
<td>By shining the black light on the Middle of Difficulties Wall Poster-the match of mixed up letters has the number 683</td>
</tr>
</tbody>
</table>
| Directional Multilock | | From SKILLS FROM WISE CONSIDERATION OF OBSTACLES  
The **Directions** will become clear when you observe closely the suggested skills for overcoming obstacles.  
Solution- look for the directional words used in each statement. | 1 or 4 locks on hasp to open small breakout box |
<table>
<thead>
<tr>
<th>ITEM TYPE</th>
<th>COMBINATION / PURPOSE</th>
<th>WHAT WILL THEY DO WITH IT?</th>
<th>WHERE WILL IT LEAD?</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIND</td>
<td>Students read 10 precepts from Mr. Browne. Using the black light, students will find on the back of each card 10 different letters. The letters will be unscrambled to spell out CHOOSE KIND. Solution: Since there are only five letters, the answer is KIND.</td>
<td>1 or 4 locks on hasp to open small breakout box</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Using the large picture with the statement, “Today is a great day to learn a new precept from Mr. Browne,” students will search for the book titled 365 Days of Mr. Browne’s Precept. Solution: Students will find the key on today’s date</td>
<td>1 lock to open last breakout box</td>
<td></td>
</tr>
</tbody>
</table>

232
"The mere fear of failure can stop people from taking risks that might lead to success and triumph in overcoming obstacles."
The result towards which effort is directed
A chance for greater success
"When you shift your thinking, you make it possible to see what you can control—your behavior, your planning, your reactions—and change those things. The troubleshooting skills that you gain in the process are what you need to reach your goals."
The act or process of giving someone a reason for doing something

**Today**

**Tomorrow**

**KEEP CALM AND CARRY ON**
"You have to make mistakes to find out who you aren't. You take the action, and the insight follows: You don't think your way into becoming yourself."
"In the middle of difficulty lies opportunity."
You will have learned more from this than from lying around safely at home.
<table>
<thead>
<tr>
<th>FLERIAU</th>
<th>AINITMVTOO</th>
</tr>
</thead>
<tbody>
<tr>
<td>547</td>
<td>276</td>
</tr>
<tr>
<td>ERTOSBLHGIOUNO</td>
<td>TUDSREO</td>
</tr>
<tr>
<td>ADD</td>
<td>683</td>
</tr>
<tr>
<td>EJUYORN</td>
<td>GSAOL</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>311</td>
<td>757</td>
</tr>
</tbody>
</table>
SKILLS FOR WISE CONSIDERATION OF OBSTACLES

1. Mistakes are normal. As surely as the sun rises every morning, you'll make mistakes as you work toward your goal.

2. Reevaluate. Sometimes what you think you want turns out to not be right for you. It's normal to work toward a goal and then change your plans along the way.

3. If an obstacle can't be overcome - don't feel like you've been left behind - and you can't find an alternative to your goal, then celebrate that you put the effort in and that you did your best. Use your flexible, wise mind and think of another goal that you want to pursue.

4. Don't give up!

Works Cited

Wonder test

Writing Prompt: Choose a quote from “Overcoming Obstacles: How Your Biggest Failure Can Lead to Your Success.” Think of the characters from Wonder who experienced failure, difficulties and obstacles. How does their behavior support the quote’s claim? Focus on one character. Cite evidence from Wonder that supports the claim of the quote. Use your study guide from last night’s homework.

Quotes:

“The mere fear of failure can stop people from taking risks that might lead to success and triumph in overcoming obstacles.”

“The primary difference between successful people and unsuccessful people is that the successful people fail more.”

“If what you’re doing is costing you too much time and energy, the process isn’t what you thought it would be, or it’s not bringing you joy, you need to get out and get a new goal.”

TS: Quote from above.

CD: For example, Evidence from Wonder, include page number. "(Palacio #).

CM: How does the obstacle affect him/her? Make sure you say what the obstacle is. Don’t start your sentence with This obstacle affects....

CM: Start with subordinating conjunction; what’s your insight into the evidence? How does it relate to the quote from “Overcoming Obstacles...”

CD: In addition, Evidence from Wonder, include page number. "(Palacio #).

CM: How does the character handle the obstacle?

CM: How does the evidence relate to the claim of “Overcoming Obstacles...”? Don’t start your sentence with This evidence relates.

CS: Restate the TS in different words

Respond Here:
Overcoming Obstacles: How Your Biggest Failure Can Lead to Your Success

By Jody Michael, MCC, BCC, LCSW

There's been a lot written on the theme of failure and how integral it is to success. In a world where people's value is too often determined by lists of accomplishments and tangible success, failing feels dangerous. Who has time to fail? We feel that we're supposed to have graduated from an Ivy League college, started our own business, and earned our first million by the time we're about 23 years old. If we're already over 30 and haven't done any of these things (or something similar), we start to get that sneaky feeling that we just might be failing. In school, where we learn the "I" word, failure packs such a wallop because it seems to be the end of the story. That letter was our grade, our identity. Some of us never outgrow that notion. The mere fear of failure can stop people from taking risks that might lead to success and triumph in overcoming obstacles.

Heidi Grant Halvorson, psychologist and author of the well-researched book, Succeed: How We Can Reach Our Goals, believes that there really is no such thing as failure. The truth is that certain successes, be they personal or professional, can only grow out of failure, if not multiple failures, as long as we understand how to use these so-called setbacks. What we perceive as a failure may simply be our inner self's way of telling us that we are ready to move to a new level of growth. Hundreds of psychological studies have been done on this kind of achievement, says Halvorson, and they all end up with the same findings: much of success is dependent not on talent but on learning from your mistakes.

About half of the people in the world believe that ability in any area — be it creative or social skill, math or knitting — is innate. You arrive on the earth with a skill, you do not learn it. When these people fail, they will often say, "I'm just not a born knitter," or "I'm not a natural math person." Inherent ability (or lack of it) is their explanation for success (or a lack of it).

The other half believes instead that someone might have a preference or propensity for something — say painting or speaking foreign languages — but this ability can be improved through practice or training. When they bomb a task, they do not say, "I don't paint well." Instead, they say, "Maybe I should have asked for help from an art teacher." Or, "Maybe I was too overwhelmed to really pay attention to my artwork." Or, "Maybe I didn't try hard enough."

It's almost impossible to think rationally while yelling at yourself, "I'm a failure" or "There's something wrong with me." But when you shift your thinking, you make it possible to see what you can control — your behavior, your planning, your reactions — and change those things. The troubleshooting skills that you gain in the process are what you need to reach your goals.

"In the middle of difficulty lies opportunity."

— Albert Einstein

The primary difference between successful people and unsuccessful people is that the successful people fail more. If you see failure as a monster stalking you, or one that has already ruined your life, take another look. That monster can become a benevolent teacher, opening your mind to successes you cannot now imagine.

"Success is as scary as failure," says Lão Tzu, and any coach knows this is true. I can't count the number of times people have told me, "I hate the job I'm doing, but I'm good at it. To do what I want, I'd have to start at zero and I might fail." Dwelling on failure can make us miserable, but dwelling on success can turn us into galley slaves, bound to our wretched benches solely by the thought, "I hate this, but at least I'm good at it." This is especially ironic because researchers report that satisfaction thrives on challenge. Think about it — a computer game you can always win is boring; one you can win sometimes, and with considerable effort, is fun.

There are other types of achievements, of course, such as the "I made it to Friday" feat and the "I survived a 5k and will never do it again" victory. Although those successes are untouched by flat-out failure, they aren't of the soul-lifting variety either: the dazzling job, the loving relationship, the happiness-inducing hobby. In pursuit of those inspirational successes, we do a lot of starting, working and failing. Sometimes the failure is meant to expose areas where we need a skills improvement. Sometimes, the failure is a brick wall to test how committed we are, and how much we want it. But, occasionally, the failure is a big honking sign to change direction.

So, how to know which is which? There is a way to distinguish whether a failure is a signal to double down or walk away, says Halvorson. If, when things get rough, you remain committed and even encouraged by your goal, you should keep going. If what you're doing is costing you too much time and energy, the process isn't what you thought it would be, or it's not bringing you joy, you need to get out and get a new goal.

"You have to make mistakes to find out who you aren't. You take the action, and the insight follows: You don't think your way into becoming yourself."

— Anne Lamott

Replacing your old dream with a new one is imperative, says Halvorson. Otherwise, you'll sit around and stew in your previous failure when you could and should be asking yourself, "What do I want to do new? What are my strengths? What will make me happy for the next 20 or 30 years?"

It is not what happens to us that influences our motivation so much as our perceptions of what happens and the manner in which we choose to act in response. In terms of thought transformation, perpetual victims see life in terms of "Why me?" and "I can't, because..." whereas recovering victims see life in terms of "What can I do with this?"

Unhappiness and discomfort can be calls to action and can give us the motivation to move forward.

Furthermore, significant emotional events are often able to change our behavior or motivate us to act more than insight or any other thought. For example, a man has known for a long time that he should write a living will. Yet, he puts it off until he's almost killed in a car accident.

Life is like driving down a long, winding road. You never know what the next curve will bring — a beautiful view or a dangerous pethole. One thing is certain, though. As long as you're alive, you're still moving forward and eventually you'll leave the obstacles behind. Unwelcome detours finally do end, and easier stretches lie ahead. You eventually do
get to your destination. And you will have learned more from your journeys than from lying around safely at home.

"I have learned that success is to be measured not so much by the position that one has reached in life, as by the obstacles which he has overcome while trying to succeed."

— Booker T. Washington

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Respond Here:

“If what you’re doing is costing you too much time and energy, the process isn’t what you thought it would be, or it’s not bringing you joy, you need to get out and get a new goal.” For example, “If I wanted Mom and Dad to watch me play soccer, I knew that nine out of ten times they’d miss it because they were busy shuttling August to speech therapy or physical therapy or a new specialist or a surgery” (Palacio 82). The obstacle that she faces is that she gets no attention from her parents and because of that she needs to learn how to take care of herself. This obstacle makes Via feel fine because she knows that Augie really deserves all that attention and needs all that attention, but it’s still hard for her to do everything by herself and learn to take care of herself. This shows, that for Via there is no use in complaining because the result would stay the same, so she needs to get out and get a new goal, which is to learn how to take care of herself in life.

In addition, “a heart attack, they told us. Just like that” (Palacio 86). The obstacle in this situation is that her grandmother dies. When this happened Via of course felt sad because she wanted to stay with her grandmother for the rest of her life, but she also felt safe because her grandmother said that she would watch over her in heaven. The claim overcoming obstacles states that when something is not bringing you joy, then you need to get a new goal. This relates to the evidence because Via is looking away from the negative side and looking more to the positive side which is that her grandmother will watch over her in heaven. Clearly, the claim “If what you’re doing is costing you too much time and energy, the process isn’t what you thought it would be, or it’s not bringing you joy, you need to get out and get a new goal” describes the evidence and states that Via overcomes obstacles and learns how to move on and look to the positive side of life.
Wonder Test Student Sample

Respond Here:

"The mere fear of failure can stop people from taking risks that might lead to success and triumph in overcoming obstacles." For example, "The Plague actually sounds cooler," he joked. "Like someone could catch the 'black death of ugliness'" (Palacio 178). Due to assumptions characters make, it's hard to make friends because of how Auggie looks-- it frightens them. Auggie tries to make people laugh in order to focus on something else other than him. In addition, "Rat boy. Freak. Monster. Freddy Krueger. E.T. Gross-out. Lizard face. Mutant. I know the names they call me. I've been in enough playgrounds to know that kids can be mean. I know, I know, I know" (Palacio 79). Since Auggie has started middle school it's been hard for him because he can't tell who's real or fake. Even though Auggie experiences many difficulties as the result of fake friends, he overcomes this by talking to someone and ignoring the fake people. In conclusion, Auggie deals with a lot of failure related to fake friends, but he eventually finds his true friends.
"If what you’re doing is costing you too much time and energy, the process isn’t what you thought it would be, or it’s not bringing you joy, you need to get out and get a new goal." For example, “If I wanted Mom and Dad to watch me play soccer, I knew that nine out of ten times they’d miss it because they were busy shuttling August to speech therapy or physical therapy or a new specialist or a surgery” (Palacio 82). The obstacle that she faces is that she gets no attention from her parents and because of that she needs to learn how to take care of herself. This obstacle makes Via feel fine because she knows that Augie really deserves all that attention and needs all that attention, but it’s still hard for her to do everything by herself and learn to take care of herself. This shows, that for Via there is no use in complaining because the result would stay the same, so she needs to get out and get a new goal, which is to learn how to take care of herself in life.

In addition, “a heart attack, they told us. Just like that” (Palacio 86). The obstacle in this situation is that her grandmother dies. When this happened Via of course felt sad because she wanted to stay with her grandmother for the rest of her life, but she also felt safe because her grandmother said that she would watch over her in heaven. The claim overcoming obstacles states that when something is not bringing you joy, then you need to get a new goal. This relates to the evidence because Via is looking away from the negative side and looking more to the positive side which is that her grandmother will watch over her in heaven. Cleary, the claim “If what you’re doing is costing you too much time and energy, the process isn’t what you thought it would be, or it’s not bringing you joy, you need to get out and get a new goal” describes the evidence and states that Via overcomes obstacles and learns how to move on and look to the positive side of life.
Wonder Test Student Sample

Respond Here:

(TS) "The mere fear of failure can stop people from taking risks that may lead to success and triumph in overcoming obstacles."

(CD) For example, Via always gets defined as "the sister of a kid with a birth defect." (Palacio 91).

(CM) She gets defined by this set of words all the time, at birthday parties or even running into friends at a pizza place they would always say the same things. Via still loves her brother but, she doesn’t want to be called the girl with a deformed brother, she just wants to be Olivia Pullman. Though, Via may want to be normal, high school is a different experience. With so many people she can just be herself without anyone judging that she has a deformed brother named Auggie.

(CM) Via is afraid of just being herself at school so she cannot take risks and become successful.

(CD) In addition, Via wasn’t able to rely on her parents as much, she says "I knew 9 out of 10 times that they’d miss…" (Palacio 82) Via has to learn to be independent at a very young age since her parents were always busy with Auggie. She organizes all her events and stays on top of all her school work herself and has never asked for help.

(CM) She was afraid to open up to her parents for help or any other problems so she always had to take risks and ended up becoming successful in the long run.

(CS) Many people fail trying to be successful and Via also ended up always trying her hardest maybe failing a few times before becoming successful.
As Via overcomes her obstacles, she realizes that "The primary difference between successful people and unsuccessful people is that the successful people fail more." For example, when she starts high school, loses her best friend, Miranda, and says that "she seemed kind of distant" (Palacio 94). After losing her best friend she feels alone at first, but is able to find new friends. Despite failing to keep her friendship with Miranda, Via succeeds at making new friends she may not have met without this failure. In addition, she felt bad about her feelings about August and said "'I swear I've never been embarrassed by him before'" (Palacio 203). She handles this obstacle by telling her mom and talking about it and is able to get over her embarrassment. After she gets over her embarrassment, she invites August to her play and ends up having a good time. In conclusion, without Via's failures, she would not be as successful as she is.
Wonder Test Student Sample

Respond Here:

As August overcomes his obstacles he realizes "The mere fear of failure can stop people from taking risks that might lead to success and triumph in overcoming obstacles." For example, "what I wanted was to go to school, but only if I could be like every other kid going to school. Have lots of friends and hang out after school and stuff like that," (Palacio 4). What August actually wants is to gain acceptance from his peers. This means that he will have a hard time finding people whom he can trust, such as friends. This means he will have to suspicious and careful. He says, "you don’t have to be friends with me. I know Mr. Tushman talked to you.' 'I have no idea what you’re talking about.'" August had trusted another person that was nice and hung out with him too but then betrayed him; he didn’t want summer to do that to him too. He seemed sad enough to not have that many friends, but when he finally finds them it can be really hard for him to keep them. August was scared to fail to getting people to realize that he is just the way he is and no one can change him. He overcomes it by getting his friend back, the one who had betrayed him, Jack. In addition, Auggie has to be put on a brave face on while others stare. August says, "I know I’m weird looking, take a look, I don’t bite," (Palacio 62). His face looks deformed and most of the time he tries to hide it. He is ashamed and tries to hide it from everyone. He has to wait for the others to get used to his face, just as his family has, and when they do he can just be the ordinary kid he always wanted to be. Even though August experiences many difficulties as the result of having a tough childhood, he learns that since he took the risk of going to school it helpfully made his life so much easier.
Research has shown that schools that try to connect their students with the community have a positive, long-term impact on those students. We felt it was important for us to help create those meaningful, real world connections for our students, so we developed the semester-long Project Based Learning unit Project Understanding: Little Buddy Heroes. We explored an area of interest guided by the question, “How can we better understand and support people with differing abilities?” While exploring this essential question, our students began a life-changing journey with some pretty amazing children.
INTRO
Research has shown that schools that try to connect their students with the community have a positive, long-term impact on those students. We felt it was important for us to help create those meaningful, real world connections for our students, so we developed the semester-long Project Based Learning unit Project Understanding: Little Buddy Heroes. We explored an area of interest guided by the question, “How can we better understand and support people with differing abilities?” While exploring this essential question, our students began a life-changing journey with some pretty amazing children.

PROJECT GOAL
The goal of Project Understanding is to get our students into the community, form meaningful connections, gain real world skills, and foster empathy and compassion towards others. We formed a partnership with Douglas Penfield Elementary and Easter Seals Preschool and asked students to “intern” as teacher’s assistants in classrooms at each school. A primary goal of Project Understanding is to find a way to re-engage and connect students to their learning, many of whom have poor attendance and struggle in school. Project Understanding challenges students to serve as role models to their “little buddies”, as well as commit to attending and performing in a real world career setting.

CROSS-CURRICULAR COLLABORATION
This project integrated English Language Arts, Science, and Art, as well as our new district focus of Social-Emotional Learning. This project is easily adaptable for grades 5-12.

PROJECT DESCRIPTION
Project Understanding was launched the second semester of the 2017-18 school year and was offered again the first semester of the 2018-19 school year. Every Monday, students volunteered at one of the partner schools and worked in the role of teacher assistant, one-on-one aide, small group leader, snack-time helper and many other duties. As they became familiar with the children and the needs of their classroom, they created lesson plans and art projects to engage their “little buddies,” developing more of a leadership role during their visits. Students collaborated with their peers to develop engaging, age appropriate, standard-aligned lessons centered around literacy and art. After each visit, students reflected critically on their experiences through verbal and written reflections that guided them through the various Depth of Knowledge (DOK) levels. Students built significant background knowledge of various disabilities through research, firsthand accounts of guest speakers, videos, and hands-on activities, in addition to working with their “little buddies.” Guest speakers included volunteers from Guide Dogs of America, a community member with Spina Bifida, and a VUSD teacher who is a member of the deaf community, while hands-on activities included learning basic American Sign Language and Braille. For their final exhibition, students demonstrated their understanding of our project’s essential question by planning and hosting an “Abilities Awareness Event” at the local middle school. In the end, our students were able to express their understanding of our essential question and pass that knowledge on to the younger students to make an impact.
RANGE OF BENEFITS

As educators we need to move beyond content-focused classrooms toward more student-focused classrooms. We want to give our students the social-emotional competence that will enable them to develop the skills and practices necessary to meet the emerging realities of work with adaptability and resilience. In essence, Project Understanding develops our students’ emotional intelligence. In addition to core academic knowledge, it is important for our students to learn how to be contributing citizens in our school and community. Social-emotional skills such as self-awareness, empathy, and perspective-taking help provide a strong foundation upon which our students can succeed. Our students’ levels of patience and compassion were nurtured when they worked side-by-side with a child who was blind or one who had severe facial disfigurations. While conducting their weekly lesson, they learned firsthand what it’s like to have students not pay attention or not want to participate. Through our weekly whole-class reflections, we observed students growing and maturing. Students would share their challenges or frustrations, and share suggestions with their peers. Throughout this project we always stress to our students how what they are doing is important and relevant to a real-world job. Each student left the project with a completed resume reflecting the skills they developed as part of their “volunteer internship” at the schools. Quite a few students now plan to become teachers in some capacity, and one was even hired as a paraeducator at the school. He began the project expressing his lack of interest in children, and left the project with a full time job and a new path in life.

ASSESSMENT

- The project culminated in the student-led planning and hosting of an Abilities Awareness Event at the local middle school. Each group of students organized a station teaching the middle schoolers about a certain disability and led them through hands-on activities to gain a better understanding of what it might be like for someone to live with that challenge.
- Students designed poster-size paintings of their Little Buddies portrayed as Superheroes. They included information they learned about each of them over the semester. They presented these to their Little Buddies at the end of their volunteer internship. These were hung up in some of the hallways/classrooms at the schools and ultimately taken home to give to their families.
- Final written reflection essay (5 paragraph) detailing their takeaways from the project
- Weekly reflections, both written and oral
- Weekly lesson plans for “little buddies”
- Careers in Education Research Presentation
- Deaf Community Presentation
- Various on-demand writing assignments
- Hands-on activities to assess learning of American Sign Language and Braille

COMMON CORE STANDARDS ADDRESSED

CCSS.ELA-LITERACY.RI.11-12.1, CCSS.ELA-LITERACY.W.11-12.2, CCSS.ELA-LITERACY.W.11-12.7,
CCSS.ELA-LITERACY.W.11-12.8, CCSS.ELA-LITERACY.W.11-12.10, CCSS.ELA-LITERACY.SL.11-12.1,
CCSS.ELA-LITERACY.SL.11-12.5 CCSS.ELA-LITERACY.L.11-12.6
PROJECT UNDERSTANDING

How can we better understand and support people with differing abilities?

ABOUT THE PROJECT

You will work with students, age preschool through fifth grade, in a special needs classroom once a week for the semester. You will gain hands-on experience as a teacher’s aid and get the opportunity to help children, while gaining a greater understanding of disabilities and special needs.

