8th Grade Independent Projects

Hello Students,

This resource packet includes multiple projects that you can work on independently at home. Each project can be completed over multiple days, and the projects can be completed in any order. These projects are standards-aligned and designed to meet the Remote Learning instructional minutes guidelines by grade band.

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### 8th Grade Literacy Project: Perspectives

<table>
<thead>
<tr>
<th>Estimated Time</th>
<th>Total Time 120-130 minutes</th>
</tr>
</thead>
</table>
| **Grade Level Standard(s)** | **RL.8.2** Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.  
**RL.8.6** Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.  
**W.8.4** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. |
| **Caregiver Support Option** | Caregivers can read and discuss the students’ writing and discuss the writing prompts. |
| **Materials Needed** | Lined paper  
Pen/pencil |
| **Question to Explore** | How does meaning change when perspective changes?  
How can considering other perspectives help me understand myself, others, and the world? |
| **Student Directions** | In this task, you think about the importance of perspective. Then, you will brainstorm or draft a piece of writing. Finally, you will choose to illustrate your draft or keep writing - this time about your experiences. |

### Activity 1: Understanding Perspective

A. When writers begin to write, they make a decision about **point of view**. They decide if they are going to write in first, second, or third person. Using a first person (“I”) **perspective** is just as important as writing in any other perspective. Perspective is how someone sees a situation, their feelings about a situation, and their opinions of a situation. When we read, we see the story from the perspective of the narrator, which is whoever is telling the story at a particular point. Sometimes the narrator is a character in the story. Some stories have more than one narrator, so we get different perspectives on the story. As in life, there are always at least two sides to every story, which is why people go to court and why teachers ask each student involved in a disagreement to tell his or her side of a story. We might also ask, what in the narrator’s culture and experience help shape and inform how they tell the story?
With these ideas in mind, on notebook paper explain how the perspectives might be different in the examples below. Use the sentence frame below if it is helpful.

A teacher/mouse/brother might think...while a student/human/sister might think...

- A teacher and a student
- A mouse and a human
- A brother and a sister

B. Choose one of the examples above and write a few sentences from each of the two perspectives. In other words, step into the shoes of the speaker and write their thoughts. For example, if a human and a mouse are both in a kitchen, what would each think, feel and do? Use first person and write from each perspective.

Activity 2: Understanding Perspective

A. Remember: When we read a story written in first person

- we see it from the perspective of the narrator, who may also be a character in the story.
- Different characters in the story have different perspectives on the events.
- Awareness of different perspectives is a type of critical thinking.

One unique way to explore perspective is to write from the perspective of an inanimate object. That means a thing that is not alive, such as a rock or a book. You will now pick an object and write--"A Day in the Life of a ______"--a story from the object’s perspective. You can choose anything non-living. It might be fun to write from the perspective of a chair, a phone, a washing machine at the laundromat, gym shoe, or a tree. It is your choice! Start with a brainstorm by answering these questions on notebook paper:

- What is the object?
- Where is this object found?
- When is this object used?
- Who uses this object?
- What are some of the things this object observes during the day?
- What are some of the things this object does during the day?
- How does the object feel about where it is?
- How does the object feel about who uses it?
- If the object isn’t used, how might that make it feel?

B. Now that you have thought and written about the object, you will write from its perspective. Write your draft, aiming for at least a page. Your writing should:

- Use first person
- Be from the perspective of the object
- Introduce who the object is
- Tell a story about it from the start of the day until the end
- Use specific details and examples to show what it does, who it sees, what it thinks, how it feels.
Activity 3: Building on Perspective

A. You have now explored the importance of perspective and written a draft from a perspective different from your own. For this activity, you can complete either or both of the options you previously worked on. The goal is to build on your writing!

- Option A: Create an illustration from the perspective of the object you wrote about in Activity 2. Try to capture the perspective through your drawing. Be sure to depict your object’s perspective, emotions, thoughts, etc.
- Option B: try to write every day or once a week. Writing is a great way to process feelings and ideas, express yourself, and reflect. You can write from your perspective or the perspective of an innate object. You could also create a character and write from their perspective.