VOLUNTEER DETAILS

WHERE: Douglas Penfield School (K-5) or Easter Seals (preschool). Located next door to each other in East Ventura.

You will be treated as a school volunteer and held to the expectations of an employee/volunteer, which include:

- Full participation in classroom activities and tasks
- Appropriate behavior and dress code
- Excellent attendance
- Excellent judgment and sensitivity working w/students

WHEN: Every Monday during Period 2-3
(12 visits total)
Meet at 2nd period classroom for attendance and backpack drop off, then load bus by 9:20. Return by 10:45 (lunch).

Feb. 26, Mar. 5, Mar. 12, Mar. 19, Mar. 26, Apr. 9, Apr. 16, Apr. 23, Apr. 30, May 7, May 14, May 21

You MUST commit to attending school on these dates. Your students will be counting on you to be there and absences will result in reduced credit or removal from the project.

LEARNING OBJECTIVES

Gain hands on experience volunteering with students with special needs
Increase empathy, patience, and compassion
Learn about career pathways in education and psychology
Increase knowledge about disabilities and childhood development stages
Explore ways to communicate sensitively with people with disabilities
Build relationships and make a difference

COMMITMENT

I, _______________________________, understand the project requirements and will serve as a role model to the children at my volunteer site. By being part of this project, I am committing to having excellent attendance, behavior, and participation in all aspects of the project.

Signature: _______________________________
Why is it important to understand disability and how to treat people with disabilities with respect and dignity?

Because everyone will encounter someone with a disability at least once in their life.

People with disabilities make up the largest minority group in America. (Take notes)

Basic Disability Information:

1. People with disabilities are people like everyone else but aren’t always treated fairly or kindly.

Have you ever seen someone with a disability being treated unfairly?__________

2. People with disabilities have the right to access their communities but often face prejudice and physical barriers.

What can you do when you see someone with a disability facing a barrier?______

3. Approximately 1 out of 10 people in the world has a disability.

What do you think of that statistic?__________________________

4. One in five American adults has a disability.

Do you know someone with a disability?___________________
Who?______________What is their disability?______________
5. Many people will acquire a disability at some point in their life. How can that happen?

6. 4.7 million children ages 3-17 have been diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) in the United States. Do you know someone who has ADHD? How do they act?

7. 7.8% of youth in the United States ages 3-17 have been diagnosed with a learning disability. Do you know someone with a learning disability? What kind of learning disability do they have?
1. **Attention Deficit Disorder (ADD) also called Attention Deficit Hyperactivity Disorder (ADHD):** a developmental disability characterized by inattention, impulsiveness, and often restlessness or hyperactivity. [https://youtu.be/1GIx-JYdLZs](https://youtu.be/1GIx-JYdLZs)

2:01

2. **Autism:** a developmental disability affecting verbal and non-verbal communication and social interaction. It affects a child’s ability to communicate, understand language, play, and relate to others. [https://youtu.be/w9N0_7D_Re8](https://youtu.be/w9N0_7D_Re8)

11:31

3. **Cerebral Palsy:** a disability caused by damage to the brain that affects body movement and muscle coordination. [https://youtu.be/MlhgsM1Sbck](https://youtu.be/MlhgsM1Sbck)

4:07

4. **Cleft Palate:** The fourth most frequent birth defect in the United States, occurring in one out of every 700 births. A cleft lip is a separation of the two sides of the upper lip. A cleft palate is an opening in the roof of the mouth in which the two sides of the palate did not fuse or join together as the baby developed. [https://youtu.be/IUr-5Rwy8VY](https://youtu.be/IUr-5Rwy8VY)

4:17

5. **Cystic Fibrosis (CF):** is an inherited disease that causes certain glands in the body to fail to function normally. The mucus-producing exocrine glands produce thick, sticky secretions that plug the ducts in the lungs and intestines and can interfere with vital functions like breathing or digestion. [https://youtu.be/RvfsSJaMzn8](https://youtu.be/RvfsSJaMzn8)

7:36
6. **Down Syndrome**: the most common and readily identifiable chromosomal condition associated with developmental impairment. It is caused by a chromosomal abnormality of forty-seven instead of the usual forty-six chromosomes.

https://youtu.be/uPy2WsHAls8
6:43

7. **Epilepsy**: a central nervous system disorder that causes a person to have seizures, which are electrical disturbances in the brain that causes a child’s body to move and jerk suddenly. People with epilepsy can’t control their movements during a seizure.

https://youtu.be/ka1l4_fcEAw
1:06
https://youtu.be/jsbAheWIDTY
1:05

8. **Hearing Impairment**: limited or complete hearing loss.

https://youtu.be/XFEYaxFvGXA
7:08

9. **Learning Disability**: a disability affecting a person’s ability to understand written or spoken language. Has difficulty with reading, writing, listening, and/or speaking.

https://youtu.be/OEqd3IAdTRY
3:00

10. **Obsessive Compulsive Disorder (OCD)**: a disability where the brain has trouble “letting go of” a thought (for example: fear of germs or checking something repeatedly).

https://youtu.be/AAumaH3HPyc
2:56

11. **Paraplegia**: a disability affecting a person’s ability to move the lower part of their body.

https://youtu.be/pEa9xMwIhRo
2:09
12. **Spina Bifida**: A birth defect that occurs when the spine and spinal cord don't form properly.

[Video](https://youtu.be/r9yJKvqZzfc)

2:25

13. **Visual Disability**: Limited or complete loss of sight/vision.

[Video](https://youtu.be/QuSzTi6ZHps)

2:17

14. **Sensory Processing Disorder**: Children with SPD have difficulty processing information from the senses (touch, movement, smell, taste, vision, hearing) and responding normally to that information.

[Video](https://youtu.be/K2P4Ed6G3gw)

Using “Eye-gazing” technique for people with communication difficulties.

[Video](https://youtu.be/H9TNaSlisRE)

4:56

Possible project to build for little buddies:

[Video](https://youtu.be/jK8RZwcdjYE)

Ari spelling name 2:15

---

**Autism: heroes**

[Video](https://youtu.be/T5TaELEcpbk)

5:15  Our Special Life

**ADHD**

[Video](https://youtu.be/1Glx-JyDLzS)

2:01
<table>
<thead>
<tr>
<th>Condition</th>
<th>Video Link</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism</td>
<td><a href="https://youtu.be/w9N0_7D_Re8">https://youtu.be/w9N0_7D_Re8</a></td>
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<td>7:36</td>
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</tbody>
</table>
Disability Research Presentations - Student Samples

Mia Barnum

Cystic Fibrosis

Definition: a hereditary disorder affecting the exocrine glands. It causes the production of abnormally thick, sticky mucus in ducts of the lungs & intestines and often results in respiratory infection.

A defect in the CFTR gene causes cystic fibrosis.

4 Facts:
- In the U.S., about 1,000 new cases are diagnosed each year. About 75% of new diagnoses happen before age 2.
- Cystic fibrosis can affect people of any ethnicity and in any region in the world. The only known risk factors are race and genetics.
- A child will only develop the disorder if they inherit the gene from both parents.
- Worldwide, about 70,000 to 100,000 people have cystic fibrosis. It affects males and females at about the same rate.

Jasmine Arias

Sensory Processing Disorder

Sensory Processing Disorder or SPD is a neurological disorder in the brain which the sensory information that the person with the disorder perceives results in abnormal responses.

- Some of the potential causes for SPD may include genetic children born to adults who have autism spectrum disorders may be at higher risk for developing sensory processing disorder.

- Kids who are sensory avoiding may react to a wide range of triggers which include loud sounds, uncomfortable clothing, crowded spaces, or certain food smells or textures, among others. Whatever the trigger, their reactions can be really extreme.

- Sensory processing issues aren’t a diagnosis on their own. But they often co-occur with two conditions, ADHD and autism.

- SPD is not always consistent. Responses to sensory input can vary from kid to kid and from day to day.

- Sensory processing issues are not a sign that kids need more discipline. Adults need to find out what’s causing kids to melt down, not punish them for it.
Project Understanding - Quiz #1

******(Use notes from wk. 2/20-2/23, 2018)

1. This is a disability caused by damage to the brain that affects body movement and muscle coordination.

2. This disability is where the brain has trouble letting go of a thought.

3. This is a disability characterized by three predominant features: inattention, impulsiveness, and in some cases restlessness.

4. This disability means an incomplete closure in the spinal column.

5. This disability means limited or complete hearing loss.

6. This is an inherited disease that causes certain glands to produce thick, sticky secretions that plug the ducts in the lungs and intestines.

7. This is a developmental disability significantly affecting verbal and non-verbal communication and social interaction.

8. This a disability affecting a person’s ability to understand written or spoken language.

9. This is a disability affecting a person’s ability to move the lower part of their body.

10. This disability is an opening in the roof of the mouth in which the two sides of the palate did not fuse or join together as the baby developed.

11. This condition is caused by a chromosomal abnormality. Cell development occurs with 47 instead of 46 chromosomes.

12. This disability means limited or complete loss of sight.

13. This condition is a disorder of the central nervous system that causes a person to have repeated seizures causing a child’s body to move and jerk suddenly.

14. What technique did Cathi Nye tell us they used as one method of getting their students to communicate? (We watched a short video clip about this technique.)
**Project Understanding:** Little Buddy Heroes  
**Career Research Presentation**

You will choose one career to research in-depth and create a Google Slides presentation in Google Classroom.

You will be required to present your slides to a small group of roughly six students.

Your slides should be visually appealing. Font should be large and visible, and images should be clear. You must have each of the following slides:

<table>
<thead>
<tr>
<th><strong>TITLE SLIDE</strong></th>
<th><strong>JOB RESPONSIBILITIES</strong></th>
<th><strong>EDUCATION &amp; TRAINING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Career</td>
<td>List at least 5 tasks that</td>
<td>List any education or</td>
</tr>
<tr>
<td>Your Name</td>
<td>may be required of you on</td>
<td>training needed for your</td>
</tr>
<tr>
<td>+ Image</td>
<td>a daily basis</td>
<td>chosen career</td>
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<td>+ Image</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>SKILLS &amp; PERSONALITY TRAITS NEEDED</strong></th>
<th><strong>PAY, BENEFITS, &amp; ADVANCEMENT OPPORTUNITIES</strong></th>
<th><strong>WORK ENVIRONMENT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>List at least 5 skills or personality traits needed to be successful in this career</td>
<td>List the beginning pay, average pay, and top pay for this career. List benefits, such as medical, dental, retirement etc. List any jobs you might be promoted to if you do well in your chosen career.</td>
<td>Describe what the work environment is for your chosen career. Will you be working in an office or outdoors? What would a visitor see if they came to visit you at work?</td>
</tr>
<tr>
<td>+ Image</td>
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<td>+ Image</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>TOOLS, EQUIPMENT, &amp; TECHNOLOGY</strong></th>
<th><strong>POSITIVES &amp; NEGATIVES</strong></th>
<th><strong>YOUR INTEREST</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>List at least 5 tools, pieces of equipment, or technology that is used as you perform the job</td>
<td>List at least 4 things that you would like about this career and 4 things that you would find challenging.</td>
<td>Answer the following questions: What interests you about this career? Do you think you have the aptitude (potential ability) for this career? Why or why not.</td>
</tr>
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<td>+ Image</td>
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</tbody>
</table>

**MY CHOSEN CAREER:** ________________________________
# Career Research Presentation Rubric

## Project Understanding

<table>
<thead>
<tr>
<th>SLIDE</th>
<th>BASIC (1)</th>
<th>SATISFACTORY (2)</th>
<th>EXCELLENT (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Responsibilities (5 duties + image)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Education and Training (+ image)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Skills Needed (5 skills + image)</td>
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</tr>
<tr>
<td>Pay, Benefits, Advancement (Beginning, average, and top pay, room for growth + image)</td>
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</tr>
<tr>
<td>Work Environment (Describe environment. What would a visitor see if they were to visit you at work?)</td>
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<tr>
<td>Tools, Equipment, Technology (5 tools + image)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Positives &amp; Negatives (4 likes &amp; 4 dislikes + image)</td>
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</tr>
<tr>
<td>Your Interest (What interests you about the career? Do you have the right aptitude for it?)</td>
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</tr>
<tr>
<td>Visual Appeal of Slides (Text is easy to read, colors enhance but do not distract, put effort into layout of images and text)</td>
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<td>Mechanics (Evidence of careful proofreading for grammar, spelling, punctuation, etc)</td>
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**TOTAL POINTS:** __________ / 30 points
**Job Responsibilities**

Art therapy is a therapeutic technique to enrich individuals lives. Some of the tasks a art therapist completes during a session include...

1. Therapist look at their clients resulting art work and help them comprehend their emotional conflicts.
2. Guide patients through the creative process.
3. Guide patients creatively encouraging them to engage with their feelings.
4. Guide patients to explore their thought process.
5. Help patients understand their emotions to help develop social skills, improve self-esteem, manage addictions and reduce anxiety.

**Education & Training**

- After earning a master's degree and Art therapy experience requirements, therapist are eligible to earn a credential to become a registered Art therapist.
- To be an art therapist you are required to be certified by the Art Therapy credentials Board (ATCB).

**Skills & Personality Traits Needed**

- Excellent communication
- Listening Skills
- Observational skills
- Imagination
- Emotional strength

**Pay, Benefits, & Advancement Opportunities**

- Low to Average Pay: $46,060
- Top Pay: $69,230
- You can make your own schedule

**Work Environment**

- As an art therapist your work environment is in medical settings such as community clinics, schools and psychiatric hospitals where they help people who may have physical or mental illness.
- On a daily basis id be sitting one on one with a patient or group supporting them with art and analyzing their art.
Tools, Equipment, and Technology

Art therapists usually use...
- Paint
- Canvas
- Clay
- Paint brushes
- Pastel pencils

Carer positives and challenges
- Creative space
- Meeting new people
- Helping individuals
- Making art
- Processing clients feelings
- Understanding clients feelings
- Clients rely on me
- Buying supplies

Interested?

What interest me about this career is the creativity that comes with it and overall helping others in a creative way. Although I think I don’t have the aptitude because it’s hard for me to process my feelings let alone someone else’s.
Deaf and Hearing Loss Writing Prompt

Share what you have learned about deaf culture, ASL, and your own hearing. Please respond in paragraph form. Use proper grammar, punctuation, and capitalization.

Paragraph 1: Explain what you learned about deaf culture. How do many deaf people feel about being deaf? Why do they prefer the term deaf to “hard of hearing” or “hearing impaired”? What is the difference between “Deaf” (capital D) and “deaf” (lowercase d)? Remember back to your deaf celebrity presentations and explain what you learned about deaf people and what they are able to accomplish.

Paragraph 2: Explain what you learned about American Sign Language. How is this language different than English? What did you learn about different types of sign language? What are the basic signs and phrases you learned and feel confident using now? What would you still like to learn to be able to say?

Paragraph 3: Reflect. If you were to lose your hearing, what would be the one sound in your life you would miss hearing the most? Explain why you would miss this sound. If someone in your family lost their hearing, what would you do to support and communicate with them? What advice would you give them about this change in their life?
Project Understanding: Little Buddy Heroes
Classroom/Buddy Observation Notes

Please reflect on your Monday visit with detail and description. Write in complete sentences.

1. Describe the learning that was happening. What different activities were students engaged in? Was the whole class working together, in small groups, or independently? What topics or skills were being taught or practiced?

______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________

2. What was your assignment? Describe what you did with the student(s) and how you think it went. Describe any successes or challenges you experienced.

______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________

3. What did you notice about the student(s) you were working with? What types of extra support did they need? Please give specific examples.

______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________

4. Describe the general tone of the class:

______________________________________________________________________________________

5. Give your personal thoughts about today’s visit:

______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________

6. Based on this week’s visit, how can you best answer our project’s Essential Question: How can we better understand and support children with differing abilities?

______________________________________________________________________________________
Project Understanding
Easter Seals October Lesson Plan

Name(s): EXAMPLE LESSON

Grade/Age of Students: Preschool

School: Easter Seals

What type of activity will you be doing? (Circle one or multiple if it fits multiple categories)
- Art Project
- Movement Activity/Game
- Reading Activity
- Worksheet

Which part of the Easter Seals curriculum for October does this game relate to? (Circle all)
- Fall
- Halloween
- Hibernation/Animals
- Forest
- Shapes
- Numbers

Theme: Fall → Apples / Trees

List the different activities involved in today’s lesson:
1) Introduction: Show apples, letter A, Tree movement activity
2) Apple seed Art on paper plates
3) Fall/Apple/Harvest Matching Game.

List every group member, what part of the lesson they will be in charge of creating and leading, and what materials they will need for their part (Note: up to 2 group members may be leading the same part of the activity):

1. Name: Person 1
   Activity: Introduction
   Materials Needed: 3 different colors/types of apples; A poster with the letter A & apples on it.

2. Name: Person 2
   Activity: Apple Seed Art
   Materials Needed: Paper plates (25), Red & Green Paint, black beans for the seeds

3. Name: Person 3
   Activity: Matching Game
   Materials Needed: 10 cards w/images of 1) Red apple, 2) Green apple, 3) Tree, 4) Fall leaf, 5) Apple pie
Project Understanding
Easter Seals October Lesson Plan

Name(s): EXAMPLE LESSON

Grade/Age of Students: PRE-K

School: Easter Seals

What type of activity will you be doing? (Circle one or multiple if it fits multiple categories)
Art Project  Movement Activity/Game  Reading Activity  Worksheet

Which part of the Easter Seals curriculum for October does this game relate to? (Circle all)
Fall  Halloween  Hibernation/Animals  Forest  Shapes  Numbers

Theme: Bears

List the different activities involved in today’s lesson:
1) Introduction: Stand on colored circles; Scarves movement
2) Teddy Bear Poem + movement
3) Teddy Bear puzzle

List every group member, what part of the lesson they will be in charge of creating and leading, and what materials they will need for their part (Note: up to 2 group members may be leading the same part of the activity):

1. Name: Person 1
   Activity: Explain instructions; Call out colors to get scarves; Lead in scarf activity
   Materials Needed: Scarves, colored circles, list of movements to instruct them to do

2. Name: Person 2
   Activity: Teddy Bear Poem + scarves
   Materials Needed: Poem, scarves, colored circles

3. Name: Person 3
   Activity: Teddy Bear Puzzle
   Materials Needed: 25 copies of Teddy Bear puzzle, crayons, scissors
Sample Preschool Art Lesson
Theme: Fall/Apples

Introduction
- Show different colors types of apples and ask questions
- Talk about the Letter A
- Ask students to stand up tall like a tree and hold up their branches. Sink their roots into the ground. Sway in the wind! Get the movement of a tree.
- Dismiss to tables

Art Project
- Paint paper plates red or green
- Glue black beans on to represent seeds
- Glue a real leaf on

Matching Apples
At another table, students can play a matching game.
Make a set of 10 cards with 2 of each:
- Red apple
- Green apple
- Fall leaf
- Apple Tree
- Apple Pie

Alternate Art Project
- Stamp apples on trees
**Project Understanding Final Exhibition**

**Abilities Awareness Event**

**WHAT:** We will host an “Abilities Awareness Event” with 6th and 7th graders. Each of you will lead one station in a small team where you will teach students about the disability and lead them through a hands-on activity to experience what it might be like to have this challenge.

**WHY:** This will be your “final exam” in exhibiting your understanding of our Project’s Essential Question: *How can we better understand and support students with differing abilities??* It will be a great chance to teach empathy to the middle schoolers and show how much you learned from working with your Little Buddies at Douglas Penfield and Easter Seals all year.

**WHEN:** Wednesday, January 23, during Periods 1-4

**WHERE:** Anacapa Middle School (walking field trip)

**IMPORTANT:** Your participation in this exhibition is essential. Participating in the Exhibition is worth .5 of your English credits for this quarter. There is no way to make this event up, so your attendance that day is crucial. Missing the exhibition will result in losing .5 credit.

**STEPS:**
1. Choose team and station
2. Create an informational poster for your station that follows the format below
3. Practice and prepare your station ahead of time! How will you explain it? Write notecards.

---

**LEARNING**

- Name of your Station/Challenge
- Give a clear and simple explanation
- Provide examples and visuals
- Simulation Purpose: _______
- Simulation Instructions: _______
- Write 1 sentence about what they are supposed to learn for “Purpose”
- Write simple bulleted instructions for activity

---
# SIMULATION GROUP ASSIGNMENTS FOR EXHIBITION

## LEARNING

**Activity:** Mirror Writing  
**Purpose:** To help you understand how confusing perceptual misinterpretation can be  
**Instructions:**
1. Look in the mirror, not at your paper.  
2. Write your name at the top of the paper.  
3. Trace between the lines of the shape.  
4. On the lines at the bottom, write this sentence: I am a student at Anacapa.  

**Group:**
1. ____________________ 2. ____________________ 3. ____________________ 4. ____________________ 5. ____________________

## SENSORY

**Activity:** Noise Distractions  
**Purpose:** To help you understand how hard it is for someone with sensory issues to filter out distractions and to focus on a task  
**Instructions:**
1. Put on the headphones attached to the distracting Youtube video  
2. Complete the worksheet within the given time.  

**Group:**
1. ____________________ 2. ____________________ 3. ____________________ 4. ____________________

## PHYSICAL FINE MOTOR

**Activity:** Non-Dominant Hand Cutting  
**Purpose:** To help you understand the challenges a person faces with limited use of the fine motor muscles in their hands and forearms  
**Instructions:**
1. Hold a pencil in your non-dominant hand.  
2. Draw a star and a circle. Write your name on each.  
3. Cut them out with your non-dominant hand.  
4. Do it again but this time with your dominant hand. Compare the difference.  

**Group:**
1. ____________________ 2. ____________________ 3. ____________________ 4. ____________________

## HEARING

**Activity:** ASL and Lip Reading  
**Purpose:** To help you understand the challenges of someone who has minimal hearing or complete hearing loss and one way they can communicate with others  
**Instructions:**
1. With the help of the student leaders, learn to spell your name in ASL.  
2. Then use the flashcards to practice reading each other's lips.  

**Group:**
1. ____________________ 2. ____________________ 3. ____________________ 4. ____________________ 5. ____________________ 6. ____________________

## VISION

**Activity:** Braille  
**Purpose:** To help you understand the challenges of a person with limited use of their eyes or impaired vision and one way they learn to read and communicate  
**Instructions:**
1. Look at the Braille cards provided and feel the dots that represent each letter.  
2. On the worksheet provided, spell your name in Braille using the dried peas.  
3. Glue down the peas and take your name with you.  

**Group:**
1. ____________________ 2. ____________________ 3. ____________________ 4. ____________________
What is Sensory Processing Disorder?
Sensory Processing Disorder is a condition in which the brain has trouble receiving and responding to information that comes in through the senses.

What are the signs?
The signs of having a sensory disability are when people have very sensitive affects to hearing, touching, tasting, or even smelling. People with this disability may be over- or under-responsive to things they have difficulties with. Kids with sensory disorders may scream when they hear a noise they don’t like.

Sensory Processing Disorder affects 5 to 16 percent of school-aged children.
Source: www.ucsf.edu

Autism
- Many people on the autism spectrum have difficulty processing everyday sensory information.
- If someone gets sensory overload, they tend to shut down.
- They have trouble with clumsiness. For example, throwing or catching a ball.
- It’s easier for them to focus on a detail rather than the whole object.

Sensitive Hearing
Kids with this disability may scream when they hear a noise they don’t like. Although, every kid reacts differently.

Sensory Tools
Kids use sensory tools to relieve stress and concentrate better. It distracts them from what noises are going on in the background.

How can we understand and support students with sensory disabilities?
- Keep track of the students’ behavior because knowing the patterns can help anticipate tougher situations.
- Provide safe and appropriate outlets
- Teach them what is safe to touch and have a “safe place” for them.
- Use your knowledge of how they react to make their environment to their comfort. If they don’t react well to noise try to limit loud noises and toys.
- Try to be patient and understand what they’re experiencing.

SIMULATION ACTIVITY

ACTIVITY: TOUCH - WEAR A PIECE OF SANDPAPER ON YOUR BACK WHILE CHOOSING AN OBJECT IN A BAG AND DESCRIBING WHAT IT IS AND FEELS LIKE

PURPOSE: TO HELP YOU UNDERSTAND HOW HARD IT IS FOR SOMEONE WITH SENSORY ISSUES TO FILTER OUT DISTRACTIONS AND TO FOCUS

INSTRUCTIONS:
1. Put a piece of sandpaper on back.
2. Choose an object from the sensory bag.
3. Describe what the object feels like and what you think it is.
The purpose of this reflection is to give meaning to the experiences you have had during this project, especially during your Monday visits with your Little Buddies. Through this 5 paragraph essay, you will consider what you learned, how the community was served by this, and how you can apply this experience to your future.

### Paragraph 1

**BACKGROUND ~ THE “WHAT” OF THE PROJECT**

- Describe the school where you served.
- Describe the school’s mission, goals, and population.
- How many students were in your class?
- What were your duties and responsibilities each visit?
- Describe your involvement with the kids with as much detail as possible. How “hands-on” were you in the classroom and how did it change possibly over the course of the semester?

### Paragraph 2

**PERSONAL LEARNING ~ THE “SO WHAT” OF THE PROJECT**

- What specific skills did you use during the project? Think back to everything you have done, including during your visits and on regular school days during the project. Consider the lessons you planned and taught, the research and presentations you conducted, and the final project of the Superhero posters.
  - Did you learn a new skill or clarify an interest?
- What have you learned about yourself as a person through this experience?
  - How can you apply this learning to your life in the future?
**Paragraph 3**

**COMMUNITY CONNECTION ~ THE “SO WHAT” OF THE PROJECT**

- What have you learned about the community who you served?
- What have you contributed to the school and the students who go there?
- Do you have a different picture of this community than you had before you began your project?
- Describe a person you’ve encountered in the community (a little buddy or teacher) who made a strong impression on you, positive or negative.
- Explain why your service was important to you and to the school and its students.
- How would you now answer the project’s essential question: How can we better understand and support children with differing abilities?

**Paragraph 4**

**REAL WORLD APPLICATION ~ THE “NOW WHAT” OF THE PROJECT**

- Pretend that you’re in an interview and your potential employer asks you what you learned during your Service-Learning/Project experience. How would you respond?

**Paragraph 5**

**PROJECT REFLECTION ~ THE “NOW WHAT” OF THE PROJECT**

- What were your thoughts about the final project of the Superhero posters? Do you think it was an appropriate final project for your Little Buddies? How did you feel giving it to them? Were you proud of your work? What were the reactions of the kids when they received them? Was it worth it in the end?
- Talk about at least one success and one disappointment/struggle you experienced during this project. What did you learn from each one?
- If you were in charge of the project, what would you do to improve it? Do you have any suggestions before we do this project again in the future.
- Complete this sentence: *Because of my experiences during this project, I am....*
# Presentation Rubric for PBL
(for grades 9-12; Common Core ELA aligned)

<table>
<thead>
<tr>
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<th>Below Standard</th>
<th>Approaching Standard</th>
<th>At Standard</th>
<th>Above Standard</th>
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</table>
| **Explanation of Ideas & Information** | - does not present information, arguments, ideas, or findings clearly, concisely, and logically; argument lacks supporting evidence; audience cannot follow the line of reasoning  
  - selects information, develops ideas and uses a style inappropriate to the purpose, task, and audience (may be too much or too little information, or the wrong approach)  
  - does not address alternative or opposing perspectives | - presents information, findings, arguments and supporting evidence in a way that is not always clear, concise, and logical; line of reasoning is sometimes hard to follow  
  - attempts to select information, develop ideas and use a style appropriate to the purpose, task, and audience but does not fully succeed  
  - attempts to address alternative or opposing perspectives, but not clearly or completely | - presents information, findings, arguments and supporting evidence clearly, concisely, and logically; audience can easily follow the line of reasoning (CC 9-12.SL.4)  
  - selects information, develops ideas and uses a style appropriate to the purpose, task, and audience (CC 9-12.SL.4)  
  - clearly and completely addresses alternative or opposing perspectives (CC 11-12.SL.4) |                             |
| **Organization**         | - does not meet requirements for what should be included in the presentation  
  - does not have an introduction and/or conclusion  
  - uses time poorly; the whole presentation, or a part of it, is too short or too long | - meets most requirements for what should be included in the presentation  
  - has an introduction and conclusion, but they are not clear or interesting  
  - generally times presentation well, but may spend too much or too little time on a topic, a/v aid, or idea | - meets all requirements for what should be included in the presentation  
  - has a clear and interesting introduction and conclusion  
  - organizes time well; no part of the presentation is too short or too long |                             |
| **Eyes & Body**          | - does not look at audience; reads notes or slides  
  - does not use gestures or movements  
  - lacks poise and confidence (fidgets, slouches, appears nervous)  
  - wears clothing inappropriate for the occasion | - makes infrequent eye contact; reads notes or slides most of the time  
  - uses a few gestures or movements but they do not look natural  
  - shows some poise and confidence, (only a little fidgeting or nervous movement)  
  - makes some attempt to wear clothing appropriate for the occasion | - keeps eye contact with audience most of the time; only glances at notes or slides  
  - uses natural gestures and movements  
  - looks poised and confident  
  - wears clothing appropriate for the occasion |                             |
| **Voice**                | - mumbles or speaks too quickly or slowly  
  - speaks too softly to be understood  
  - frequently uses “filler” words ("uh, um, so, and, like, etc.")  
  - does not adapt speech for the context and task | - speaks clearly most of the time  
  - speaks loudly enough for the audience to hear most of the time, but may speak in a monotone  
  - occasionally uses filler words  
  - attempts to adapt speech for the context and task but is unsuccessful or inconsistent | - speaks clearly; not too quickly or slowly  
  - speaks loudly enough for everyone to hear; changes tone and pace to maintain interest  
  - rarely uses filler words  
  - adapts speech for the context and task, demonstrating command of formal English when appropriate (CC 9-12.SL.6) |                             |
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<th>Approaching Standard</th>
<th>At Standard</th>
<th>Above Standard</th>
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<tr>
<td><strong>Presentation Aids</strong></td>
<td>◆ does not use audio/visual aids or media</td>
<td>◆ uses audio/visual aids or media, but they may sometimes distract from or not add to the presentation</td>
<td>◆ uses well-produced audio/visual aids or media to enhance understanding of findings, reasoning, and evidence, and to add interest (CC 9-12.SL.5)</td>
<td>✔️</td>
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<td>◆ attempts to use one or a few audio/visual aids or media, but they do not add to or may distract from the presentation</td>
<td>◆ sometimes has trouble bringing audio/visual aids or media smoothly into the presentation</td>
<td>◆ smoothly brings audio/visual aids or media into the presentation</td>
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<td><strong>Response to Audience Questions</strong></td>
<td>◆ does not address audience questions (goes off topic or misunderstands without seeking clarification)</td>
<td>◆ answers audience questions, but not always clearly or completely</td>
<td>◆ answers audience questions clearly and completely</td>
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<td>◆ seeks clarification, admits “I don't know” or explains how the answer might be found when unable to answer a question</td>
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<td><strong>Participation in Team Presentations</strong></td>
<td>◆ Not all team members participate; only one or two speak</td>
<td>◆ All team members participate, but not equally</td>
<td>◆ All team members participate for about the same length of time</td>
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<td>◆ All team members are able to answer questions about the topic as a whole, not just their part of it</td>
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For thousands of years, humans have looked up to the night sky with a curious and contemplative mind: How did we get here? Are we alone in this universe or could there be life on some unknown planet in a distant galaxy? Questions such as these spark curiosity and excitement among students as they think about their place in the universe and especially what lies beyond their own small celestial area code.
"Man must rise above the Earth—to the top of the atmosphere and beyond—for only thus will he fully understand the world in which he lives." - Socrates

For thousands of years, humans have looked up to the night sky with a curious and contemplative mind: How did we get here? Are we alone in this universe or could there be life on some unknown planet in a distant galaxy? Questions such as these spark curiosity and excitement among students as they think about their place in the universe and especially what lies beyond their own small celestial area code.

(Constellations and the Changing Night Sky Book Project) is innovative and creative in that it integrated science, art, and literacy. Students applied core science ideas while practicing research skills and informational writing. They learned the art of bookmaking and exercised creativity in completing two art pieces. Finally, students were given the opportunity to step into leadership roles where they led peers in completing both art projects, constructing books, and organizing information within the book.

This project was done in conjunction with the Celestial Systems Unit. As part of this unit, students completed STEMscopes’ 8th-grade Segment, Noncontact Forces Influence Phenomena, which included Earth, Sun, and Moon System and The Formation and Motion of Galaxies. Students applied their learning while compiling the research for their constellation book, recognizing how the forces and mechanisms they had studied in labs played out in the real world examples of star systems.

Best practices were utilized as the teacher modeled and provided exemplars of each section, including both research and writing sample. Additionally, scaffolds and other supports were provided along the way for students with special learning needs. Finally, student work was assessed using a rubric based on informational writing standards.

8th grade standards:

**English Language Arts**

- Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.  
  (CCSS.ELA-LITERACY.W.8.2)

**NGSS**

- **Disciplinary Core Idea- The Universe and its Stars**: Earth and its Solar System are part of the Milky Way Galaxy, which is 1 of the many galaxies in the universe. (MS-ESS-1-2)
- **Disciplinary Core Idea- Earth and the Solar System**: The Earth appears to have formed from a disc of dust and gas, drawn together by gravity (MS-ESS1-2)
Hook

We launched the project by modeling the changing night sky. In this opening activity, the 12 zodiac constellations were placed in a large circle with the sun in the middle. Each constellation was labeled with the month it appeared in the night sky and the constellations were arranged in order from January to December. Students acted as the “Earths” revolving around the teacher, the “Sun.” As they revolved around the “Sun”, students took notice of the constellations they could see from certain locations during the year, concluding that most constellations could only be seen at certain times of the year and that they appeared to rise and move across the sky over the course of the night.

Locating Constellation in the Night Sky

Students then chose a constellation to research. They began their study of that constellation by learning to identify and locate it in the night sky. In their research, they were given a notecatcher to guide them in finding relevant information. Students then used said information to describe how to locate the constellation in the night sky, including identifying and locating each star within the constellation. Finally, students created a star data chart in which they recorded, the star type, distance, magnitude, color and surface temperature for each star within the constellation.

History of Observation

Next students began delving into the history of observation. Again they used a notecatcher to guide research. They answered the who, when, where of the constellations discovery and noted additional recordings throughout history. Additionally, they search the globe to find how cultures other than Greeks and Romans viewed the same set of stars.

Star Classification

As the class researched stars and constellations, we began to notice that stars were often classified with a set of symbols that we did not understand. The star classification section of the book arose from the need to understand the data we were coming across in the research. For this section, students watched Episode #26 of PBS Crash Course in Astronomy video series. As they watched the video, students filled out a worksheet that guided them to the relevant information. They then formatted their completed worksheet into the “Frequently Asked Questions About Star Classification” portion of the book.

Myth: Next students researched the myths associated with their constellation and retold 1 myth of their choosing.
Deep Sky Objects

Student’s research culminated by locating 5 notable deep sky objects. This section stemmed from the work they had done in class in which they had to locate deep sky objects within the Milky Way Galaxy. Here much of the terminology and symbols they would come across in the deep sky research was introduced. While students had previously been given research supports, in this section they were asked to apply what they had learned and design their own notecatcher.

Art Pieces and Illustrations

Students created 2 art pieces for the books 1 was a galaxy-like painting of the night sky using acrylics with their constellation drawn over top. The second was a watercolor painting of the life-like constellation figure. Both of these projects were prepared and led by student teachers. Finally, students illustrated the History of Observation and Deep Sky Objects sections of the book.

Field trips and The Star Gazing Party

As part of their learning, the class visited the Griffith Observatory. The exhibits and planetarium show nicely reinforced the concepts previously learned. To culminate this project, we hosted a stargazing party and invited students’ families. Members of Santa Barbara Astronomical Unit led the stargazing and Julie Tumamait, a Chumash storyteller, told her culture’s stories of the night sky. Finally, students shared their finished books.
Constellations and the Changing Night Sky Book Project

Supplementary Materials

Assignment Sheet

Constellation Book Overview

For the final project of Case Study 2, you will research a constellation and create a book featuring the information you uncover. You will need to use printed and online resources to research the constellation. A variety of websites have been listed on the Stars & Constellations page of the Kid Zone at http://sciencespot.net/. Use the information on this page to help you as you research your constellation. I will also post additional resources on Google Classroom.

Most of your homework for the next 6-8 weeks will center around this project. Each week I will assign you a portion of the research. You will complete the assignment outside of class and bring your careful, completed work to class on Wednesdays when you will transfer the information into your book.

Information to be included in your Constellation’s book (work in progress- this list may grow)

Homework
Week 1
- Name and Nickname (if applicable)
- When it can be found in the night sky; where it is located; if it is used to “point” to other constellations and planets.
- A Diagram of your constellation.
- A list of the major stars in the constellation and facts about the stars found in the constellation

Week 2
- History- Who, when, where, and how was it founded? Has our understanding of it changed over the centuries? If so, how?

Week 3
- Star Classification

Week 4
- An Associated Myth- Greek and Roman Mythology or in other non-western cultures.

Week 5
- Deep Sky Objects- Choose 5 deep sky objects found within the constellation.
**In Class**  
Week 6-7  
- Bookmaking  
- Watercolor art piece  
- Acrylic Art Piece

---

**The Constellations**

| *Andromeda | Corvus | **Perseus** |
| **Aries** | Cygnus | **Pisces** |
| Auriga | **Draco** | Puppis |
| Aquarius | **Eridanus** | Sagittarius |
| Aquila | Gemini | Scorpius |
| Bootes | Grus | **Taurus** |
| Cancer | Hercules | ***Ursa Major*** |
| Canis Major | Hydra | ***Ursa Minor*** |
| Canis Minor | Leo | vela |
| *Capricornus* | Lepus | Virgo |
| ***Cassiopeia*** | Libra | |
| Centaurus | Lyra | |
| ***Cepheus*** | Ophiuchus | |
| **Cetus** | **Orion** | |
| Columbia | *Pegasus* | |

*Can be seen in November  
**Can be seen in December  
***Circumpolar stars- can be seen all year round
Section 1 - Locating Constellation in the Night Sky
Notecatcher

Student Name_________________________________________ Date______________

Constellation Book Homework 1

Constellation Name_____________________________________

Nickname______________________________________________

Create a line drawing of your constellation. Connect each star to show the pattern.

<table>
<thead>
<tr>
<th>Stars in My Constellation</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td></td>
<td></td>
<td>Distance from Earth</td>
<td>Magnitude (Brightness)</td>
</tr>
<tr>
<td>Type of Star</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance from Earth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnitude (Brightness)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color and Surface Temperature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# How to Locate My Star

<table>
<thead>
<tr>
<th>At what time of year can it be found in the sky?</th>
<th>Where is it located? At what time is it at the horizon? At what time is it at its highest point in the sky?</th>
<th>What planets does it point to?</th>
<th>What other stars or constellations does it point to?</th>
</tr>
</thead>
</table>

---

## Google Classroom Post

Please turn your note pages into the inbox and attach your written page to this assignment.

See classwork post below for how to write Section 1 page.

**Classwork:** 11/14/18: Creating the book page for Homework 1

- **PARA0GRAPH 1 AND 2:** Describe how to locate the constellation in the night sky. Include all information from the table "How to "Locate My Star" (Constellation)
- **PARA0GRAPH 3:** Introduce all the stars in the constellation. You do not need to include the data for each star.
- **DATA TABLE:** Create a 5x(number of primary stars) data table and transfer all the information from the "Stars in My Constellation" table into it.
- **TITLE:** the PAGE and the DATA TABLE
Section 2- History of Observation Notecatcher

Name_______________________________________ Date_____________________

Constellation Book
History of Observation

Who discovered or first recorded it?

When was it discovered?

Where was it discovered?

How has our understanding of the constellation changed over the centuries? What other recordings were made after the initial documentation?

[Type your notes here]

How are the stars within the constellation interpreted by other cultures? Do they see the same figure?

[Type your notes here]

Other interesting facts you might have found about the history of your constellation.

[Type your notes here]

Google Classroom Post

Transform your notes into writing

Please see sentence starters below to help you introduce each topic.

→Paragraph 1: Introduction - Who, what, when, how (if applicable) was the constellation discovered?
→Paragraph 2: Over the centuries our understanding of [nickname or name of constellation] has grown. First, [Describe the earliest sightings of the constellation. Who saw it? What important observations did they make?]. Then, [Describe the next sighting and any new information]. Next, .... Finally, ....
→Paragraph 3: Other cultures viewed this constellation differently...
→Paragraph 4: Other interesting facts I learned about [Name of constellation] are...
Section 3 Frequently Asked Questions About Star Classification

Frequently Asked Questions about Star Classification

What causes some stars to appear brighter than others?

What colors might stars appear in the sky?

What is spectrum?

What does stellar mean?

What color do hotter stars give off?
What color do cooler stars give off?

Cecelia Payne-Gaposchkin discovered what groundbreaking idea about a star’s spectra (color)?

According to Payne-Gaposchkin what are stars mostly made of?

Stars are arranged by their temperature and each is assigned a letter. What are those letters?

How are the letters arranged? (Hint: O type stars are the hottest, B type stars slightly cooler)

How might scientists remember the order of the letters since they are not in alphabetical order?

What classification is our Sun?

What do the numbers in the classification system mean, for instance, G2, G1, G3?

What is the brightest star in the sky? What is its classification?

Why do we see the sun as yellow even though it is actually white?

On what does a star’s luminosity depend?

What is the most important graph in astronomy?
Who originally made the graph?

What 2 variables are plotted on the graph?

How are stars arranged on the graph?

How are the stars grouped? (Hint: Main Sequence,...)

How do stars make energy?

Where do more massive stars fall on the HR Chart?

Where do less massive stars fall on the HR Chart?

Describe white dwarf stars.

How did they become white dwarfs?

Describe Red Giants.

Describe Super Red Giants.
Google Classroom Post

Watch the video and answer the questions on the assigned "Frequently Asked Questions" doc. This will be a page in your Constellation Book. Please answer in complete sentences and edit for spelling, punctuation, and grammar.

Stars: Crash Course Astronomy #26 | Season 1 Episode 26 | Crash Course Astronomy | PBS
https://www.pbs.org/video/crash-course-astronomy-26/

Frequently Asked Questions about Star Classification 2
Google Docs
Each student will get a copy

Section 4 Myth

Constellation Book - Homework 4
Myth

Research myths created about your constellation. Choose 1 to retell. Your retelling should read like a fairytale or myth not as a summary. Use this worksheet to help you to retell the myth and then revise it.

Myth
Country or Culture of Origin:

Name of the constellation in that culture:

1. Retell the myth in the box below. Make sure to start from the beginning and include all pertinent details.

2. Copy and paste the text from the previous box. Then read it aloud, add transitions, tighten up the wording to create flow. Use interesting adjectives and adverbs to "dress up" the language.

3. Copy and paste the text from the previous box in the box below. Read aloud again. This time pay attention to spelling, grammar, and punctuation. When you're finished paste the final copy in a google doc. This will serve as the Myth section for your book.
Section 5 Deep Sky Objects

Google Classroom Post

Describe at least 5 DEEP SKY OBJECTS that can be found in your constellation. (1 paragraph for each deep sky object- about 6 sentences each).

Create a notecatcher using previous models.

Include details that you feel are important for your readers to know in order to better understand each object.