Cross-content connections

Students can choose an object that connects to other content areas and narrate a concept or story from that object’s perspective.
8th Grade Math Project: Rotate and Tessellate

<table>
<thead>
<tr>
<th>Estimated Time</th>
<th>120-130 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Level Standard(s)</td>
<td>8.G.A: Understand congruence and similarity using physical models, transparencies, or geometry software.</td>
</tr>
<tr>
<td>Caregiver Support Option</td>
<td>Create designs with your student; be available to discuss observations about shapes and designs</td>
</tr>
<tr>
<td>Materials Needed</td>
<td>White paper, pencil, markers, one 3x5 index card, tape</td>
</tr>
<tr>
<td>Question to Explore</td>
<td>How can I create a design with rotational symmetry? What kinds of transformations are needed to create a tessellation?</td>
</tr>
<tr>
<td>Student Directions</td>
<td>In this project, you will analyze whether or not two shapes are congruent, determine angle measures of polygons using rotational symmetry, and create your own designs using translations and rotations.</td>
</tr>
</tbody>
</table>

Activity 1: What is the Same? (10 minutes)
https://im.kendallhunt.com/MS/teachers/3/1/17/index.html

A. A person’s hands are mirror images of each other. In the diagram below, a left hand is labeled. Shade all of the right hands.

In what ways are the left and right hands the same and in what ways are they different?
B. For each pair of shapes, decide whether or not they are the same (congruent). Explain how you decided. If they are the same, explain what transformations (reflection, rotation, or translation) can be used to move one shape onto the other.

![Shapes](image)

Activity 2: Deducing Angle Measures (20 minutes)
https://im.kendallhunt.com/MS/teachers/3/1/17/index.html

A. How many copies of the equilateral triangle (A) can you draw around a single vertex, so that the triangle’s edges have no gaps or overlaps? What is the measure of each angle in these triangles? (Hint: Use the marked point of the triangle as your rotation point. Trace it once, and then rotate your paper, keeping the point matched up. Repeat tracing until you complete the design. See an example below.)
B. Using the same method above, what are the measures of the angles of the:

- Square?
- Hexagon?
- Parallelogram?
- Right triangle?
- Octagon?
- Pentagon?

Note: For some of the above shapes, you can rotate it around more than one vertex.

**Activity 3: Tessellations (45 minutes)**
http://sofia.nmsu.edu/~pmorandi/math112f00/EscherRectangle.html

**Definition of tessellation** - A tessellation of the plane is a regular repeating pattern of one or more shapes that covers the entire plane without any gaps or overlaps. We most often see tessellations in bathroom and kitchen tiles. In a tessellation, you can perform a translation and the image looks exactly the same. In this example (below), the translation that takes point Q to point R results in an image (copy) that is exactly the same.
A. Now you will have the opportunity to create your own tessellation with translational symmetry. You need: a 3x5 index card (cut down to a 3x3 square), tape, scissors, a pencil, and a blank piece of white paper. The directions are as follows:

a. Draw a line from the top of your index card to the bottom. Make it as plain or squiggly as you want, but no loops.

b. Cut along the line you drew and interchange (switch left with right) the pieces. Tape them together.

c. Draw another line on the resulting figure from left to right.

d. Cut along this new line, interchange (switch top with the pieces, and tape them together.

e. The resulting shape will tessellate the plane.

f. On your blank paper, trace your figure repeatedly until it fills the whole plane.
Activity 4: Rotations (45 minutes)
(adapted from http://splishsplashsplatterart.blogspot.com/2011/02/rotational-symmetry.html)
A. A design is said to have rotational symmetry when it still looks the same after a rotation of \( x \) degrees (as a factor of 360).

B. Now it is your turn to create a design with rotational symmetry. You will need: a pencil, two sheets of white paper, and markers. Follow the directions below:
   a. Using the template on the last page of this packet, carefully trace two circles divided into eight slices.
   b. Take one of your circles and carefully cut out a single slice. You can discard the rest of the circle.
   c. On your single section (which looks like a pizza slice), draw a design in pencil as plain or fancy as you like. (Figure 1)
   d. Once you have finished your pizza slice design, turn the slice over and, with the side of your pencil lead, shade the entire backside of the slice so it is completely covered in pencil lead. (Figure 2)
   e. Lay your pizza slice, design side up, on one of the sections of your first circle. Pressing hard with your pencil, trace your pizza slice design. The lead on the backside of your pizza slice will transfer to the circle section, making a faint copy of your design. Repeat the step with the remaining 7 sections. You may need to “reload” the backside of your pizza slice by again shading it with lead from time to time. (Figure 3)
   f. Once you have traced your design onto all 8 sections, go ahead and color your rotational symmetry project. Remember - colors must also match in a rotation!