When you use cataloguing notation for the first time say, "M-52," you MUST explain what the notation means. "M52 refers to the set of 110 space objects called 'Messier Objects' that were first recorded by French Astronomer, Charles Messier, in 1771."

Refer back to Part II notes in Explore 4 in "Formation and Motion of Galaxies" Scope to refresh your memory of-

Symbols and words you might encounter:
M-Messier, NG
New Generation Catalogue 1888
Index Catalogue- 1888-1907

Vocabulary:
Nebula
Supernovas

Book Illustrations

Search for pictures to illustrate subtopics. Photographs should be in COLOR. Please print at home if you have a color printer at home and bring to school to add to your book. Please let the teacher know if you do not have a color printer and she will arrange for color prints.

You will need color prints for the following:
(Remember your pictures should directly relate to the content and help your reader better understand the content).

History of Observation
Deep Sky Objects
Constellation Book Final Checklist

Cover: See Picture on GC for sample

- Title of Book
- Telescope View of Constellation
- By [Your Name]

Table of Contents (Not Numbered): See Picture on GC for sample

Pages Numbered 1-11

- 1- Locating Constellation in the Night Sky
- 2- Star Data Table
- 3- Illustrations for History of Observation
- 4- History of Observation Text
- 5- Art Piece
- 6- Art Piece
- 7- HR Diagram
- 8- Frequently Asked Questions
- 9- Illustrations for Deep Sky Objects
- 10- Deep Sky Objects Text
- 11- Myth

Inside Back Cover- Work Cited
Back Cover- (Optional) Picture of Author and Short Bio

Add a Clipboard Top to all sections with text that covers more than 1 page
Scaffolds to Support Students With Special Learning Needs

Writing Templates
Section 1

[TITLE]

[Name of your constellation] can be found in the night’s sky during…[months of the year]. As the night progresses, the constellation changes position. [Name of constellation] appears on the horizon at [time]. It continues to rise in the sky reaching its highest point at [time].

[Name of your constellation] is used to find other constellations and celestial bodies as well. Describe how it used to find other constellations or planets in the sky.

There are a few/several/many (choose 1) stars in [Name of your constellation]. Describe the stars in the constellation.

Stars in [Name of your constellation]

<table>
<thead>
<tr>
<th>Name of Star</th>
<th>Type of Star</th>
<th>Distance from Earth (in light years)</th>
<th>Magnitude</th>
<th>Color and Surface Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 2

[Title]

The constellation [name of constellation] was discovered by [name of person/people who discovered it] in [place of discovery] in [year or time period]. [Describe relevant details about its discovery]

While [name the founder] first documented the constellation, other astronomers also recorded their findings. The second known recording was made by... [Who, when, where documented? Describe relevant details] Then,...Finally...

While Greek astronomers saw this constellation as a [name the figure] not all cultures viewed it in the same way. The [name of culture] viewed these same stars as...[name the figure and add relevant details]. Alternatively, the [name the culture] perceived this constellation as [name the figure and add relevant details].

Other interesting facts I learned about this history of [name of constellation] are...

Section 3: Stop times for video

Frequently Asked Questions about Star Classification

What causes some stars to appear brighter than others? [32 sec]

What colors might stars appear in the sky? [43 sec]

What is spectrum? [1.07]

What does stellar mean? [1:20]

What color do hotter stars give off? 2:21

What color do cooler stars give off? 2:21

Cecelia Payne-Gaposchkin discovered what groundbreaking idea about a star’s spectra (color)? [2:33]

According to Payne-Gaposchkin what are stars mostly made of? [2:58]
<table>
<thead>
<tr>
<th>Learning Targets</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can introduce a topic clearly, previewing what is to follow.</td>
<td>Student clearly introduced each topic and included formatting (headings) when useful to aid comprehension.</td>
<td>The student introduced most topics and used formatting to aid comprehension.</td>
<td>Although the student may have used formatting, student inconsistently introduced individual topics.</td>
<td>The student incorrectly formatted their book and did not usually introduce individual topics.</td>
</tr>
<tr>
<td>I can develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.</td>
<td>Student used well-chosen facts, definitions, and concrete details to thoroughly develop each topic.</td>
<td>Student mostly used well-chosen facts, definition, and concrete details to develop.</td>
<td>While student used some well-chosen facts and concrete details, they often did not define new vocabulary and some ideas may have needed more support to be adequately developed.</td>
<td>Several ideas were only minimally supported by facts and some facts may have been off topic.</td>
</tr>
<tr>
<td>I can use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</td>
<td>Student's writing flowed from one idea to the next using well-chosen transitions that clearly showed when a new idea was introduced or when another fact built on an existing idea.</td>
<td>Student's writing mostly flowed from one idea to the next. However, there were occasional instances in which a transition was needed but not used.</td>
<td>Student's writing appeared choppy. Although transitions were occasionally used, there were several instances in which one was needed but not used.</td>
<td>Student's writing appeared disconnected. Student rarely if ever used transitions to connect ideas and create flow.</td>
</tr>
<tr>
<td>I can use relevant science vocabulary to inform or explain the topic.</td>
<td>Student used relevant vocabulary throughout their writing to inform and explain the topic.</td>
<td>Student mostly used relevant vocabulary throughout their writing to inform and explain the topic.</td>
<td>Student used some relevant vocabulary in their writing to inform and explain the topic.</td>
<td>Student rarely if ever used relevant vocabulary in their writing to inform and explain the topic.</td>
</tr>
<tr>
<td>I can establish and maintain a formal style.</td>
<td>Student established and maintained a formal style remaining in 3rd person throughout the writing piece.</td>
<td>Student mostly established and maintained a formal style, mostly remaining in 3rd person with the rare slip into 1st or 2nd person.</td>
<td>Student established a formal style but did not always maintain it, slipping into 1st or 2nd person in several instances.</td>
<td>Student rarely established a formal style and did not usually maintain it, often slipping into 1st or 2nd person throughout the writing piece.</td>
</tr>
</tbody>
</table>
Work Samples

Book 1
Book 2
Book 4 GATE Student
Student Teachers
Griffith Observatory
“Turn off the lights! You’re wasting energy,” “You can’t play on my phone, the energy is low.” “You have to eat your breakfast so you’ll have energy.” Children are constantly hearing messages about energy - its function, the need to be mindful of conserving it, the costs associated with it - but do they (or even most adults) really understand energy? What it is, what forms it takes, why it should be used responsibly, how it matters to the health of our planet?
The Energy Project
Unleashing the skills of a scientist to explore energy in its many forms.

“The unknown energy that can help humanity is that which lies hidden in the child.”
~Maria Montessori

“Turn off the lights! You’re wasting energy,” “You can’t play on my phone, the energy is low.” “You have to eat your breakfast so you’ll have energy.” Children are constantly hearing messages about energy - its function, the need to be mindful of conserving it, the costs associated with it - but do they (or even most adults) really understand energy? What it is, what forms it takes, why it should be used responsibly, how it matters to the health of our planet?

Our team of teachers believe that before we can expect children to protect and advocate for responsible energy usage and sourcing, they must first understand what energy is and how it works. As the future decision makers of our world, we created this project with the goal of empowering children with meaningful, memorable experiences and explorations that would give them a lasting understanding of energy which they could not just hold on to themselves, but share with others.

To guide our students through this discovery, we created our driving question, “How can we investigate like scientists to understand energy and show how it works?” We then organized our project into five case studies which would unpack our driving question into the tangible work and skills which would bring this learning to life.

Each case study was composed of:
1. Hands on Experiments
2. Teacher-made Google Slides
3. Interactive science journals
4. Informational texts in print form
5. Online articles and videos with interactive tasks via Google Classroom
6. Student Engaged Assessment via Learning Targets
7. Crew work (jigsaws, presentations)
8. Art

With our driving question in mind, teachers created learning targets based on the NGSS to guide our lesson creation, experiments, and assessments. An exit ticket was used to assess each student and students recorded their scores on their exit ticket tracker. Learning targets were posted daily and unpacked so students knew the purpose of each lesson and activity.
Launching Our Project

**Students discovered our project via a silent gallery walk.** Students were grouped in “crews” (their group throughout the next four months) to analyze images of scientists in different situations, with tools, and communicating in different ways. Crews realized all images pointed toward science (what area of science wouldn’t be revealed until the second case study).

**Case Study #1- How do scientists investigate and discover?**

The learning targets for this case study were: **I can define science and its three branches. I can describe what scientists do.**

Once students knew we would be diving into science, we needed to be sure they understood this field. After viewing a slideshow presentation with videos that focused on our learning targets, students participated in a back-to-back face-to-face protocol (**a check for understanding**). This protocol uses pairs of students. Once partnered, students stand back-to-back, and wait for a question such as, “What do scientists do when they investigate?” When “face-to-face” is announced, students share their ideas before moving on to a new partner.

This case study ended with an exit ticket based on our learning targets where students gave a self-assessment score from 0-5, and recorded their graded score on their tracker.

**Case Study #2- What is energy?- I can identify and describe at least 4 forms of energy.**

After practicing the skills of a scientist, students discovered our focus on energy via a gallery walk, but this time they could communicate their thinking like scientists. We filled our classrooms with photographs of energy in its many forms (a roller coaster’s improbable loops, a dam holding back rushing water) along with charts and newspaper headlines. Once students realized energy was our focus, we viewed a slideshow presentation and students participated in a check for understanding protocol.

One afternoon, our rooms were turned into **Discovery Labs** for students to explore! Each classroom asked for six parent volunteers to help facilitate six hands on centers on energy. We had Newton’s Cradles (momentum), a solar oven, Makey Makeys (electric boards that connect objects to computer programs), makeshift wind turbines (wind energy!), and more!

**Case Study #3- How can energy be stored as height?- I can differentiate between kinetic and potential energy. I can apply scientific ideas to design, test, and refine devices to demonstrate those ideas.**

After the Discovery Lab, enthusiasm for energy skyrocketed and propelled us into our remaining case studies. We studied the **science of roller coasters** (momentum, kinetic energy) and each crew created a bumper coaster from a foam track using tape and marbles. The room was filled with scientists designing, testing, and refining their devices!
After taking notes on a slideshow presentation, participating in a “stand up, hand up, pair up” protocol, students reflected on their learning from this case study as they put it all together with an exit ticket.

**Case Study #4- How is energy converted from one type to another?- I can explain how energy transfers from one place to another.**

Next, students experimented with light, heat, and color. Outside, we used different color papers and put an ice cube on each one. Students took notes and observed which ice cube melts the fastest and put colors in order of transference of the sun’s heat.

We explored electricity using Makey Makey electric boards and different objects (fruit, books, containers) as they grappled with which objects conduct electricity and why.

We culminated with a field trip to the Moxi Museum of Exploration and Innovation. Here students looked at the museum through the lens of energy transference, focusing this time especially on **renewable energy**. Students interacted with solar panels and hydropower (dams, Archimedes Screw) in a rooftop exhibit.

**Case Study #5- How do humans harness energy for everyday use?- I can distinguish between renewable and nonrenewable energy.**

With the momentum of the Moxi, we entered our final case study about which forms of energy are the most responsible to use. This discussion was framed with the book, *The Boy Who Harnessed the Wind*, about a boy named William Kamkwamba who born in Malawi. William built a windmill to bring to his village electricity and running water. We discussed how many more communities could get their electricity from clean wind instead of power plants.

Students then worked in crews to sort images of energy they were familiar with, but this time categorizing them into renewable and nonrenewable forms.

This case study ended with each student creating a Pledge to the Earth (with parent support) that would help reverse the effects of using non-renewable energy sources. Students recorded a video of themselves acting on their pledge and shared it with the class.

**Culmination**

To celebrate their learning, students ended this project with our classrooms coming together to host an Energy Museum. We recreated the Discovery Labs, but instead of parents running each of the centers, crews did. Instead of our 3rd and 4th graders rotating through, classrooms from 1st-6th grade did. To remind our community of the importance of responsible energy, our students performed a readers theater for *The Boy Who Harnessed the Wind*. 

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Assessments

**Formative** - Discussions, Google Slideshows, notecatchers, and checks for understanding provided informal assessments.

Exit tickets were a formal assessment used with a tracker so students could be **held accountable** for their learning and teachers could see which students needed additional support.

**Summative** - Students demonstrated their understanding of our driving question, "*How can we investigate like scientists to understand energy and show how it works?*" as they facilitated experiments and discussions during our Energy Museum.
The Energy Project- Supplemental Materials

Table of Contents:

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Case Study #4: How is energy converted from one time to another?.................................................29
Case Study #5: How do humans harness energy for everyday use? Making renewable choices .......40
Culmination: Student-Led School Wide Energy Museum........................................................................44
Long-Term Learning Target: I can identify and demonstrate different forms that energy can take.

California Common Core Standards Addressed

NGSS Grade 4

4-PS3-1 Use evidence to construct an explanation relating the speed of an object to the energy of that object.
4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.
4-PS3-3 Ask questions and predict outcomes about the changes in energy that occur when objects collide.
4-PS3-4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another
4-PS3-5 Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

Grade 3:

- **Speaking and Listening - Comprehension, Collaboration and Presentation of Knowledge and Ideas**

  CCSS.ELA-LITERACY.SL.3.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.

  CCSS.ELA-LITERACY.SL.3.3: Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

  CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

- **Reading: Informational Texts**

  CCSS.ELA-LITERACY.RI.3.4: Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

  CCSS.ELA-LITERACY.RI.3.5: Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.

- **Research to Build and Present Knowledge:**

  CCSS.ELA-LITERACY.W.3.8: Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
Grade 4

- **Speaking and Listening - Comprehension, Collaboration and Presentation of Knowledge and Ideas**

  CCSS.ELA-LITERACY.SL.4.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

  CCSS.ELA-LITERACY.SL.4.4: Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

- **Reading Informational Texts:**

  CCSS.ELA-LITERACY.RI.4.3: Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

  CCSS.ELA-LITERACY.RI.4.4: Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

- **Production and Distribution of Writing:**

  CCSS.ELA-LITERACY.W.4.4: Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above.)

- **Research to Build and Present Knowledge:**

  CCSS.ELA-LITERACY.W.4.8: Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
Case Study 1- How do scientists investigate and discover?

Learning Targets: I can define science and its three branches. I can describe what scientists do.

How do Scientists Investigate and Discover Gallery Walk
In the images below, students are trying to discover what science is and what scientists do:

Gallery Walk Picture Examples
Notecatcher students used during Gallery Walk

How do Scientists Investigate? Gallery Walk Notecatcher

Learning Target: I can describe how scientists investigate.

<table>
<thead>
<tr>
<th>How do scientists find the answers to their questions?</th>
<th>What are other words (synonyms) that mean “Investigate”?</th>
<th>Name some tools that scientists use. What could each tool be used for?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What might a scientist do with their body to show they are investigating?</td>
<td>How do scientists gather information about their subject?</td>
<td></td>
</tr>
<tr>
<td>How could a scientist show the data (information) they have collected to others?</td>
<td>Why would a scientist create models?</td>
<td>Why might scientists want to share what they learned from their investigations?</td>
</tr>
</tbody>
</table>
Video Notecatcher- Variables

Learning Target: I can identify different types of variables in an experiment.

<table>
<thead>
<tr>
<th>During the video:</th>
<th>After watching the video:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define each of these scientific words:</td>
<td>1) Turn and talk with a partner summarizing what happened in the video with the two plants.</td>
</tr>
<tr>
<td>1) Independent Variable: ____________________________</td>
<td>2) Share out as a class discussing what happened in the beginning, middle, and end (use today’s new words!).</td>
</tr>
<tr>
<td>2) Control Variable ____________________________</td>
<td>3) Summarize! Write a summary (at least 3 sentences) explaining how the 2 plants taught us about variables.</td>
</tr>
<tr>
<td>3) Dependent Variable ____________________________</td>
<td></td>
</tr>
<tr>
<td>Fill in the Blank</td>
<td></td>
</tr>
<tr>
<td>4) In order for an experiment to be fair ________________</td>
<td></td>
</tr>
<tr>
<td>5) How many independent variables should you have in an experiment? __________</td>
<td></td>
</tr>
</tbody>
</table>

Slides from slideshow: How do Scientists Investigate and Discover?

How do Scientists Investigate and Discover?

Case Study #1

Turn and Talk!

In 1 minute, talk to your neighbor about everything you know on the following questions:
1) What is a scientist?
2) What do scientists do?

Share Out!

Protocol: Cold Call. No Opt-Out

What is a scientist?
- [Blank]

What do scientists do?
- [Blank]

Fill in the blanks:

Science - the study of the natural world through observation and experiment.

Observe - to see, hear or notice.

Experiment - a procedure done to make a discovery, test a hypothesis, or demonstrate a known fact.
3 Main Branches of Science

- **Biological**- Botany, Ecology, Zoology, etc.
- **Physical**- Physics (motion), Chemistry (matter) **Astronomy**
- **Earth**- Geology, **Oceanography** Meteorology

---

**Flocabulary - What is Science?**

*And are ghosts really real?*

**Main Branches of Science Video**

*Stops at about 2 min*
Corresponding notecatcher to accompany slideshow:

Name: ___________________________ Date __________________

Case Study #1: How do Scientists Investigate & Discover?

Learning Targets:
I can define science.
I can describe what scientists do.

Write it:
- What is a scientist?
- What do scientists do?

Sketch It:

Science - the study of the ________________ through ________________ and ________________.

Observe - to ________________, ________________or ________________.

Experiment - a procedure done to make a ________________, test a hypothesis, or demonstrate a ________________.
Exit Ticket

Name: ___________________________  Date: _________________________

Exit Ticket

Learning Targets:

- I can define science.
- I can state the three main branches of science.

1) Science is ________________________________________________________

2) The three main branches of science are:
   - ______________________________________________________________
   - ______________________________________________________________
   - ______________________________________________________________
   - ______________________________________________________________

How well have you met the learning targets?

<table>
<thead>
<tr>
<th>Your Score</th>
<th>Teacher Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Exit Ticket

Learning Target: I can identify different types of variables.

Directions. Read over the following experiment.

Experiment: Does fertilizer help plants grow?
If I plant the same type of rose bush in soil with fertilizer, and in soil without fertilizer, which will be taller?

Materials:
2 rose bushes same size and type
2 pots same size and brand
Sunny spot
water
Fertilizer

Directions:
1) Plant one rose bush in each pot with same amount of soil.
2) Follow the directions on the fertilizer bottle to add the correct amount to one plant.
3) Measure the beginning height of both rose bushes.
4) Add 1 cup of water to each rose bush and put in a sunny location
5) Repeat these steps for 15 days.
6) Measure new height of rose bushes.

Looking at the materials list and the directions, please:
1) Put a STAR by any independent variable.
2) Underline any control variable.
3) Circle any dependent variable

Case Study #2- What is energy?- I can identify and describe at least 4 forms of energy.

Learning Targets
I can identify and give examples of when energy is potential or kinetic.
I can explain how energy moves from place to place.
I can apply scientific ideas to design, test, and refine devices to demonstrate those ideas.
Images from What is Energy? Gallery Walk

Crews participating in the Energy Gallery Walk

Crews participating in a crew building activity
**Notecatcher for What is Energy Gallery Walk:**

**Gallery Walk Notecatcher**

I can act like a scientist as I observe what I see in all 6 posters!

<table>
<thead>
<tr>
<th>I notice...</th>
<th>I wonder...</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tbody>
</table>

**What is Energy Slideshow:**

**Quick Write & Sketch!**

**What is Energy?**

**Case Study #2**

In 2 minutes, write everything you know on the following questions:

- What is energy?
- What does energy look like?
Share Out

What is energy?
- Has many forms
- It can cause crazy children
- Something that makes you move
- Energy can be mechanical, electrical and others such as weight for more speed
- What keeps us alive
- Lightning
- Energy is what powers things

What does energy look like?
- 

Fill in the blanks:

Energy - the ability to cause **motion** and **change**

Energy - is **massless**, but exists in interactions between objects.

Energy can **never** be created or **destroyed**; it can be **changed** into a different form, or transferred from one object to another

Think About it...

Discuss with a friend and write
Ideas in your **notecatcher**.

If energy is massless, how can we see it?

**Flocabulary - Energy**

"You can't destroy it, but you can move it.

You can't create it, but you can use it."
Forms of Energy
Energy is present when there are...

Moving Objects

Forms of Energy
Energy is present when there is...

Sound

Forms of Energy
Energy is present when there is...

Light
Forms of Energy
Energy is present when there is...

**Heat**

When is energy present?

- Sing the different places energy is present to your elbow partner.

Explanation Game
Where can you see the different forms of energy in this photo?
Discovery Lab!

Drums

Makey Makey

Windmills

Newton’s Cradle

iPad Videos

Solar Oven

What’s Next?!
Soon you will explore DISCOVERY STATIONS to see energy in action.

Notecatchers for Discovery Lab Centers
Windmill Note Catcher

Learning Target: I can work collaboratively with my crew to build a working windmill.

Congrats on completing your windmill!

Now let’s test it out! Put it in front of the fan and turn the fan to different speed settings. How/why does the fan make the cups move? Use the word “energy” in your answer. Discuss as a crew before you write your answer.

--------------------------------------------------
--------------------------------------------------

Next, watch the videos about wind energy and turbines (pronounced tur-bin in America and tur-bine in Britain).

A turbine is a windmill that produces electricity!

Write down 2 facts you learned after watching each video.

Video: Energy 101

• --------------------------------------------------

• --------------------------------------------------

Video: How does a turbine work?

• --------------------------------------------------

• --------------------------------------------------
Drum Note Catcher
By: _______________

Read this section with your group, before exploring the drums.

Drums have been around for thousands of years and are man’s oldest instrument. Here’s how they work: as the air molecules vibrate against each other, sound waves are formed and the sound of the drums can be heard.

The pitch of a drum depends on how tight its skin is. If the skin is tight, the drum makes a high note, if it has slack it makes a low note. The amount of air inside a drum also influences its pitch. The more air in a drum, the lower the note. The less air in a drum, the higher the note.