Here’s an example of a finished project:


g. Figure 1  Figure 2  Figure 3

Activity 4: Reflection (10 minutes)
What are some objects around your house, yard, or neighborhood which are examples of tessellations?
What are some objects around your house, yard, or neighborhood which are examples of rotational symmetry?
Cross Content Connection: Biology/Art
The natural world is full of examples of symmetry - leaves have reflection symmetry, pinecones, and seashells have radial symmetry, most flowers have rotational symmetry, and of course, a beehive is a great example of a tessellation.

Why do you think so much symmetry can be found in nature? Does it help the survival of the species? Does it promote reproduction? What has more symmetry - plants or animals? Can you find examples of symmetry in both?

Next time you are outside, see how many natural items you can collect which have some form of symmetry. Categorize them by type. Use them to create an art piece that also has symmetry.

Activity 1: Analog Versus Digital Music (5-10 min.)

A. What do you think plays better quality music: records or CDs? Why?

B. Chance the Rapper has been doing some research on the science of sound waves. He came across a NewsELA below article which made him wonder: Do digital music recordings sound better than analog music recordings? Read the article for yourself.

- On a separate sheet of paper, record the advantages and disadvantages of digital and analog recordings mentioned in the text.

Which is better, digital or analog sound? Is there really a difference? [Adapted from: NewsELA]

Let’s look at what makes a sound digital or analog. It all has to do with how you record a sound. An analog recording copies sound as an unbroken electronic signal. Digital sound media includes CDs, DVDs and sound files (mp3). Uncompressed digital sound files tend to be very large. Often, audio engineers will condense these files to make them more manageable. This can affect sound quality.

Today, advances in methods for converting analog to digital have improved the quality of digital recordings. Some people say that high sampling rates and increased accuracy have erased any difference between digital and analog. Others do not agree. There’s a good-sized population of
audiophiles — people who want the highest quality in sound systems possible — who insist that analog provides a better sound.

How are the sounds of analog and digital recordings different?

Sound is naturally an analog signal. An analog signal is continuous. If you hummed a descending note, people listening would be able to detect the change in pitch. They would not be able to point to specific moments when the pitch jumped from one note to the next.

**Analog Recordings Are Continuous**

Digital signals are not continuous. They use specific values to represent a sound wave’s pitch and volume. In a rudimentary digital recording of that note you hummed, you’d hear a collection of shorter sounds.

Some argue that because analog recordings are continuous, they are better at capturing a true copy of sound. As digital recording methods improve, though, digital devices use higher sampling rates with greater accuracy. They can create a sound similar to the original source.

Early digital recordings sacrificed sound quality in favor of reliability. One drawback of an analog format is that analog media tends to wear down. Vinyl albums can get broken or scratched. Magnetic tape eventually wears out. Magnets can erase or destroy information on the tape. However, digital media can replicate sound without wearing out.

Digital media has another advantage. You can make as many copies of the original sound file as you like without hurting it. Eventually, even an analog master recording isn’t going to sound as good as the original. As long as nothing corrupts a digital file, it will stay the same no matter how much time passes.

With today’s high-level technology, many audio engineers will tell you there’s no detectable difference between analog and digital recordings. Even using the best stereo equipment, you shouldn’t be able to identify one medium from the other just by listening. However, some believe digital recordings fall short when it comes to replicating sound accurately.
C. Chance’s management made the claim: **Digital music is superior to analog music because it is a more reliable way to transmit information to fans.**
   □ On a separate sheet of paper, write 2-3 pieces of your best evidence from the article that support this claim.

**Activity 2: Investigating Analog and Digital Sound (40 min.)**

In Activity 1, you were introduced to the two types of music formats available: digital and analog. In Activity 2, we’re going to investigate both types of sound formats. As you complete the following activity think about what might make the digital format better than the analog.

A. Analyze Example 1 and Example 2, and complete the task in the template provided.
Example 1: The image to the right shows an analogue wave and digital wave of the same sound. [Source: https://images.app.goo.gl/Lg2mu3k6bCBsYQpTA]

Example 2: The following images show how you can figure out the shape of a digital sound wave, so that it looks more like the digital sound wave illustration in Example 1 and represents the collection of short sound samples characteristic of a digital sound recording. [Source: https://www.explainthatstuff.com/analog-and-digital.html]

Task: Your turn! Draw an analog sound wave and a digital sound wave that represents the original sound wave below.