Volume depends on the size of the vibrations that are made. Hit a drum hard and this makes big vibrations and a loud sound. Hit a drum softly and the vibrations are smaller and the sound not as loud.

Before you explore the drums, be sure you are mindful not to break the balloon or “skin” so each group can use it.

1) Play the drops in different places and with different force.

2) Describe how the sound is different depending how and where it is played. Explain why that is.
MAKEY-MAKEY Note Catcher

1) Try and determine what materials plug into where. BE CAREFUL with the materials. Draw a quick picture of what goes where.

2) Try using the fruit in order to get the Makey-Makey to play the piano/the Makey-Makey to act as your keyboard keys. Then try using the other materials at the table to see if you can get them to help you play the piano. Which materials work and which do not? Make a list.

| Materials that work: | Materials that don’t work: |

3) Why do you think that you can get some materials to act as your keyboard keys and some not?

4) How do you think the Makey-Makey works?

5) What is the Makey-Makey’s source of energy?

The Makey-Makey’s source of energy is ____________________________.

Note catcher - Discovery Lab Videos
Learning Target: I can take notes to show my learning.

### Video #1 Crazy Seesaw Routine
- Energy can’t be __________________________ or __________________________
- It can be changed from __________________________
- Interesting fact learned from video: __________________________

### Video #2- High Road Low Road
1) Start video
2) PAUSE at 50 seconds
3) Answer: Which track will make the ball roll faster, the high road or the low road? Your hypothesis:
4) Press play and keep watching for the answer:
5) Write down at least 2 things learned:
   __________________________
   __________________________
Solar Oven Note Catcher

Why do you think the solar oven has tin foil on it?

What do you think would happen if we put the pizza lid down and didn't leave it open?

What is the solar oven's source of energy?

The solar oven's source of energy is...
Exit Ticket for Discovery Lab:

Learning Target: I can name and describe 4 types of energy.

Directions: There are many types of energy! Name at least 4 types and describe each one.

<table>
<thead>
<tr>
<th>Form of Energy</th>
<th>Describe this version of energy and any ways you know it is used.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Challenge!</td>
<td>Name 1 more!</td>
</tr>
</tbody>
</table>

Your Score: | Teacher Score:

Discovery Lab Photos!

<table>
<thead>
<tr>
<th>Video Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Videos with notecatcher</td>
</tr>
<tr>
<td>Building a Windmill</td>
</tr>
<tr>
<td>Exploring Drums</td>
</tr>
<tr>
<td>Solar Oven</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Windmills</td>
</tr>
</tbody>
</table>
Case Study #3: How is energy transferred from 1 place to another?

Learning Targets: I can explain how energy moves from place to place. I can apply scientific ideas to design, test, and refine devices to demonstrate those ideas.

Slideshow for Case Study 3

How is energy transferred from one place to another?

Quick Write & Sketch!

How can energy from one object cause another to move?

Share Out

How does energy from one object make another move?
- Newton’s cradle
- When a pushes someone else
- A bow and arrow
- Knocked down (dominoes)
- Kicking a soccer ball
- Seesaw
- Person -> Baseball bat -> Ball
Fill in the blanks:

Transfer - move from one place to another

Speed - the rate at which something is moving

Momentum - strength gained by motion

Accelerate - to move faster, to gain speed

Momentum - Strength Gained by Motion

Stored Energy & Kinetic Energy

Stored Energy is the same as Potential Energy.

It exists when an object has the possibility of moving, but is not moving yet.

TURN AND TALK TO A PARTNER: Where is the stored energy below?
Stored Energy & Kinetic Energy

When the Stored Energy is released it becomes Kinetic, or moving Energy

Playground Physics

How does the children's energy make things move on the playground?

Playground Crew Challenge!

How does the amount of energy you use affect speed on the playground?

- In your crews, choose an area of the playground to experiment with
- Use the behaviors of a scientist to investigate the question
- Explain and Demonstrate your thinking to present to the other crews
Notecatcher for Slideshow:

Case Study 3:
How is energy transferred from one place to another?

Write it:
- How can energy from one object cause another to move?

Sketch It:

Transfer - _______ from one place to another
Speed - the ____ at which something is _______
Momentum - _______ gained by _________
Accelerate - to move ________, to gain ______

Stored Energy vs. Kinetic Energy

Draw lines to connect each example with the type of energy it demonstrates.

Stored (Potential) Energy
Kinetic (Moving Energy)

Notecatcher for Playground Challenge:

Crew Challenge - Energy on the Playground

How does the amount of energy you use affect speed on the playground?

Collect and Record Observations (I notice… I wonder…)

Test it!

Questions we have (How does…? What would happen if…?)

Explain it in Pictures and Words
Exit Ticket for Energy Transferred:

Name: ____________  Date: ____________

Exit Ticket

😊 I can identify when energy is potential or kinetic.

What is the relationship between potential energy and kinetic energy? Explain like a scientist.


Your Score: ____________  Teacher Friend Score: ____________

Mystery Science Roller Coaster Experiment:
Why is the first hill of a roller coaster always the highest?

In this Mystery, students will explore how high the hills of a roller coaster can be. In the activity, students add hills to the Bumper Coaster they built in Mystery 2 and experiment to build a deeper understanding of hills and energy.

Pictures from Bumper Coaster:

<table>
<thead>
<tr>
<th>Crews building bumper coasters with foam shutes, tape, and marbles.</th>
<th>Students refining their bumper coaster</th>
</tr>
</thead>
</table>

View activity supplies
Email parents
Start Mystery
Case Study #4- How is energy converted from one type to another? I can explain how energy moves from one place to another.
I can explain how energy moves from place to place.
I can explain how the speed of an object relates to its energy.
I can describe the changes in energy that occur when objects collide.
I can apply scientific ideas to design, test, and refine devices to demonstrate those ideas.

Slideshow for How Energy is Converted

How is Energy Converted?
Light, Heat, Electricity

Case Study #4

Quick Write & Sketch!

In 2 minutes, write everything you know on the following:

- Light
- Heat
- Electricity

Share Out

What do we know about Light and Heat Energy?

What do we know about electricity?
**Fill in the blanks:**

Reflection is when light strikes a surface and **bounces off**.

Absorption is when light strikes a surface and its energy is transferred to the object's surface.

Translucent - allowing some light to pass through but not detailed images.

Transparent - allowing light to pass through, including detailed images.

Opaque - not able to be seen through.

**Vocabulary - Properties of Light**

"Have you ever looked up at the Sun in the Sky?"

"And wondered how its light got here-did it fly?"

**COMPLETE Color Heat and Absorption Lab - Part 1**

DANCE: Dance to the music and freeze when it stops. Tell the person closest to you your hypothesis!

What happens to light energy when it collides with an object?
What's Next?!  
Dig Deeper  
Research

Read Articles
- "What is Light?"
- "The Sun's Light"
- "The Importance of Light"
- "Light and Objects"

Use your note catcher to record the most important ideas

Color Heat and Absorption Lab

PART 2

Use your lab sheets to direct you through the rest of the lab

Electricity

Fill in the Blank
Energy Conversion is the process of turning one form of energy into another.

AC is the abbreviation for alternating current

DC is the abbreviation for direct current

AC/DC is a heavy metal band from the 80s.
Watch Bill Nye "Electricity" Video

Read Article:
"Electricity & Energy Circuits"

**MAKEY-MAKEY**

**Makey-Makey Quick Write**

1) Explain what you found necessary in the discovery labs (from the very beginning of our project) to get your makey-makey to work.

2) Did you realize that if certain things weren't connected to the Earth, they didn't work? Why?

**Fill-in the blanks:**

The Makey-Makey can be used as a circuit.

A circuit is a route that starts and finishes in the same place.

All circuits start open.

When you close a circuit, it sends a message to use it to.
EXAMPLE of a circuit:

On this keyboard, all circuits are open.

If you press the letter ‘G,’ you are closing a circuit. This sends a message to the computer to type the letter ‘G.’

How does the makey-makey circuit work?
Let’s explore!
Case Study 6:
How is energy converted from one type to another?

- What do you know about the following forms of energy?

<table>
<thead>
<tr>
<th>Light</th>
<th>Heat</th>
<th>Electricity</th>
</tr>
</thead>
</table>

Fill in the blank:
Light
Reflection is when__________strikes a surface

Transparent—allowing light to __________through.

Opaque—_______to be __________through.

Electricity

Energy Conversion is the process of turning _______of energy ____________.

AC is the abbreviation for ____________________________

DC is the abbreviation for ____________________________

AC/DC is a heavy metal band from the 70's.

Experiment with light, heat and color. (Page 1 of 3)
Color and Heat Absorption

GUIDING QUESTION:

WHAT HAPPENS WHEN LIGHT ENERGY COLLIDES WITH AN OBJECT?

Vocabulary:
light source
forms of energy
light absorption
light reflection

Materials:
1. 1 piece of 1’ x 1’ piece of cardboard
2. a timer
3. sunlight
4. 2 sets (1 set for pt. 1 and 1 set for pt. 2) - 6 pieces of construction paper - 3
   inch x 3 inch white, black, green, red, violet, yellow, and aluminum
5. small ice cubes (part 1 only)

EXPLORE PART 1

Predict:
which colors will cause the ice cubes to melt the quickest? Use crayons to record your
results on your lab sheet.

<table>
<thead>
<tr>
<th>Coolest</th>
<th></th>
<th></th>
<th></th>
<th>Warmest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflects the most light</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Crews analyzing ice cubes melting speed in relation to which color the ice cube is on.

Makey-Makey Circuit Challenge:

Simple Circuits Challenge

Simple Circuit: To complete a simple circuit, you must create a loop for the electrons to flow. Since all inputs on Makey Makey complete a circuit, you just need to figure out how to wire up an LED and build a simple switch. If you build a successful current, your light will shine on any key press! In this lab, you will create your own simple circuit with Makey Makey, building simple switches, and once you’ve mastered that, you’ll move on to parallel circuits.

SUPPLIES
- Alligator Clips
- Tinfoil
- Playdoh
- Popsicle Sticks
Makey-Makey Circuit Pictures- What objects conduct electricity and why?

Moxi Museum of Exploration and Innovation
<table>
<thead>
<tr>
<th>Students exploring <strong>hydropower!</strong></th>
<th>Students building and refining stomp rockets.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.jpg" alt="Image" /></td>
<td><img src="image2.jpg" alt="Image" /></td>
</tr>
<tr>
<td>Students exploring <strong>SOLAR POWER!</strong></td>
<td>Student testing their stomp rocket after refining her design.</td>
</tr>
<tr>
<td><img src="image3.jpg" alt="Image" /></td>
<td><img src="image4.jpg" alt="Image" /></td>
</tr>
<tr>
<td>Student exploring light and color!</td>
<td>Students creating paper parachutes that hover and hold a penny in a <strong>wind</strong> tunnel.</td>
</tr>
<tr>
<td><img src="image5.jpg" alt="Image" /></td>
<td><img src="image6.jpg" alt="Image" /></td>
</tr>
</tbody>
</table>
Students exploring heat and light!  
Students working on their parachute prototypes.
Case Study 5: How do humans harness energy for everyday use?

Learning Target: I can distinguish between renewable forms of energy.

Renewable or Non-Renewable?

Some sources of energy are renewable and some are not. Non-renewable sources are not environmentally friendly and are not replaced easily—we may run out of some of them in time. Identify which ones below are renewable and which ones are non-renewable.

Put an R for Renewable or an N for Non-Renewable under each of the energy sources below:

- Oceans—Tidal
- Geo-Thermal / Earth Heat
- Solar (Sun)
- Fuel
- Nuclear
- Wind
- Hydro
- Coal
Cut out each picture and sort into the two categories that you decide.
MY PLEDGE TO EARTH

DUE FRIDAY, MAY 25TH

Directions: After learning about renewable forms of energy, create a pledge to our community to make a positive impact on our Earth. Your pledge needs parental approval before submitting. This pledge should be acted upon in some way by June 7th.

Learning Target: I can generate different solutions to reverse the negative effects on Earth's landscape and/or atmosphere caused by using non-renewable energy sources.

I PLEDGE TO:


As ________________'s parent, I support them as they take action toward completing this pledge.

_________________________________________ Date________________

Parent Signature
Energy Project
Video/Photograph Guidelines

Video Upload due date: June 7th

Learning Target: I can generate different solutions to reverse the negative effects on Earth's landscape and/or atmosphere caused by using non-renewable energy sources.

This is an exciting time! For the final step in our Energy Project, you will record yourself showing progress toward your pledge to our Earth in a video (preferred) OR a series of photographs.

GUIDELINES FOR VIDEO
1) Speak to the audience in a clear voice before, while, and/or after you work toward your pledge describing what you’re doing and what the audience should notice.
2) You may wish to write down what you plan to say to your audience, but don’t read from your notes while filming.
3) Practice your video presentation with an adult before having an adult or friend film your video with a smartphone, ipad, video camera, etc.
4) Your video should be at least 1 minute in length and no more than 4 minutes.
5) After filming, you can upload your video to Youtube. (You will need to create a free Youtube account or use your Google Drive account.) Make sure you set the video as unlisted, so that anyone with the link can view, but no one can find it by searching.
6) Then, copy the link or create a hyperlink of your name and add it to our class page under the link on our website.

OR

GUIDELINES FOR PHOTOGRAPHS
1) Take at least 5 pictures showing the process of you working on your pledge.
2) Write a 1-2 sentence caption describing what’s happening in each photograph.
3) Attach your photographs to your Google Presentation from class. Save the images to your computer. Make a new slide click the “insert” tab and select “image”. Then select the place
Students preparing audience by frontloading academic words that would be used throughout the day.

Younger students exploring a center with energy transference. That tennis ball is about to go flying!
Collisions! Transference! Speed! Basically a really big game of pool!!!
# Readers Theater

## The Boy Who Harnessed the Wind

### Cast
- Narrators 1, 2, and 3
- William
- Mother
- Father
- 6 sisters
- Gilbert
- Geoffrey
- 6 townspeople
- 5 people: Crowd

### Set/Props
- Hoe
- Windmill: Frame of 3 poles and sticks, cardboard rotor looks like a tractor fan, and plastic blades attached to dowels
- Cardboard lightbulb
- Library shelf, textbook cover: Explaining Physics
- Seeds,
- Soccer ball

### Costumes
- Men: black dress pants, button up or polo shirt, flip-flops, shower sandals, or barefoot
- Women: Colorful Sarong, blouse, colorful headscarf, barefoot
- Boys: shorts, t-shirt barefoot
- Girls: Dress or skirt and t-shirt barefoot
Narrator #1: Our story begins hundreds of years ago when men and women had to rely on natural energy sources to do many of the jobs we take for granted today. Sunlight lit their homes, water was carried by hand to irrigate their fields, and fires were built from wood to cook their food. Since then humans have learned to control natural energy sources like sunlight, wind, and water, to do work and make life easier. Today, we can turn on a hose to water our gardens, turn a knob to bring fire to a stove that cooks our food, and flip a switch to light our homes. But does all the world live like this? No. Let us help you imagine a place where people live much like those men and women from so long ago.

Narrator #2: Meet William Kamkwamba. William is a 13 year old boy who lives in the remote village of Africa called Masitala, Mulawi. Masitala consists of about 10 houses each one made of mud bricks and painted white. Most of the roofs are made from long grasses that the villagers pick from the nearby swamps, or dambos, in their native language Chichewa. William lives with his parents and 6 sisters. The Kamkwamba’s home has a dirt floor. There is no electricity or running water. William’s mother and his sisters spend their days searching for wood to build fires for cooking or warm the water to take a bath. They walk miles from their home to the well to get water for drinking and for household chores. They spend hours grinding grain into flour that will be used to prepare their most beloved dish, nsima.

Narrator #3: William’s father is a maize farmer. He grows corn. His father prepares the family’s corn crops without the benefit of machines or even running water. He plants his fields by hand, dropping each seed in a hole that he has dug with his hoe. William’s father must rely on rain to water his crops. If the rains don’t come, the crops die in the fields. Everyday before school, William wakes before the sunrise and helps his father in the fields. He returns to the fields after school.

Narrator #1: Despite this, William is like many other boys in the world. He loves trucks, enjoys playing soccer, and spends his free time hanging out with his best friends Geoffrey and Gilbert.
William is kicking around his soccer ball in front of his hut when Gilbert and Geoffrey walk up. He picks up the ball and greets them.

William: Gilbert, Geoffrey bo!
(In Unison)
Gilbert/Geoffrey: Bo!
William: Gilbert, Sharp?
Gilbert: Sharp!

William: Sure?
Gilbert/Geoffrey: Sure!
William: Geoffrey, Fit?
Geoffrey: Fit!
William: Ehhh! Let's go to the trading center. I'll race you there.

[William throws down the ball and begins kicking it back and forth as they race off stage right]

Narrator #1 But most of all William loves to learn, especially when it comes to science. One day he and Gilbert are looking through books in the village library. William stumbles across a textbook titled *Explaining Physics*. There he learns that natural energy sources like sunlight, wind and water can be used to make electricity. He is especially curious about a machine called a windmill.

[William and Gilbert sit on the floor next to a bookshelf]
William and Gilbert sit on the floor next to a bookshelf]

William: (Reads from the book to himself) The people throughout Europe and the Middle East used windmills for pumping water and grinding grain. When many wind machines are grouped together on wind farms, they can generate as much electricity as a power plant.

Narrator #2: Then it snaps for William. All he needs is a windmill and he can have lights. Suddenly, he can picture himself lounging on his cot at night reading a book, listening to his radio. He imagines pumping water to his father’s fields and sees his mother and sisters retrieving water from a well that sits just outside of their door.

William: [Closes the book and turns to Gilbert] I am going to build a windmill. If someone else can build them in Europe and America, then I can build one here in Mulawi.

Gilbert: (smiles) When do we start?

William: We start today!

[William and Gilbert exit stage right]

Narrator #3: So William sets out to build his windmill, but he can’t go to a store to buy the parts for his project. He must use materials from the junkyard to make his machine.
He doesn't have a drill, or a screwdriver, or even a hammer. He has to be creative in building his windmill.

Narrator #1: He begins by scavenging through the local junkyard. He makes the blades of the windmill from white plastic pipes that he cuts with a handsaw and melts over fire to flatten them out. He attaches each blade to a bamboo stick which connects to the rotor that he has crafted from an old tractor fan.

Narrator #2: Now he has to figure out how to attach each of the pieces. Because William does not have a drill, he has to heat a nail over the fire and slowly melt a hole in the plastic. It takes him 3 hours to melt 6 holes, something that could be done in less than a minute with a power drill. When he begins fastening all the parts he discovers that he needs washers so the nuts and bolts will tighten. So he gathers bottle caps, hammers them flat with a rock and pokes a hole in each of them. He builds the motor of the windmill from an old bicycle frame and a small electric motor called a dynamo that is used to provide electricity for a bike headlight.

Narrator #3: Next, William makes the tower for his windmill. He and his friends, Geoffrey and Gilbert, go to the forest and find tall trees with sturdy trunks. They cut down 3, remove the bark and branches, and set the poles deep into the ground. They then then take smaller branches and nail them sideways like rungs of a ladder. When the tower is complete it stands 15 feet high.

Narrator #1: Finally, William has to figure out a way to lift his 90 pound windmill frame 15 feet in the air and attach it to the top of the tower. The only way is to hoist it up using a rope and pulley. He doesn’t have a rope, so he has to borrow his mother’s clothes line instead. It takes William and his two friends close to an hour to lift the windmill to the top, but they do it. Once the windmill is in place, people almost instantly begin to gather.

[Crowd gathers]
Gilbert: We have visitors.
Person #1: What is this thing?

Narrator #1: There is no word for windmill in William’s language, so he uses the phrase magesti a mphepo which means...
Gilbert: Electric Wind
Person #2: What does it do?

Gilbert: Generates electricity from the wind.
Person #1: That's impossible (starts laughing and turns to the crowd) It looks like a radio tower and what kind of silly toy is that?
Gilbert: Well, just stand back and watch.
Person #3: This is the misala from the scrapyard my children were talking about. Think about his poor mother!
Person #4: Let's see how crazy this boy really is.

Narrator #2: But just then a wind begins to blow. The windmill starts to turn and as a gust of wind flies through the village, the tower begins to rock and the blades begin to buzz like a set of angry propellers. William clutches the bulb that he has attached to the windmill, closes his eyes and waits for a miracle. Then it comes: a flicker, a flash, then a burst of bright, magnificent light. His heart nearly explodes.

Person #5: (shouting) Look he's made light. It's true what he said.
Person #6: Look how it spins.

Narrator #2: William throws his hands into the air and shouts with joy

William: Electric Wind! I told you I wasn’t mad!

Narrator #2: One by one people begin to cheer. They wave their hands and shout Wachatabwina! Well done! You did it William.

Narrator #2: One by one people begin to cheer. They wave their hands and shout Wachatabwina! Well done! You did it William.

Narrator #3: William's windmill went on to change the lives of his family and the people of Masitala. He brought electricity and running water to his family compound and later on to his whole village. Not long after the windmill was built an american journalist caught wind of this amazing young man and wrote a story about his miraculous accomplishment. Soon people from all over the world offered to pay for him to finish school. He ended up getting a full scholarship to the prestigious Dartmouth College from which he has since graduated. Today, William runs a non-profit organization called Moving Windmills which seeks to bring electricity and running water to all of rural Mulawi.
Photos of Our Readers Theater!
There’s never a dull moment teaching middle school. Now, with the amount of technology and entertainment that students have access to, teaching middle school is a job for a person willing to take risks and dive right into the adventure. With both feet. Blind folded. With concrete shoes on.

The latest middle school obsession is Fortnight. This game has taken over the minds and bodies (the dancing!) of children across the globe. Taking a page from the “if you can’t beat ‘em, join ‘em!” playbook, I joined them, by having them design a video game just like REAL gaming designers do- jumped in, both feet, blind folded, with concrete shoes!

After researching the game designing field, I discovered that gaming designers use a site called Story Board That to develop the story line for their gaming pitches they give to gaming executives. Fortunately, this site was available to everyone and after a few clicks of the mouse, I had my class registered and ready to go!
The Next Big Game

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The latest middle school obsession is Fortnight. This game has taken over the minds and bodies (the dancing!) of children across the globe. Taking a page from the “if you can’t beat ‘em, join ‘em!” playbook, I joined them, by having them design a video game just like REAL gaming designers do—jumped in, both feet, blind folded, with concrete shoes!

After researching the game designing field, I discovered that gaming designers use a site called Story Board That to develop the story line for their gaming pitches they give to gaming executives. Fortunately, this site was available to everyone and after a few clicks of the mouse, I had my class registered and ready to go!

The Project

At the time, we were about to embark on our latest adventure of ancient civilizations with a study of the Ancient Hebrews/Israelites—usually not a high interest civilization, especially after a unit on Egypt. I felt this gaming project might be the inspiration for my restless learners. Students would design, in teams of 5-6, a video game story board, with several levels, and the game must include and be based on the real-life history of the Hebrews. I presented the project as a potential video game design job for a game design team that they were part of. A gaming company had been contracted to develop a video game specific to the topic and were accepting submissions in the form of story boards. They would have to follow the protocol to be considered and then could pass on to the second interview phase where they would present. We began with an exploration of how video games are developed from idea inception to final product.

Students spent several days pouring over websites, books, history magazines, etc., to find the information needed to come up with gaming ideas. This made the students hyper-interested in the Hebrews. They worked on shared documents using Google to gather their information and gaming ideas. They then began to design their storyboards, after much debate, trying carefully to include all the characteristics they like in the video games they play. Finally, they divided up the duties and created their story boards using the Story Board That website.

When their submissions were accepted, they moved onto the presentation phase. All members of the team had to present at least one part of the game to the “investors and video game company.” After they were all presented the winning team was granted the “job” and celebrated with a pizza party, and of course, an A.

Evaluation and Assessment

From the beginning of this project, students were aware of the exact criteria for achieving the grade they wanted from the instructions and the rubric provided. I also evaluated student presentations and included a self-assessment questionnaire that students completed at the end of the project. They took the self-assessment questionnaire on google forms, and then I was able to generate data for myself to further evaluate how students worked together and how I could improve upon that for future class collaborative projects. Their comments and honesty were very eye opening and refreshing. They seemed to be empowered to reflect and make improvements for the future.

Outcome and Beyond

The students’ work definitely exceeded my expectations, largely due to the enthusiasm from my reluctant and struggling learners. Their hard work and focus on a topic that was completely new to them really made an impression on me as a teacher. I was reminded that although students may seem disinterested in school, they do have interests and I need to always keep that in mind when creating and designing lessons that students can relate to. I was also impressed by their understanding of the plight of the Hebrew people throughout ancient history.
They showed through the game story lines that they had learned about the Hebrews at a level far beyond memorizing for a test, in fact, in our last unit on India a few references were made to the Hebrews.

Many of the projects were good enough to be presented to real life video game companies, and I believe that some of my students have a future in this industry. I was also impressed by the universal buy in on the project. Everyone was able to play a role, whether it was fact and information gathering, game design, game play, using the Story Board That site, or presenting. The variety of learning domains really allowed all students to be successful and contribute in a valuable way. I have a selective mute in one of my classes and he THRIVED doing this project as the team member who created individual game characters based on the historical figures; he even squeaked out a few sentences for his part of the presentation, after much encouragement from his team.

Going forward, I do plan to use this project again, slightly tweaked to meet the needs of a different subject, English, as an end of the year novel project. Students will read a novel then turn the novel into an epic video game. This time the requirements will be a bit more rigorous, requiring teams to complete a written component in the form of a letter to the author explaining what they have done and asking permission to submit their game story board to a gaming company. This project could be used for virtually ANY subject, and for many grades, perhaps best for 4th through 12th, adjusting requirements to meet grade level standards and rigor.

My dream is to have the student have a real opportunity to present their projects to a gaming company- I think that would be an amazing experience for them. Until then, we will continue to create games and hopefully future designers!

**Standards:**

**RH 6.3-8**

**WHST 6.2, 6.5, 6.6, 6.7-9**

**RI 6.4, 6.9**

**SL 6.1abc, 6.2, 6.5, 6.6**

**History 6.3.2-5**

**Technology Used:**

*Chromebooks, Google Classroom, Internet searches, Story Board That site (design software), Chrome-casting (for presentations), Google docs (shared documents when planning).*
**Adventures of the Israelites (Basic Game Sequence)**

**By:** Esteban E

<table>
<thead>
<tr>
<th>Adventures of the Israelites</th>
<th>Choose Your Character</th>
<th>Siege of Israel (Level 1)</th>
<th>Hannukah (Level 2)</th>
<th>Migrating to Egypt (Level 3)</th>
<th>Escaping Egypt (Level 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td>This is the basic start-up menu for the game.</td>
<td>You can choose either Moses or Abraham.</td>
<td>Israel is attacked by the Romans and is taken over.</td>
<td>The Israelites celebrate Hanukkah.</td>
<td>The Israelites migrate to Egypt because they are desperate for food.</td>
<td>The Israelites decide to escape Egypt because they are enslaved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time to Scatter (Level 5)</th>
<th>Free Roam</th>
<th>Time to Return</th>
<th>Solomon's Temple</th>
<th>Torah Uncovered</th>
<th>Bad News for Every Good News</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
<td><img src="image11.png" alt="Image" /></td>
<td><img src="image12.png" alt="Image" /></td>
</tr>
<tr>
<td>Israelites scatter to different parts of Europe and Asia</td>
<td>You have been rewarded with fame and glory for completing the storyline.</td>
<td>Moses decides to return to Jerusalem.</td>
<td>Moses finds Solomon's Temple and decides to go searching inside.</td>
<td>While searching, Moses finds the Torah perfectly preserved.</td>
<td>Moses finds his home completely destroyed and in ruins.</td>
</tr>
</tbody>
</table>

Create your own at Storyboard That.
Adventures of the Israelites (Level 4)

By: Victoria Q

1. Introduction
   - Israelites in Egypt
   - God's plan to rescue Israelites

2. Finding Salt
   - God provides salt for life

3. Conquering Slaves
   - Israelites freed from slavery

4. On the Run
   - Israelites escape Egypt

5. Ten Plagues
   - Pharaoh refuses to let Israelites go
   - God sends plagues on Egypt

6. Death of the Firstborn
   - Firstborn killed in Egypt

7. A New Life Awaits
   - Israelites cross the Red Sea

8. The Reed Heart
   - Israelites gather reeds

9. The Reed Has Split
   - Reed splits to make a path

10. Make It Through
    - Israelites cross the reed path

11. Tony, Brother
    - Tony helps his brother cross

12. The Reed is Dead
    - Reed is gone

Create your own at Storyboard That
Adventures of the Israelites (Siege of Israel) Level 1

By: Rodrigo M

Siege of Israel:

More people are getting killed and you have to run away.

Run:

This is some simple game play of our game which you are not Moses or Abraham. You are multiple multiple experiences.

Save one person:

In this part, you have to choose to either save you son or your wife.

Run away or Stay and Fight:

Your son has died because you saved your wife.

You choose to run away because you are scared.

Create your own at Storyboard That
Adventures of the Israelites (Sketches)

By: Rodrigo M

Create your own at Storyboard That

Choose this character and you will lead the Israelites in a great adventure where you will have to make hard decisions which will change your story.
Adventures of the Israelities (Moses Sketch)

*By:* mariana M

He has a magical staff that turns into... a Snake!!!!!!!

He follows instructions of his god and is wise.

Moses has brown hair and tan skin. Magic staff he is leading the hebrews to Egypt for freedom and get captured so he leads them away from Egypt.

Create your own at Storyboard That
Ancient Hebrews I

By: Emma R

Level 1: Migrating to the Promised Land (Introduction)

Level 2: Moving to Egypt (Introduction)

Level 3: Enslaved by Egypt (Introduction)

Story Start: Moving to the Promise land

Lvl 2: Activity in Promise land

Lvl 3: Hanukkah

Lvl 4: Activity in Promise land

Lvl 5: Moving to Egypt

Lvl 6: Settling in Egypt

Lvl 7: Enslaved by Egypt

Lvl 8: Fight with Egypt

Lvl 9: Aftermath

Lvl 10: Going home (End)

Character Sheets

Level Sheets

Title Screen

Create your own at Storyboard That
Calling All Video Game Designers!

Games for Kids, Inc. has recently been hired to develop a video game that highlights the adventures and challenges faced by the Ancient Hebrews. We are accepting detailed story boards from now until the final date of December 14, 2018, (3:00pm PST).

Beginning on December 17th, design teams that meet all the necessary criteria, will be given a presentation opportunity to sell their ideas to our executive team.

The following are the criteria that are required as well as expectations to be considered for the design contract:

- Three story boards- One that describes the basic game sequence, two additional boards that describe two separate levels/story sequences.
- Two main character sketches.
- One or more of the portions of history of the ancient Hebrews.
- One or more battles faced by the ancient Hebrews
- One or more of the holidays celebrated by the Hebrews
- Two or more of the following people: Abraham, King David, Moses, King Solomon, Yahweh, The Promised Land*
- Two or more of the following terms: prophets, monotheism, First Temple, Hebrews, nomad, The Torah, Judaism, “ten lost tribes”*

*Story boards that have more than the required people and/or terms will receive greater consideration for the final design contract.

Please contact our director, Jennifer Dobbie, for more information or if you have any questions:

jdobbie@spunifiedsd.org
Hebrews Game Story Board
Self and Group Assessment

* Required

1. First Name *

2. Last Name *

3. Name of your Video Game Story Board *

The following questions are to be answered thinking of yourself and your work on the project.

4. I participated in group discussions. *
   
   Mark only one oval.
   
   ☐ Always
   ☐ Sometimes
   ☐ Never

5. Helped keep the group on task. *
   
   Mark only one oval.
   
   ☐ Always
   ☐ Sometimes
   ☐ Never

6. Contributed useful ideas. *
   
   Mark only one oval.
   
   ☐ Always
   ☐ Sometimes
   ☐ Never

7. Describe one contribution that you made to the group. *

8. Describe how you could improve your participation in group work in the future. *

Answer the following questions as you think about your group members.
9. **We finished our work on time.** *

   Mark only one oval.
   
   □ Yes
   □ No

10. **We encouraged each other and we cooperated with each other.** *

    Mark only one oval.
    
    □ Always
    □ Sometimes
    □ Never

11. **We used level 1-2 voices in our communications.** *

    Mark only one oval.
    
    □ Always
    □ Sometimes
    □ Never

12. **We shared our ideas, then listened and valued each other’s ideas.** *

    Mark only one oval.
    
    □ Always
    □ Sometimes
    □ Never

13. **We did best at...** *

14. **Next time we could improve at...** *

15. **The person/people in my group that did their best work...** *

16. **The person/people who did not do their best work...** *
# Hebrews Story Board That Presentation Rubric

<table>
<thead>
<tr>
<th>Category</th>
<th>Proficient</th>
<th>Emerging</th>
<th>Beginning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gaming Components</strong></td>
<td>- All gaming components are present&lt;br&gt;- Game flows well and is playable&lt;br&gt;- All required levels are present</td>
<td>- Most gaming components are present&lt;br&gt;- Game flows well and seems playable&lt;br&gt;- Most required levels are present</td>
<td>- Few gaming components are present&lt;br&gt;- Game does not flow well and is playable&lt;br&gt;- Not all required levels are present</td>
</tr>
<tr>
<td><strong>Historical Criteria</strong></td>
<td>- All historical components are present&lt;br&gt;- It is obvious that there is great understanding of the historical context&lt;br&gt;- Game is historically accurate</td>
<td>- Most historical components are present&lt;br&gt;- It is obvious that there is good understanding of the historical context&lt;br&gt;- Game is mostly historically accurate</td>
<td>- Few historical components are present&lt;br&gt;- It is obvious that there is little understanding of the historical context&lt;br&gt;- Game is not historically accurate</td>
</tr>
<tr>
<td><strong>Tech Components</strong></td>
<td>- All tech components are present&lt;br&gt;- Tech components enhance the gameplay</td>
<td>- Most tech components are present&lt;br&gt;- Tech components somewhat enhance the gameplay</td>
<td>- Few tech components are present&lt;br&gt;- Tech components do not enhance the gameplay</td>
</tr>
<tr>
<td><strong>Creativity</strong></td>
<td>- Much attention has been paid to details&lt;br&gt;- Characters have interesting roles in the game&lt;br&gt;- Game is not just a copy of another game, it's something new.</td>
<td>- Some attention has been paid to details&lt;br&gt;- Characters have interesting roles in the game&lt;br&gt;- Game is not just a copy of another game, it's mostly something new.</td>
<td>- Little attention has been paid to details&lt;br&gt;- Characters do not have interesting roles in the game&lt;br&gt;- Game is just a copy of another game.</td>
</tr>
</tbody>
</table>
Historical War

By: Brianna B.

Level 1: try to convince the king for a promise land...

Level 2: convince your people to go into war with the Egyptians

Level 3: make a plan to free the Hebrews

Level 4: free the Hebrews

Level 5: WAR

Level 6: convince them why you need a promise land

Download the game now

Create your own at Storyboard That
Historical war
By: Diana Z.

Moses taking the Hebrews to the promise land.

a couple days and miles later

Moses hits the ground with his stick and the sea starts to make a pathway

then the sea opens

Later Moses and the Hebrews are at the promise land

Create your own at Storyboard That
Historical war
By: Diana Z.

Moses is freeing then Hebrews

Later

Meanwhile

Later

Create your own at Storyboard That
Part I Time Travel to Hebrews:3

By: Veronica C

Image Attributions:
- Pyramid of Menkaure - A.M. Kuchling - (License Attribution)
# Student Presentation Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Knowledgeable of content and includes an engaging introduction, detailed body and memorable conclusion</td>
<td>Knowledgeable of content and includes an introduction, detailed body and conclusion</td>
<td>Somewhat knowledgeable of content and is missing an introduction, body or conclusion</td>
<td>Some content facts seem questionable and is missing an introduction, body and/ or conclusion</td>
</tr>
<tr>
<td>Eye Contact</td>
<td>Makes eye contact with everyone in the room</td>
<td>Makes eye contact with most everyone in the room</td>
<td>Makes eye contact with some of the people in the room</td>
<td>Makes very little or no eye contact with people in the room</td>
</tr>
<tr>
<td>Volume &amp; Clarity</td>
<td>The people in the back can hear the speech very clearly</td>
<td>The speaker mumbles a bit but people in the back can hear most of the speech</td>
<td>The speaker mumbles some and the people in the back can hear parts of the speech</td>
<td>The speaker consistently mumbles so that the people in the back cannot hear the speech</td>
</tr>
<tr>
<td>Flow</td>
<td>The speech flows nicely with no pauses or distracting verbal fillers</td>
<td>The speech includes 1-2 pauses and a few verbal fillers</td>
<td>The speech includes some distracting pauses and some verbal fillers</td>
<td>Speech includes several distracting pauses and many verbal fillers</td>
</tr>
<tr>
<td>Confidence &amp; Attitude</td>
<td>Speaks with enthusiasm, poise and assurance</td>
<td>Mostly speaks with enthusiasm, poise and assurance</td>
<td>Speaks with some enthusiasm, poise and assurance</td>
<td>Speaks with little or no enthusiasm, poise and/or assurance</td>
</tr>
<tr>
<td>Visual Aid</td>
<td>The visual aid complements the speech and is neat, colorful and creative</td>
<td>The visual aid connects to the speech and is mostly neat, colorful and creative</td>
<td>The visual aid somewhat connects to the speech and is somewhat neat, colorful and creative</td>
<td>The visual aid does not connect to the speech and is messy, lacks color and creativity</td>
</tr>
<tr>
<td>Time</td>
<td>Speech is given in the time allotted</td>
<td>Speech is 10% short or over the allotted time</td>
<td>Speech is 20% short or over the allotted time</td>
<td>Speech is 30% short or over the allotted time</td>
</tr>
</tbody>
</table>

Grade: ____________________________

Time Speech Began: ________________ Time Speech Ended: ________________
Self/Group Assessment Results

This is a sampling of some of the responses. They are very powerful and empowering!

The following questions are to be answered thinking of yourself and your work on the project.

**I participated in group discussions.**
- Always: 47.3%
- Sometimes: 30.5%
- Never: 22.2%

**Helped keep the group on task.**
- Always: 62.7%
- Sometimes: 32.7%
- Never: 4.6%

**Contributed useful ideas.**
- Always: 49.2%
- Sometimes: 38.5%
- Never: 12.3%
Describe one contribution that you made to the group.

59 responses

I tried to make Jesse contribute.

I made a level which you are not Moses or Abraham. You are just a random person escaping from Egypt.

I had made 4 levels and talked about what they were.

I thought of game plot.

I made some of the slides one being the sketches and I work with StoryBoard That in like 3rd grade so I know how the frames work so I put them beside stuff and things and made some ideas for the slides.

I wrote the script.

I found Israelites names and there meanings and selected two characters.

I made a sketch of Abraham.

I helped people come up with the name of the game.

Give Ideas

I helped dress the characters and come up with the ideas for the group game.

I made the sketch of Moses and made the level where the Israelites go to Egypt because of famine in Israel.

I created Levels 6, 8, 9, and 10

I gave some ideas for levels and I also did research.

One Contribution I did was making the first level.

I completed the basic storyline sequence storyboard. I also added some other features to the game. I’m talking about free roam.

I came up with the game idea.

I did Number 6 and did the characters names / intro.

A contribution that I made to the group is to add the ending. So that at the end the characters of all the group were at the end and all found each other.

I thought of and made the bonus level.

One idea we had was the game was going to be about escape.

I made the Hanukkah storyboard and gave the group some ideas. I also typed the doc on how the game works.

I helped my team to stay on task when we were doing our storyboard.
Describe how you could improve your participation in group work in the future.

59 responses

I feel like I can try to keep them more on task.
I could add more detail.
Maybe don't get off task and tell everyone to stay on task.
I could always keep the group on task.
I could do some more things but FERMIN didn't let me do a lot. -- But I'm fine with it.
Be more on task
by staying on task and not slacking/going off.
I can help more often.
I could help keep the group on task more
By not being disruptive
I could of helped more in the game by decorating.
I could plan ahead.

I could be more on task and try not to get frustrated with my team.
I could maybe talk just a little bit more.
by have a level 1 voice
Next time I can improve my participation is by maybe writing our notes on one piece of paper.
I can probably talk less.
I should pay more attention
To not scream.
I think I should talk more so that I can give more ideas.
I can improve is to not talk.
I could of maybe helped with more of the story boards.
I could probably giving more ideas of the game.
If I listen to open ideas, because I was always focused on my work and just mine.
Answer the following questions as you think about your group members.

**We finished our work on time.**
59 responses

- Yes: 57.6%
- No: 42.4%

**We encouraged each other and we cooperated with each other.**
59 responses

- Always: 35.6%
- Sometimes: 64.4%

**We used level 1-2 voices in our communications.**
59 responses

- Always: 33.9%
- Sometimes: 59.3%
- Never: 6.8%
We shared our ideas, then listened and valued each other’s ideas.
59 responses

![Pie chart showing the responses: Always (61%), Sometimes (27.3%), and Never (11.7%)]

We did best at...
59 responses

- Finding information
- Creating levels and contributing with each other.
- Communicating and level ideas
- On giving ideas to the team.
- Making a lot of cool ideas. In the last question I said sometimes because they didn’t listen to my ideas that much.
- Making levels
- Our storyboards
- At picking a name for our game
- Making the storyboards.
- Communicating
- We did are best at creating the game base.
- Assigning work and working together to try and finish the project.

- Making levels
- Timing
- Making the video game.
- Adding details and working together to get the project completed.
- Working in a group
- Making levels
- Arguing
- Giving ideas
- We did are best at the story and the scenes.
- We did our best at working together.
- We did best at working in our story board.
- Making the game.
The Escape of Ancient Egypt (level 1)

By: Josefina T

In the first level you are going to be a slave, then you will experience more events that happened in the past.

level 1

You are a slave that needs to escape.

You finish building the boat with the tools.

You have completed level 1
dick to continue >>

Next level

Create your own at Storyboard That
The Escape of Ancient Egypt (Level 2)

By: Andrea R

Welcome to Level 2!

In this level you will help the prisoners escape from the Egyptian prison...

Do we have a plan? ( Ultimately)

Great choice!

We have to be careful, the guards are everywhere!

You think they don't think...

That's a good idea!

Wait, it's not going to work...

Oh no, the guards are here!

We will need your help!

You have completed level 2!!

Congratulations! You have completed level 2!

Press NEXT to go to the next level!
The Escape of Ancient Egypt (level 5)

By: Kim M

Create your own at Storyboard That

Image Attributions:
Baltic sea (https://www.flickr.com/photos/33756616@N07/19042123197) - rrrtem - License: Attribution
Spanish Ocean (https://www.flickr.com/photos/12918224@N02/15945650521) - Liam_Ross - License: Attribution, Non Commercial

Image Attributions

- Baltic sea - rrrtem - (License Attribution)
- Spanish Ocean - Liam_Ross - (License Attribution, Non Commercial)
In this level you will become a Jewish girl and experience how she was treated by the Egyptians. You will also escape from slavery with Moses and Abraham.

"Thinking for an escape plan!"

Why do you bully me?!

Hi my name is Loony.

Hi we are Moses and Abraham!

Runnnnnn!!!!!!

You have found your friend

You have escaped! You have completed all the levels! You beat the game!!!
The Journey Back in Time (Sketches)

By: Jacob G.