[Source: https://images.app.goo.gl/cBKb2QWZ1R1EVN7i8]
B. Read and annotate the following information that compares analog and digital waves:

**Table 1: Analog vs. Digital Waves Structure and Function**

<table>
<thead>
<tr>
<th></th>
<th>Analog</th>
<th>Digital</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Signal</strong></td>
<td>Analog signals are continuous signals</td>
<td>Digital signals are discrete (binary) signals</td>
</tr>
<tr>
<td><strong>Waves</strong></td>
<td>Denoted by sine (curvy) waves</td>
<td>Denoted by square (block) waves</td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td>Human voice in air, record player, cassette tape, VHS tapes</td>
<td>Computers, CDs, DVDs, mp3s, digital photos, and cell phones</td>
</tr>
<tr>
<td><strong>Uses</strong></td>
<td>Can be used in analog devices only</td>
<td>Used in computing and digital electronics</td>
</tr>
</tbody>
</table>

**Table 2: Advantages and Disadvantages of Analog vs. Digital Waves**

<table>
<thead>
<tr>
<th></th>
<th>Analog</th>
<th>Digital</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td>• Tape recordings have been proven to be useful</td>
<td>• More data in a smaller space</td>
</tr>
<tr>
<td></td>
<td>• Records and record albums have artistic value</td>
<td>• No degradation of data</td>
</tr>
<tr>
<td></td>
<td>• No change of the original sound wave</td>
<td>• Data can be shared electronically and fast</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Data can be stored remotely (in “the cloud”)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Making copies does not change the quality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Easily portable</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td>• Tape players or record players are difficult to find</td>
<td>• Computers crash</td>
</tr>
<tr>
<td></td>
<td>• A tape (audio and video) can break</td>
<td>• Software needs to be up to date</td>
</tr>
<tr>
<td></td>
<td>• Copying a tape can deteriorate the quality</td>
<td>• Digital data can be corrupted or hacked</td>
</tr>
<tr>
<td></td>
<td>• Not easily portable</td>
<td></td>
</tr>
</tbody>
</table>

[Source: Wonder of Science - Preserving Grandma’s Family Memorabilia]

C. Answer the questions below on a sheet of paper:

- What benefits would Chance the Rapper gain from recording music digitally?
- What specific features of digital media allow it to be more reliably transmitted globally?
than the analog media?

- Local radio station, WGCI, interviewed a few people involved in the music industry to ask them: Do you prefer vinyl (analog) or mp3 (digital) music recordings? Here are their responses:

**Britney (live music host):** I prefer vinyl. It lets the audience experience the music how it was meant to be. The actual sound wave is not altered in the recording process, so analog recording always gives the truest form of the sound.

**Shaun (sound engineer):** MP3 is by far the best quality of music you will ever get. You can make tons of copies and never lose the original quality. Digital music can be shared the fastest on media platforms like Spotify and iTunes and people get access to the same quality no matter where or how they listen to it.

**Ivan (radio DJ):** Since MP3s (digital) can’t capture the original sound wave exactly, it will always be missing some of the original sound unlike vinyl (analog). On the other hand, it’s hard to find portable analog music players so the ease of using MP3 devices is much more convenient for today’s lifestyle. I think it depends on your own preference.

- Whose statement aligns best with the claim made by Chance’s management that digital recordings are better than analog recordings? How do you know? Record your response on a separate sheet of paper.

**Activity 3: Elaborating on Sound Waves (40-45 min.)**

A. Read and annotate the following article.

**How Fiber-optic Communication Works** [Source: Amplify: How Fiber-optic Communication Works]

As far as we know, nothing moves faster than the speed of light. In a single second, light can travel all the way around Earth 7.5 times! Because of its incredible speed, light can be used to transport information in an instant. One way of using light to carry information is through fiber-optic cable.

Fiber-optic cable is made of long, thin strands of glass about the width of a human hair. These strands are made of very pure glass that reflects light well and are covered in a protective coating. Light bounces along inside the fiber-optic cable at the speed of light, making fiber-optic cable the fastest possible way to get information from place to place. One fiber-optic cable can transmit information about 100 kilometers (60 miles). After 100 km, there’s a device that receives the signal traveling along the cable and re-transmits it along the next cable for another 100 km (60 mi).

How can light transport information? First, let’s look at different ways a specific kind of information—your voice—can be transported. When you are talking to your friend and she is standing right next to you, your vocal cords create a sound wave that travels through the air into
your friend’s ear. But what if your friend is far away? Before cell phones and fiber-optic cables, the only option was to talk to your friend on telephones connected by metal wires (what we now call landlines). If you talk on a landline phone, the phone changes the sound wave of your voice into an electrical signal that carries the information from the sound wave. As the electrical signal travels along the wire, it loses power and picks up “noise.” “Noise” is when a wave gets changed little by little as it travels. When the electrical signal reaches your friend’s telephone it gets changed back into a sound wave, but the noise is now part of the sound wave. This isn’t a problem for short distances, but over very long distances, the noise can sound like static in your friend’s ear!

A better way to transport information over long distances is by sending light through fiber-optic cables. The information carried by the light takes the form of a digital signal. Sound waves and other kinds of waves are not digital, but they can be converted to digital form. To convert the sound wave created by your vocal cords to digital form, a device measures the height of the wave a certain number of times per second. It records the height of the wave at each moment as a number. When it’s time to recreate the wave, those numbers can be used in the right order to produce a wave with exactly the same heights at exactly the same places in the wave—that is, it will be nearly exactly the same wave that was recorded. A wave that has been digitized can be played back as a wave over and over, and it will be the same every time. For that reason, digital signals are a very reliable way to record information—as long as the numbers in the digital signal don’t change, the information can be reproduced exactly over and over again.

To make a digitized signal into something that can be transmitted by light, all those numbers are converted again into a pattern of light flashes (wave pulses). Each pattern of flashes represents one number in the signal. The pattern of light flashes is sent along the fiber-optic cable by a laser that can flash very quickly—hundreds of times per second. When the flashes of light are received on the other end of the fiber-optic cable, they are converted back into numbers and then back into sound waves we can hear with our ears. This means your friend won’t hear any static, even if she’s halfway around the world when you talk to her!

B. Answer these questions based on the text you just read:
   1. What is “noise” and why is it a problem?
   2. How can your voice be changed into a digital form?
   3. Why are digital signals more reliable?

C. In Activity 1, one of the issues brought up about digital recordings is that a very small amount of information gets lost from the original signal. Read this excerpt from an article about how to improve digital sound accuracy and answer the question that follows the text.
It's easy to convert analog information into digital: you do it every time you make a digital photo, record sound on your computer, or speak over a cellphone. The process is called analog-to-digital conversion (ADC) or, more informally, sampling. Sampling simply means “measuring at regular intervals”—and it's easiest to understand with an example.

Let's suppose I'm recording audio. The sound of my voice is really waves of energy that travel through the air to the phone's microphone, which converts them into electrical signals. The sound waves and the signals are both continuously varying waveforms—they're analog information—and they look like the upper graph in the diagram.

An electronic device transmits sound in digital form, so those analog waves need to be converted into numbers. How does that happen? A circuit inside the device called an analog to digital converter measures the size of the waves many times each second and stores each measurement as a number. You can see in the middle figure that I've turned the first graph into a very approximate bar chart. If each bar represents one second of time, we can represent this chart by nine numbers (one number for the height of each bar): 5-7-7-7-5-1-1-3-3-5. So by sampling (measuring) the sound wave once per second, we've successfully turned our analog sound wave into digital information. We could send those numbers to a speaker, which would run the process in reverse and turn the numbers back into sound we could hear.

But do you see the problem? Some information is going to get lost in the process of converting the sound to digital and back again because the measurement I've made doesn't precisely capture the shape of the original wave: it's only a crude approximation. What can I do about this? I could make more measurements, by measuring the sound wave twice as often. That means doubling what's called the sampling rate. Now, as you can see in the bottom chart, I get twice as many measurements and my sound wave is represented by eighteen numbers: 6-7-7-8-8-7-5-2-1-1-2-3-3-4-4-4-4-4. The more I increase the sampling rate, the more accurate my digital representation of the sound becomes—but the more digital information I create, and the more space I need to store it.

Question: How can digital recording be improved for more accuracy? Answer on a separate sheet of paper.
Activity 4: Tying It All Together! (30 min.)

Now that you have explored the difference between analog and digital sound, it is time to tell Chance why digital music recordings are a better investment than analog recordings. Write a letter to Chance on a separate sheet of paper. Be sure to support his management’s claim with at least three pieces of evidence from Activities 2 and/or 3, an explanation of how the evidence supports the claim, and include a model of a digital sound wave. You can use the graphic organizer below to organize your thoughts before drafting the letter.