Moses

Moses is the main character
This is the man that led the Hebrews out of Egypt to Canaan

Weapon: Staff
Power: Convincing people to follow him

Yahweh

Yahweh is the god that told Moses to led the Jewish to Canaan

Power: Being a God

Create your own at Storyboard That
Walk A Mile is a 5-6 week unit targeting Common Core Reading Standards for literature, Writing Standards for Argument and Explanatory, and various Research, Speaking and Listening Standards. The unit includes: guided imagery writing, debate, collaborative groups, artistic representations, Socratic Seminar, various fiction and non-fiction documents, web based presentations, and argument and explanatory writing. The anchor piece is Where the Red Fern Grows.
Lesson Plan Narrative

*Walk A Mile* is a 5-6 week unit targeting Common Core Reading Standards for literature, Writing Standards for Argument and Explanatory, and various Research, Speaking and Listening Standards. The unit includes: guided imagery writing, debate, collaborative groups, artistic representations, Socratic Seminar, various fiction and non-fiction documents, web based presentations, and argument and explanatory writing. The anchor piece is *Where the Red Fern Grows*.

Guiding Questions

How do we overcome obstacles?

What kinds of obstacles help build character?

How can families help one to overcome challenges?

The Unit

Stage 1 Puppy Love

In order to establish the background and setting for the novel, students are assigned mini research projects. Students will be placed in jigsaw groups to present their research on Glogster, a web based platform that allows students to include text, images, video and audio.

Once the reading begins, students complete comprehension questions to help them synthesize the novel. The thoughts and inferences from the questions are used for Socratic Seminar in class. The class is divided into two seminar groups. Students have the opportunity to be an observer and a participant. During seminar the teacher will start them with relevant questions, but the seminars are driven by student input. All students are able to share their insights in a manner that is not always available with large group discussion.

The unit continues to draw students in with a Guided Imagery Writing Activity. This activity is designed to help students understand Billy's determination and walk with him on his steps to maturity when he heads into the hills to retrieve his dogs. The students sample some of the foods Billy took with him on his journey: boiled eggs, salt pork and biscuits. The class also makes homemade butter, just as Billy's family would have made. Images of the Ozarks are displayed and some flowers and plants from the region are brought in. While sampling these foods, the students are led through a writing assignment as Billy. Through the use of Guided Imagery, students create a more original written journal entry as the protagonist, and are able to take a brief journey in Billy's shoes.

Stage 2 Different Perspectives

After the Background stage, students are more engaged in discussions about the themes and elements of the novel. One of the themes of the novel deals with the often difficult path to maturity. Billy's parents clearly represent two perspectives on his maturity and their occasional reluctance to recognize Billy's advancements. One issue for the Colman family is Billy's desire to hunt, his mother's resistance to this and his father's acceptance. To help students see that there are two sides to some issues, we have a class debate on hunting.

The class is divided into three groups of ten to fifteen students. The proposition team is in favor of hunting. They work collaboratively to provide three speeches supporting their claim and a poster in favor of hunting. Their claim is supported with evidence collected from research conducted during class time and at home. Students are given some research, the rest is discovered in groups. The opposition group must provide information, speeches and a poster opposed to hunting. The neutral party observes the debate and is charged with judging the debate and determining a winning side. Following the neutral party's decision, each member must submit a written argument explaining why they voted in favor of the proposition or opposition.
Debate is a very engaging activity that encourages higher levels of critical thinking. Because it offers a variety of activities, all students take part, and are in some way defending an argument, evaluating a variety of sources and analyzing opposing arguments. Once students understand the format of the debate activity, it can be applied to many different units.

Continuing to make connections to contemporary issues and language, students evaluate an article from AKC Magazine. The article, “Speaking Doglish”, by Boccone describes the development of idioms from the language of dog sport. Applying their understanding of idioms, each student selects an idiom from the novel and creates a visual with the literal interpretation of the idiom and a written translation.

To demonstrate understanding of the plot and symbolism, students are also assigned Symbol Summaries. They select a symbol to represent a portion of the novel and provide a quote as evidence to support the symbol selection.

Marching on to a climactic scene, students write a newspaper article to detail the incident. Students first read and evaluate sample articles from the local newspapers, and then work on their own articles documenting the details, citing evidence from the text and offering “eye witness” accounts.

Stage 3 Coming Home

Having finished the novel and the journey with Billy, students now complete a motivational edpuzzle video (interactive video, allows teachers to gather data) unit test and written evaluation of the theme.

Achievement and Assessment

The unit encourages the use of critical thinking skills as students define, analyze, and interpret various types of documents, articles, research materials, videos, and the novel. The unit addresses the needs of all learners because it encourages self-expression and generates creative thinking as well as objective analysis of information. Student success is measured through discussion, tests, completed projects, quizzes and essays.

I find this unit to be relevant for middle school students. They are in a transition phase of their own maturity and are able to relate to the protagonist and his various hurdles of adolescence. The unit is student – centered, instructional and extremely relevant. Many elements, such as guided imagery, debate, Socratic Seminar, edpuzzle, research presentations on glogster and writing activities utilize best practices and can be applied to a variety of units.

Connections to Curriculum

In addition to the focus on all Common Core Reading Standards for Literature, the unit includes the following standards:

Writing Standard 1, 2 & 5
Research 7, 8 & 9
Speaking and Listening 1 a-d, 2, &3
Presentation of Knowledge and Ideas 4 & 5
Language 1-6
Common Core Standards History
1, 3 & 4
Where The Red Fern Grows

Mini Research Projects

Directions: Each student will be assigned one of the following research topics. The topics will help
develop background on the novel we will be reading in class, Where the Red Fern Grows. Research your
assigned topic. Provide a 2 minute presentation with information on your topic on Glogster. You will
share your glog with your table group in class.

Topics

Ozark Mountains

Mountain Lions

Raccoons

Wilson Rawls

Hound dogs

Hunting dogs

Ozark flora and fauna

Hunting Statistics in United States

Fur Fashion Trends

Depression Era

1929 Stock Exchange Crash

Cherokee Indians

Oklahoma geography

Animal tracking
Raccoon Research Project Glog

https://edu.glogster.com/glog/raccoon/2wu6vt55ori
Raccoon

- Nocturnal
- Mammal
- Omnivore
- Found in wooded areas, suburban and some cities
- Can use paws like human hands
- Footprints look like a baby hand

https://video.nationalgeographic.com/video/00000144-0a43-d3cb-a95c-7b4fd3e80000

Made by Glogster.com
Nature
Where The Red Fern Grows  
Reading Questions Ch. 1-7  
Eng. 7 H

Chapter 1
1. What does the narrator witness? What does he do about it?  
2. What does Buddie cause the narrator to remember?  
3. What point of view does the writer use?  
4. The narrator says, “I tried to make myself believe that his home was in the Ozark Mountains…” Why do you think he might want to believe that?

Chapter 2
1. What are the symptoms of the narrator’s obsession with owning a puppy? How do his parents react?  
2. What does Billy catch with his traps?  
3. How does trapping affect Billy’s desire to own a hound? How does his obsession affect his health?  
4. At the end of the chapter, Billy is doing a lot of farm work and has new responsibilities. Do you think this will cure his dog-wanting? Why?

Chapter 3
1. What does Billy find at the fisherman’s camp? How does it alter his life?  
2. Describe Billy’s progress toward his goal. Who helps him achieve it?  
3. How would you describe Billy’s character? Give examples from the story.

Chapter 4
1. Describe Billy’s journey. Why does he make it?  
2. What are Billy’s impressions of town?  
3. What does Billy buy at the store?  
4. What happens at the school? What amuses the little old lady?  
5. Compare Billy’s feelings in the daylight in Tahlequah with his feelings alone in the mountains at night. How can you explain the differences?

Chapter 5
1. How does Billy behave at the depot?  
2. Describe the street fight. What starts and stops it?  
3. What happens between Billy and the marshal?  
4. Where do Billy and his pups spend the night? What frightening thing happens?  
5. What does Billy observe about his dogs?  
6. How does Billy feel when the mountain lion approaches?

Chapter 6
1. How does Billy name his dogs?  
2. How do the family members react to Billy’s homecoming and gifts?  
3. What advice does Pa give?
4. What is Grandpa’s scheme for catching a raccoon? What does Billy think of the plan?
5. How does Billy train his pups?
6. After having been to town, how does Billy feel about his home?

Chapter 7
1. How do Billy, his parents, and his dogs prepare for and feel about the first hunt?
2. Describe the atmosphere on the night of Billy’s first hunt.
3. Why do you suppose Billy refuses his father’s help?
4. How would you describe Billy’s relationship with his dogs?
Socratic Seminar

Rules and Goals for Seminar

- Focus on ideas and values in the text
- Keep an open mind
- Allow everyone to share their ideas
- Use classmates names
- Try to allow one person to speak at a time
- You do not need to raise your hand
- All opinions matter, and nobody is wrong
- Look at the speaker
- Speak voluntarily at least twice
- Make clear statements using academic language
- Refer to the text and other relevant sources
- Explore inferences
- Acknowledge changes in your perspective

Rules and Goals for Observer

- Do not speak
- Observe seminar
- Keep tally marks for speakers
- Write down thoughts and observations
### Socratic Seminar

**Observer Checklist**

**Your Name**

<table>
<thead>
<tr>
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Overall impression:

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### Socratic Seminar

**Observer Checklist**

**Your Name**

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Overall impression:
## Socratic Seminar Rubric

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<th>Observation Notes</th>
<th>Adherence to Rules</th>
<th>Seminar Prep</th>
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<td>some violations</td>
<td>only partial completion non- academic language</td>
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419
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<tr>
<td>1</td>
<td>no participation</td>
<td>incorrect tallies</td>
<td>violations</td>
</tr>
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</table>
Ozark Sampling Day
Guided Imagery Writing

In a flash I made up my mind. Very quietly I got up and put on my clothes. I sneaked into the kitchen and got one of Mama’s precious flour sacks. In it I put six eggs, some leftover cornbread, a little salt and a few matches. Next, I went to the smokehouse and cut off a piece of salt pork. I stopped at the barn and picked up a gunny sack. I put the flour inside the gunny sack. This I rolled up and crammed lengthwise in the bib of my overalls.

I was on my way, I was going after my dogs.

Tahlequah was a small country town with a population of about eight hundred. By the road, it was thirty-two mile away, but as the crow flies it was only twenty miles. I went as the crow flies, straight through the hills. (Rawls 32)

Imagine yourself in Billy’s situation. You have worked very hard to earn the money for two pups. Now the time has arrived for you to get your pups, but you have to travel alone, overnight, to retrieve the pups. The town of Tahlequah is 20 miles away. You have left your home with a few small provisions. Write a journal entry, as Billy, and tell me how you feel. What are you thinking about? Do you have any fears? What are your expectations? What are you most anxious about? What are you most excited about? Make sure you use imagery in your writing. You must include at least one simile and one metaphor. Underline each in your writing.
Ozark sampling day

Hardy Hudson
10/24/16
Period A

It's 10:00 PM I'm about to leave ma & pa I think that I'm most scared to leave my parents they're going to be worried sick about me. I left them a note it went exactly like this:

Dear ma & pa I am going to make a 20 mile trek to get my dogs I've armed myself with an axe if a coyote or any other animal. I've taken some eggs with me for food. I've brought some flint & stone for fire. I have purchased 2 hounds I've been saving up my money. Don't worry about me I'll be fine.

1:00 AM

I've traveled a total of 4 miles and I'm pretty tired already I think that I'm going to find somewhere to sleep out here I'm at the base of the mountain it's not too high probably about a 250 ft. climb up the mountain but don't worry there is a trail going up the mountain anyways I have to sleep.

2:00 PM

I'm almost there I've traveled a total of 17 miles but it has been a very long day of traveling and I need a nap.

6:00 PM

I am approaching the seller's house I am very nervous not nervous its a weird feeling it's like I have butterflies in my stomach as I see them I see probably 20 hounds all puppies they told me to pick any two that I want and I picked the two cutest they asked me where I came from I told them Tahlequah they said that's a long walk they asked me if I came alone I told them yes the had a car and they offered me a ride I was so grateful and responded, Yes, yes please it was about a 40 minute car ride and I made sure to thank them triple even double for what they had done. My parents were so happy to see me and I had two new friends. These dogs were like my shoes they went everywhere I did.
Journal entry, night one

I found a green field, and decided to rest. I am laying in the grass that's as soft as silk, looking up at the stars. Although I am really tired, I can't sleep because I am thinking about how much my life will change when I get my dogs. They will be little angels. As puppies they will be cute and playful, but when they get older, they will make my farm work so much easier. They will keep me company, and will be my very best friends. It was very easy to travel at night because there was nobody else around. I was too hyper to even think about sleeping. How long until I get my hounds? How much longer do I have to walk? I guess I'll just have to wait until tomorrow to find out.
Dear journal,

I am resting on a smooth, gray rock in the shade. I have run many miles in the dark, but I still have many more to go. I am headed to the city to get the beautiful coon-hounds I have only dreamed of having for so many years. I am not sure if I want to go into the city or not. What if the kids are mean? What if the marshal takes me away? What if they don’t give me the hounds? I have never been into the city before. I use to beg to go into the city when I was younger, but the more I think about it, the more unsure I feel.

I am eating combread that my mama made. The sweet smell reminds me of how she would take care of my wounds and sing me to sleep. I am also eating eggs that I brought from the chicken coop. The wonderful taste reminds me of the sounds and sights of the barnyard. I wonder if mama, papa, and the girls are worried. I should have left a note for them.

Now that I am well rested and fed, I can leave the gurgling stream and the refreshing shade for the rest of the long journey into town. I will try to be kind and well mannered to every person I meet. I can’t wait to see the adorable faces of the puppies and feel their smooth, slick fur on my hands. This journey is for them and all the work I did to get them.

Sincerely,

Billy
Where The Red Fern Grows

Hunting Debate

Proposition/In favor of hunting

Directions: Your group is responsible for providing an argument in favor of hunting. In order to do this, you must complete the following assignments:

1. Read the article, "Friends of the Hunted".
2. Discuss the article with your group.
3. Research other information in favor of hunting. Why did Billy and his family hunt?
4. Prepare an opening argument that states your opinion and at least three reasons for that opinion. This opening argument should be 3-5 minutes long.
5. Prepare a second speaker presentation. This speech will include some refutations to your opponent's points and will extend the arguments presented by your first speaker. This speech will last 3-5 minutes.
6. Prepare a closing argument that emphasizes your main points.
7. Prepare to answer questions from the neutral party.
8. Prepare a visual that represents your side.
9. Read the opponents article, "Why They Quit: Thoughts From Ex-Hunters". This may help shape your arguments.

Individual Roles

1. Opening Speaker: Helps prepare, and reads the opening argument, must also be prepared to help answer questions.
2. Opening Writer: writes the opening speech and is prepared to answer questions.
3. Second Speaker: helps prepare, and reads the second speech, must also be prepared to answer questions.
4. Second Writer: writes the second speech and is prepared to answer questions.
5. Rebuttal/Closing Speaker: helps write, and reads the closing argument, must also be prepared to answer questions.
6. Rebuttal/Closing Writer: writes the closing argument and must be prepared to answer questions.
7. Artist: creates the visual and must be prepared to answer the questions.
8. Historian: research other documents to help support argument.

Day of the Debate

On the day of the debate, you will sit with your side. All speakers will sit up front.
Where The Red Fern Grows

Hunting Debate

Opposition/ Opposed to hunting

Directions: Your group is responsible for providing an argument opposed to hunting. In order to do this, you must complete the following assignments:

1. Read the article, "Why They Quit: Thoughts From Ex-Hunters".
2. Discuss the article with your group.
3. Research other information opposed to hunting.
4. Prepare an opening argument that states your opinion and at least three reasons for that opinion. This opening argument should be 3-5 minutes long.
5. Prepare a second speaker presentation. This speech will include some refutations to your opponent’s points and will extend the arguments presented by your first speaker. This speech will last 3-5 minutes.
6. Prepare a closing argument that emphasizes your main points.
7. Prepare to answer questions from the neutral party.
8. Prepare a visual that represents your side.
9. Read the opponent’s article, “Friends of the Hunted”. This may help shape your arguments.

Individual Roles

1. Opening Speaker: Helps prepare, and reads the opening argument, must also be prepared to help answer questions.
2. Opening Writer: writes the opening speech and is prepared to answer questions.
3. Second Speaker: helps prepare, and reads the second speech, must also be prepared to answer questions.
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6. Rebuttal/Closing Writer: writes the closing argument and must be prepared to answer questions.
7. Artist: creates the visual and must be prepared to answer the questions.
8. Historian: research other documents to help support argument.

Day of the Debate

On the day of the debate, you will sit with your side. All speakers will sit up front.
Neutral Party

Directions: You are a member of the neutral party. It is your job to listen to the debate and make a decision about which side has the strongest argument. In order to do this you must complete the following assignments.

1. Prepare a two-sided poster. One side will have a visual that is in favor of hunting, and the other side will have a visual that is opposed to hunting. You will use this poster to show which side is presenting the most persuasive argument.
2. Prepare at least three questions for each side. These questions will be asked during the debate.
3. Be prepared to listen objectively, and weigh the arguments in order to make a decision.

Day of the Debate

Directions: You will sit in your designated area. You will display the appropriate side of your poster that suggests your feelings at the time. You will take notes on the arguments presented and you will ask your questions. Following the debate, you will be asked to make a decision, and support your opinion. After the decision is announced, you will write one paragraph explaining your reasoning and support it with evidence from the debate.
Where The Red Fern Grows

Hunting Debate

Group Grades

Team: ___________________________ Period: ____________

Each member of the proposition and opposition team will receive two grades. The first twenty points are given by the group. The second grade is determined by the teacher.

<table>
<thead>
<tr>
<th>Role/Student’s Name</th>
<th>Group Grade (20 points)</th>
<th>Teacher Grade (20 points)</th>
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Artist

Historian
After hearing both sides of the debate, I decided to vote for opposition because not of the facts they gave us, but the way they backed it up. To begin, one reason why I voted for opposition was the way the many facts they gave us how hunting hurts animals and the environment. For example, millions of animals are killed per year just by hunting. This can hurt heterotrophs (organisms that can’t make their own food) because they depend on other organisms for food, which can lead to endangered species and extinction. Another reason why I voted for opposition was the other ways you can make a living and help your family without hunting. For example, many people farm instead of hunt for a living, selling crops and having enough food for your family. This also helps because some animals can carry diseases, which is why some people do not hunt for these circumstances. My final reason why I voted for opposition was the way they explained how we as humans are messing up nature’s balance. For example, many people hunt as a sport, not for survival. This can mess up food chains and endangered animals. Just cause we did it in the past, doesn’t mean that this is our future, which is what the oppositional side clearly said, which was one strong reason why I voted for them. In conclusion, both sides did great, but I decided at the end of the day to vote for oppositional for their strong ideas and facts that truly stand out.
Hunting Debate

I voted for the opposition side of the debate because their speeches had more details and they made more sense than the proposition side. First of all, the opposition side stated that animals have their own cycle to keep the population at a normal amount and do not need humans help to keep it under control. Animals already hunt and kill each other to survive. When hunters kill animals, they are not keeping the population neutral, but they are making it lower and lower. Also, they made a good argument that it is cruel to let an animal be killed. It is unjust for people to put out traps and let animals just stay there stuck and suffering as they slowly die. Animals all have their own family and when they are taken away the family will mourn their unneeded death. In addition, hunting has many mishaps that end in injuries that are mostly fatal. As hunters pull the trigger at their animal target, the may stray somewhere else and hit someone. Almost a thousand hunters accidentally get killed by another hunter. In conclusion, the opposition has won the debate due to the fact that hunting is causing too many problems to animals and humans.
Proposition

Two teams discussed their points but it all came down to the neutral team to decide the winner, they would have to decide if they were against or for hunting. I voted for the proposition team because they had solid points about overpopulation of animals, food sources, and balance in the food chain. First, if we didn't kill animals there would be too many of them and they would overpopulate forests and even cities. For example, animals would be getting hit by cars all the time. Additionally, it would be harder to get food. In other words, if hunting was illegal people wouldn't be able to eat meat. Lastly, if hunting was outlawed that would mean that we would lose some resources. For instance, the people who hunt animals also use the skins, bones, and other parts of the animals. Clearly, voting in favor of hunting was the right choice.
Idioms “Speaking Doglish” by Bud Boccone

Read the following article from AKC Family Dog. After reading the article, answer the questions that follow on your own sheet of notebook paper.

Speaking Doglish
The bow-wow backstories of everyday expressions

Our occasional “Speaking Doglish” series explores the colorful words and phrases of the canine lexicon. In this installment, we take a look at six classic expressions that crossed over from the language of dog-sport enthusiasts to standard English.

barking up the wrong tree This expression, meaning to waste one’s efforts by pursuing the wrong thing or path, comes from raccoon hunting.

Settlers of the American wilderness depended on the raccoon as a steady source of meat, fur, and fat. Frontiersmen bred uniquely American hounds that specialized in tracking and treeing the nocturnal carnivore.

Coonhounds pursue their quarry through woods and swamps until the raccoon scoots up a tree. They then bay and bawl loudly to indicate their location. Sometimes, though, the wily raccoon fools its pursuers and the hounds literally bark up the wrong tree.

Today, the sport of coonhunting—with a protected pet raccoon in the role of the quarry—tests the working ability of the AKC coonhound breeds. And the expression barking up the wrong tree, part of the language since the early 1800s, is still going strong.

It’s a special favorite of journalists. Notables recently described in the media as “barking up the wrong tree” include the Coen brothers, football star Plaxico Burress, Taylor Swift, the Republican Party, the Democratic Party, and the entire nation of France. Reporters inevitably work the phrase into stories concerning dogs. A
scientist article about the origins of *Canis familiaris* begins, "Scientists may have been barking up the wrong tree by first suggesting that dogs originated in Asia or the Middle East."

Bird dog The AKC defines this as a "sporting dog bred and trained to hunt game birds." Such dogs, members of the AKC Sporting Group, showcase their skill in field trials and hunt tests. Since about 1930 the phrase has come to describe a person, like a detective or a baseball scout, whose job it is to find someone. Bird dog acquired additional meanings in different eras: chaperones at a school dance, military planes that spot targets, and someone who's out to steal your date. (Hey, bird dog, get away from my chick! Hey, bird dog, you better get away quick," sang the Everly Brothers.) The verb to bird-dog means to watch someone closely.

Bring to heel The AKC New Puppy Handbook defines the heel command as "the dog walking on your left side, his head even with your knees, while you hold the leash loosely." The command is a basic building block of competitive obedience training. Sometime in the late 1800s, the phrase bring to heel crossed into mainstream English to describe situations in which someone is forced to obey or submit. ("The players thought the coach was a pushover, but they were soon brought to heel.")

Run with the hare and hunt with the hounds This is a quaint way of saying that someone is trying to stay in favor with two opposing factions, or to take both sides at the same time. The expression dates way back to the 1600s—not surprising, since hunting prey animals with packs of fleet-footed hounds is perhaps the world's oldest dog sport. Today it is replicated in AKC lure coursing, in which hounds pursue a plastic lure.

That dog won't hunt. This Southern idiom from the late 1800s describes a dog unable to hunt for reasons of age, infirmity, or inclination. It entered the language as a way of saying an idea or excuse won't work. It was nearly extinct by the 1990s, when President Bill Clinton revived it. Clinton, a graduate of Yale Law School and a Rhodes scholar, shrewdly "humanized" himself with voters by peppering his speech with folksy expressions learned in his native Arkansas.

That dog will hunt. From a vintage issue of the *Wisconsin State Journal*: "Looks like this dog will hunt, to use Clinton's own phrase."

—Bud Boccone

Questions

Please record your answers on your own sheet of notebook paper.

1. According to Bud Boccone, where did the six expressions originate?
2. Which expression comes from raccoon hunting? What does it mean?
3. How has "bird dog" changed in different eras?
4. How was the expression "that dog won't hunt" brought back from near extinction?
Idioms in *Where The Red Fern Grows*

Wilson Rawls writes using a variety of figurative language. He uses similes, metaphors, personification and idioms. This rich language colors his novel and creates a better picture for his reader. Sometimes his similes and metaphors are woven into the idioms. Idioms are commonly used expressions that are not literally true. Like other figures of speech, idioms are often based on comparisons. Here is one example from the novel:

"Grandpa flew out of gear like an old Model-T Ford."

This idiom means that grandpa was very upset and was not behaving in a calm manner. The reader may picture an old car jumping around and making loud noises, but should not take the statement literally and think that grandpa runs on gears and is an old car.

Assignment:

Find another example of an idiom in the novel. On an 8X10 sheet of blank paper, create an image of the literal interpretation of the idiom. At the top of the image, document the quote and the page number. At the bottom of the image, write the actual translation of the image. What was Wilson Rawls really saying? Below the translation, indicate if this quote is also an example of a simile, metaphor or personification.

Example:

"Grandpa flew out of gear like an old Model-T Ford." P. 126

Grandpa was very upset and not behaving in a calm manner. This quote is an idiom and also a simile because Grandpa is being compared to a Model-T Ford.
Billy is expressing that he is extremely hungry. The only thing that could fulfill Billy’s needs is food. To put a couple meals under your belt means that he needs to gain plenty of nourishment into his body, thus helping his stomach. This quote is an example of an idiom, because it cannot be understood from the meanings of its separate words but tells a separate meaning of its own. Readers may picture exactly what is depicted above but this statement would not be understood if not thoroughly explained.

Wilson Rawls really means to say that he is very scared, so his heart is pounding very fast and hard. This quote is also a simile because it is a comparison using the words “like” or “as.”

“My arms felt like two dead grapevines, and my back felt like someone had pulled a plug out of one end of it and drained all the sap out.” - 75

Billy was very sick and tired and did not want to do all the shopping down the big wescanoe.

This quote is an idiom and also a simile because Billy is being compared to grapevines.
"I never saw hounds so small, but I guess they are hounds, at least they look like it." 

in Where The Red Fern Grows page 99, Billy notices, "There a good fifteen feet from the ground, with his hind legs planted firmly in the center of a big limb, and his front feet against the trunk of the tree, stood Old Dan, bawling for all he was worth."

I started talking to it. Thanks Old lantern, more than you I ever knew...

we chose the lantern to represent the symbol for on 10-41 because Billy really starts to believe that God is answering his prayers.
Red Fern Newspaper Article

Newspaper articles are important documents created to pass on information. Usually the content of the article is a recent event of some significance. The article could be about war, sports or politics. Sometimes reporters even report on deaths. All articles, however, answer six important questions: Who, what, when, where, why and how. These questions are answered with facts from the incident. Along with the facts, reporters will often create a somewhat subjective view of the incident. They may offer biased accounts or provide their own opinions by weighing one side more heavily.

Assignment: Design your own newspaper article based on the incident that led to Rubin Pritchard’s death. Make sure you cite evidence from the text to detail the events. Analyze the incident and draw some conclusions. Was it an accident? Could the death have been prevented? Should Rubin’s character be considered? Make sure you completely describe the entire incident and all who were involved. Your article must contain all of the following requirements.

1. Title – all articles need a title; something to catch the reader’s attention. The title may include some facts, but not all of the information, so the reader still has to read the article. The title should be brief.
2. Illustration – most articles include pictures, or illustrations. The picture could be of the scene of the event, the deceased, or of the others involved. You may draw your own picture, use the computer, or cut pictures from a magazine. Please make sure the illustration is in good taste.
3. Article – must fully detail the incident, and answer all six questions. You may format your article in columns like a regular newspaper, or design it in paragraphs like an essay. The article must still be organized and typed or in ink.
4. Name – please make sure you name is clearly marked on the article.
Around 1925, Billy was a young twelve year old boy. One day he was at his grandpa’s store when his neighbors, The Pritchard’s, came by. It was just two of the four liars and cheats, Rubin and Rainie. They are the kind that do exactly what they are not supposed to do. Raine was younger and wherever he went trouble followed. They both loved to make bets, so they came in for a bad reason. The first thing Raine and Rubin had to say was “we bet two dollars that your hounds can’t tree the ghost hound”. They made grandpa mad enough to commit to the bet. He handed Billy the money and reminded them to stay safe. The next night, Billy hiked up and met the Pritchard boys by the ghost coon at dark. The boys finally began their hunt. The boys explained to Billy how every time they free the ghost coon, it slips away and disappears. Several hours later, Billy’s hounds find the ghost coon and begin to chase after it. After a long chase by the river, they treed the coon in its “ghost tree”. An hour later, Billy gave up because the coon disappeared.

(Rubin Pritchard, age 16, found dead after a horrible hunting incident)

Immediately Billy figured out where the coon was and heard the coon crying. After hearing this, Billy decided that he didn’t want to kill the coon. Then Rubin started beating Billy up. Meanwhile, Old Blue, the Pritchard dog, came out. He showed a frightful look and terror in his eyes. Old Blue was a big thick hound. When Billy noticed he yelled to Rainie to keep Old Blue away from Dan or else they would fight. Instead Rainie let the dogs fight. Soon little Ann came in with the two small powerful hounds, Old Blue was dying. Next, Rubin let Billy go and darted into the fight with Billy’s axe. Billy was yelling “No. Don’t hurt my dogs”. Less than a minute later, Billy got up and found Rubin dead with the axe in his stomach. Rainie had fainted so Billy ran home to tell his parents after removing the axe from Rubin. Some say it wasn’t an accident and Rainie or someone else killed him. Others say it was grandpa’s fault for pushing Billy to go. A few even think that Rubin Committed suicide.
DEATH OF RUBIN PRITCHARD

By INSEL ALBRIGHT

"Accident or Intentional?"

After appearing in Billy's dream, who really happened to Rubin Pritchard? Billy had to deal with a situation that nobody could imagine. Rubin Pritchard was a teenager who lived in the Ozarks. He was known for his love of the outdoors and his knowledge of the woods.

One day, Rubin was out in the woods when he came across a clearing that he had never seen before. He decided to explore it and discovered a hidden cabin. Inside, he found a map that led to a secret treasure.

Rubin was excited about the prospect of finding a fortune, but he didn't realize that someone else was after the same treasure. Billy had heard rumors about a wealthy family who had been searching for the treasure for years. He knew that Rubin was the only one who could find it.

Billy decided to help Rubin, but he soon realized that the situation was more dangerous than he had thought. Rubin was a kind and gentle person, but he was also impulsive. Billy knew that Rubin could get into trouble if he didn't have his guidance.

As they searched for the treasure, Rubin and Billy became friends. Rubin learned about Billy's family and the problems they had been facing. Billy learned about Rubin's love for the outdoors and his knowledge of the woods.

Finally, they found the treasure, but it was too late. Rubin had been killed by a group of treasure hunters who had been following them. Billy was heartbroken, but he knew that Rubin would want him to carry on his legacy.

Billy decided to honor Rubin's memory and continue the search for the treasure. He knew that Rubin would be proud of him for his courage and determination.

Rubin Pritchard, killed by ax!

By MARK JONES

INforgettable Rubin Pritchard

When Billy realized that Rubin was dead, he was overwhelmed with grief. He knew that Rubin was his best friend and that he would miss him dearly. Billy knew that he had to do something to honor Rubin's memory.

Billy decided to write a story about Rubin's life. He knew that Rubin would want his legacy to live on. Billy spent months researching Rubin's life and writing the story. He knew that Rubin would be proud of him for his courage and determination.

Finally, Billy completed the story and submitted it to the local newspaper. The story was published and received a lot of attention. People were touched by Rubin's life and his courage.

When Rubin died, he left behind a legacy of bravery and courage. His legacy will live on through the story that Billy wrote. Billy knew that Rubin would be proud of him for his courage and determination.
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**Score/Level**
- **4**: The text includes engaging writing style, and the text is well-organized and coherent. The opinions are supported by relevant evidence and reasoning. The text is well-written and fluent.
- **3**: The text includes engaging writing style, but the opinions are not supported by relevant evidence and reasoning. The text is well-written and fluent, but could benefit from clearer organization.
- **2**: The text includes engaging writing style, but the opinions are not supported by relevant evidence and reasoning. The text is well-written but could benefit from clearer organization.
- **1**: The text does not include an engaging writing style. The opinions are not supported by relevant evidence and reasoning. The text is not well-written and fluent.
Where The Red Fern Grows
In Class Essay

Select one of the topics below and write an In Class Essay. You should start by brainstorming (clustering, notes, graphing…) and then move to writing your essay. Be sure to give yourself time to proofread and correct errors. Only write on one side of the paper.

1. Billy Colman is quoted as saying, "There is some good in all evil." How does this quote relate to significant events in the story, Where the Red Fern Grows? Select three events that support this statement and write an essay. Make sure the events directly relate to the statement.

2. Max Lerner wrote, "The turning point in the process of growing up is when you discover the core of strength within you that survives all hurt." Think about this quote and how it applies to Billy's character. At what point did he reach a turning point and discover a "core of strength"? Write an essay exploring Billy's maturing process and the incident that led to the discovery of his own "core of strength." Make sure that you have supported your points with examples from the novel.

3. According to Thomas Fuller, M.D., "Care and diligence bring luck." Do you think this quotation as appropriate for the events in the novel? What are some of the events that might be attributed to luck? Write an essay explaining whether you think these events were by chance, or were a result of care and diligence. Make sure that you have supported your position with examples from the novel.

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Videos

01:16 2 ⭐️
Copy of Greatest Motivational Video Ever (overcoming

01:16 2 ⭐️
Greatest Motivational Video Ever (overcoming obstacles)
Lesson Plan Title: Won't You Be My Neighbor? A Project to Renew and Connect Our Community
Lesson Plan Grade Levels: 1; 2; Pre-K
Lesson Plan Subject Areas: History/Social Sciences; Language Arts/Reading; Mathematics (Amgen Category); Theater; Visual Arts

We began this project with a Gallery Walk examining photos depicting different landmarks in Ventura. We presented the driving question: “How can I make my community a better place to live for all of its neighbors?” Within this project, the areas of focus would include: Reading, Writing, Listening and Speaking, Social Studies, Research and Art. It would also provide opportunities for students to develop empathy, focus on understanding others, building/creating community and helping others. We first focused on our school community with students becoming aware of the different roles of people on campus. This provided students with an opportunity to see that they are part of a school community and that there are many helpers here on campus. Students participated in field trips to a fire station, police station, post office, library, park, local small business’ such as a bike shop and small locally owned coffee shop. In preparation of going to the Post Office, students learned how to properly write a letter, the importance of addressing an envelope correctly, and saw behind the scenes of all the important people who help to make sure the mail delivery is successful. Students were also involved in creating an ABC Book of Ventura where they were assigned a letter of the alphabet and had to bring back a photo of themselves somewhere in our local community that started with their letter. Students were exposed to numerous fiction and nonfiction books as they learned about the various community helper roles.
Won’t You Be My Neighbor - A Project to Renew and Connect Our Community

We began this project with a Gallery Walk examining photos depicting different landmarks in Ventura. We presented the driving question: “How can I make my community a better place to live for all of its neighbors?” Within this project, the areas of focus would include: Reading, Writing, Listening and Speaking, Social Studies, Research and Art. It would also provide opportunities for students to develop empathy, focus on understanding others, building/creating community and helping others. We first focused on our school community with students becoming aware of the different roles of people on campus. This provided students with an opportunity to see that they are part of a school community and that there are many helpers here on campus. Students participated in field trips to a fire station, police station, post office, library, park, local small business’ such as a bike shop and small locally owned coffee shop. In preparation of going to the Post Office, students learned how to properly write a letter, the importance of addressing an envelope correctly, and saw behind the scenes of all the important people who help to make sure the mail delivery is successful. Students were also involved in creating an ABC Book of Ventura where they were assigned a letter of the alphabet and had to bring back a photo of themselves somewhere in our local community that started with their letter. Students were exposed to numerous fiction and nonfiction books as they learned about the various community helper roles.

During their first Case Study, students chose a community helper and became the expert in their field of study. They completed their own non-fiction book about their community helper and we held a museum where parents and other school community members were invited in as students came dressed as a community expert. Students took part in planning their attire for the museum, as well as being responsible for bringing any tools of their trade they would need to have on hand. Students shared the books they wrote as well as information about their community helper. Students were assessed through various rubrics. Their book had to include certain components such as information about the job their community member does, the tools they use, and their importance to the community. Students were also assessed on their museum preparation and completed a reflection page on their progress through the project.

During the middle of our project, the Thomas Fire and Montecito mudslide occurred, putting our project on hold. We were worried that our project had lost momentum. Instead, these horrible events turned the focus of our project into a real-life opportunity for students to experience how a community can come together for the greater good. Through social media, we connected with a kindergarten class from a school across the country who was involved in their own project on the impact of local fires on a community. A teacher reached out and asked to collaborate with our classes to gather information for their project. We began connecting with each other through Google Hangout and the kindergartners from the other school were able to ask questions of our students about their experience in the Thomas Fire. This proved to be a healing process for our students who had lived through the terrible fire in our local community. They learned that there were many community helpers who came to the rescue of so many people in our community and although the fire was a very scary event for so many of them, they learned there were so many helpers involved in keeping them safe. We soon became penpals with this class of students from across the country.
and began writing letters back and forth to one another. Students developed amazing relationships with their penpals.

Soon after the Thomas Fire, the Montecito mudslide occurred and the two schools reached out to help a family in need who had lost all of their belongings including their home and cars. The two schools worked together to gather items the family needed including books, toys, camping chairs, sleeping bags, etc. for the children. We also collected Target gift cards for the family to buy other necessary essentials. The family came to school and we had another Google Hangout so that the students from across the country could meet the family and see where all of their donations were going. We had a wonderful experience sharing community with one another. Besides meeting Reading, Writing, Listening and Speaking, and Social Studies Standards, the students gained first hand experience of what it means for a community to come together and rebuild.

The second case study of the project involved students working in Crews to construct a neighborhood community. After various city field trips and reading about community helpers, students had a better idea of important components to include in their neighborhood design. Each crew had to create a neighborhood name, design the neighborhood street layout and construct the buildings. Students used new and recycled materials. Each student made a house at home to put in their neighborhood. They knew the importance of having doctors, gas stations and grocery stores nearby as well as places to play such as parks. Students had a neighborhood showcase where families and other classes came to view their neighborhoods which were constructed on 4X4 wood pieces. Throughout this case study, students were frequently asked to complete a rubric that focused on how cooperative and efficient their Crew worked, as well as reflecting on their own level of involvement in their Crew.

We found this to be a very engaging project. Although we had not planned on the fire and mudslide occurring during our project, the real-life experience allowed the students to see that there are many community helpers. They were able to see that rebuilding our community was a healing process and most of all they learned that we can make our community a better place for all by working together.
Lesson Plan Title: Write a bill: How can we use clean, renewable energy to make the world a better place?
Lesson Plan Grade Levels: 8
Lesson Plan Subject Areas: History/Social Sciences

Each year, when studying the Constitution, we spend a great deal of time on the process of a bill becoming a law. To bring the process to life, we have students write a bill to make a positive change on our campus. We conduct a congressional simulation where committees review bills and either table them or pass them on to the next house. Any bills that make it through the final round get passed to our president (principal) where she considers what the students are requesting.
How a Bill Becomes a Law - Reusable, Clean Energy Initiatives

Each year, when studying the Constitution, we spend a great deal of time on the process of a bill becoming a law. To bring the process to life, we have students write a bill to make a positive change on our campus. We conduct a congressional simulation where committees review bills and either table them or pass them on to the next house. Any bills that make it through the final round get passed to our president (principal) where she considers what the students are requesting.

This year, I have a very high level class. I wanted to ramp up this activity and challenge them beyond the inner gates of our school. I introduced this class to the global, Sustainable Development Goals. We spent a lot of time discussing the goals, and determined goal seven to be of great importance to California. Goal seven focuses on affordable, clean energy. Their task was to write a bill that would incorporate clean, reusable energy to better California. In addition, they had to make a prototype of their solution using recycled materials in our Learning Center/Makerspace, and create a Google Slide Deck to present to the class.

Before students began they completed this bill hyperdoc, and then we reviewed the bill process together. We then discusses reusable energy. Students began this inquiry by reflecting on questions that were posted in the room. One asked about problems with current energy use, another was on ideas for using clean energy. They recorded their ideas on the posters. We then reviewed the project outline. While brainstorming for the project, students had to complete DeBono’s 6 Thinking Hats to address all aspects of their idea. They then had a class period to research, and a class period to draft their bills. When writing, we use the Claims-Evidence-Reason model that is required by NGSS to support both our science colleague, and to address our literacy standards of:

CCSS.ELA-LITERACY.RH.6-8.1
Cite specific textual evidence to support analysis of primary and secondary sources.

CCSS.ELA-LITERACY.RH.6-8.7
Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

CCSS.ELA-LITERACY.RH.6-8.3
Identify key steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).

CCSS.ELA-LITERACY.WHST.6-8.1.A
Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.

CCSS.ELA-LITERACY.WHST.6-8.1.B

Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.

CCSS.ELA-LITERACY.WHST.6-8.1.C

Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.WHST.6-8.1.D

Establish and maintain a formal style.

CCSS.ELA-LITERACY.WHST.6-8.1.E

Provide a concluding statement or section that follows from and supports the argument presented.

History 8.3 Students understand the foundation of the American political system and the ways in which citizens participate in it. 6. Describe the basic law-making process and how the Constitution provides numerous opportunities for citizens to participate in the political process and to monitor and influence government (e.g., function of elections, political parties, interest groups).

Their writing was graded with our department C-E-R rubric that we have used to norm our grading process to use for common formative assessment data in our professional learning community. Before I grade their writing, students are asked to use the rubric to grade themselves, revise and edit, and regrade until they are satisfied with the product they are turning in.

The following class, we conducted our congressional simulation and votes. The winning bill was sent to our representative, but we have yet to hear a response.

To conclude the project, we went to the makerspace to create our prototypes and presentations which were then presented to the class. The project was graded with the rubric that students were given at the beginning of the project. We also practiced creating effective slide decks with minimal words. The goal was approximately six words per slide with a greater visual representation. They practiced talking about their subject and not reading their slides. I also introduced them to Slide Carnival for engaging Google Slide templates.
All of these steps really brought the process to life, got the students to think about important, worldly situations, helped them become global citizens, and solidified the bill process in their knowledge banks.

**Timeframe:**

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| December 4    | 1      | **Presentations**  
|               |        | *How a Bill Becomes a Law Lesson*  
|               |        | *Intro Sustainable Goals*  
|               |        | Focus in on Goal 7. Review all parts and PDF  
|               |        | Review Types of Renewable energy - student search-  
|               |        | Project Outline  
|               |        | Brainstorm  
|               |        | HW: Research - Collect Sources |
| December 6    | 1      | **Warm-up**  
|               |        | Presentations  
|               |        | Review Bill information  
|               |        | Type Bill - due the end of class |
| December 10   | 1      | **Presentations**  
|               |        | Type Bills  
|               |        | Begin slide show and plan for model |
| December 12 - TCI Training | 1 | **Presentations**  
|               |        | Congress Simulation  
|               |        | -Make revisions to Bills  
|               |        | -Complete Self-Assessment & turn-in for final grade  
|               |        | Work on slide show and plan for creating a model - maker space next class to create prototype |
| December 14   | 1      | **Presentations**  
|               |        | Period 1 |
|               |        |               |
Warm-up Sign in to TCI
Makerspace

December 18
Period 1:
Makerspace
Present goal 7
quiz
TCI: 10 Preview/Review Bill of Rights

Beginning of Inquiry

Sample Bills

Makerspace
Presentations