<table>
<thead>
<tr>
<th>Question: Should Chance the Rapper invest his money into analog or digital music recordings to share his future album with fans? Why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claim: Chance the Rapper should invest his money into digital music recordings because they are a more reliable format to transmit information.</td>
</tr>
<tr>
<td>Evidence: list 3 pieces of evidence that you have collected from Activities 2 and 3 to support your explanation (What data proves your claim?)</td>
</tr>
<tr>
<td>Reasoning (Why does your data prove your claim?)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Original sound wave</th>
<th>Digital sound wave</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="Image" alt="Original sound wave" /></td>
<td><img src="Image" alt="Digital sound wave" /></td>
</tr>
</tbody>
</table>
Optional Hands-On Extension Activity: Ear Guitar

Source: https://www.exploratorium.edu/science_explorer/ear_guitar.html

Materials:
- Metal nail or needle (if you don’t have any, the scissors might also work)
- Two plastic cups (empty yogurt cups work too!) or two tin cans
- Scissors
- String
- Bar of soap (optional)
- Two paper clips
- Another person

Procedure:
1. Use the nail to poke a hole in the center of the bottom of each cup. (If you use tin cans, have a grown-up make a hole with a hammer and the nail.)
2. With your scissors, cut a piece of string that's about 15 feet long.
3. Wet the bar of soap if you have one. Rub one end of the string on the soap, then roll the string in your fingers so it's pointy. Wetting the end of the string works too. Poke the end of the string through the hole into the cup.
4. Reach into the cup with your fingers and pull the string a few inches. Tie the end of the string to a paper clip.
5. Do steps 3 and 4 again with the other cup and the other end of the string.
6. Now you've got an Ear Guitar! Hold one cup up to your ear, and give the other cup to your friend. Tell your friend to walk away from you until the string is tight, then hold his cup up to his own ear. When one of you plucks the string, both of you can hear the sound!
7. Is the sound you hear when you pluck the string different from the sound when your friend plucks the string? Does the sound change when the string is tighter or looser?

Tell-a-Cup

8. You can also use your Ear Guitar as a telephone! Have your friend walk away until the string is tight. Hold your cup up to your ear, and have your friend talk into her cup. Can you hear what he or she's saying?

Optional Digital Resources To Explore:
2. YouTube: Phonograph History https://www.youtube.com/watch?v=8eZ1ZeTN_hE
### Grade 6-8 Social Science Project: Celebrating Everyday Heroes

<table>
<thead>
<tr>
<th>Estimated Time</th>
<th>Total Time 70-80 minutes (average of 15-20 mins per activity)</th>
</tr>
</thead>
</table>
| **Grade Level Standard(s)** | Standards for Grades 6-8:  
SS.IS.3.6-8: Determine sources representing multiple points of view that will assist in organizing a research plan.  
SS.IS.4.6-8.MdC: Determine the credibility of sources based upon their origin, authority and context.  
SS.IS.5.6-8.MdC: Identify evidence from multiple sources to support claims, noting its limitations.  
SS.IS.6.6-8.MdC: Construct explanations using reasoning, correct sequence, examples and details, while acknowledging their strengths and weaknesses. |
| **Caregiver Support Option** | Notes on the structure:  
- Activities are designed to be done in order - each one builds on the other so you should not skip activities  
- Activities are an average of 15-20 mins each. More than one can be done in a day.  
Before giving the activities to students, caregivers might:  
- Spend time reading and discussing the “student directions” together. Encourage them to ask any clarifying questions.  
- When reading the texts, students should circle or underline any unfamiliar words so you both can define them together  
In this particular lesson, it’s important to note that:  
- *Students may not know what a trading card is, so find an example to show to the child.*  
- Caregivers may want to review what the student feels makes a hero. |
| **Materials Needed** | Writing tool, paper |
| **Question to Explore** | How can we celebrate our everyday heroes? |
| **Student Directions** | There are heroes all around us. In this week’s inquiry, students think of a person in their family, community, or larger world who is making a difference right now. They identify a heroic trait or talent, then use words, pictures, and a heavy dose of exaggeration to cast this person as a tall-tale character. Throughout the week, they’ll use their learning to create a “Tall-Tale Trading Card” that describes their hero in larger-than-life terms. |
**Day 1 (Activity 1): Exploring Tall Tales (15-20 min)**

<table>
<thead>
<tr>
<th>This week we’re thinking about the question: “How can we celebrate our everyday heroes?”</th>
<th>Your challenge this week - Create a “Tall-Tale Trading Card” that describes the special traits and talents of your personal hero.</th>
</tr>
</thead>
</table>

Today you will:
- Explore special traits of tall-tale characters
- Recognize and create exaggerations
- Pick a personal hero

You will need:
- Paper or notebook
- Writing tool
- “Everyday Heroes” handout

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**Let’s Get Started!**

**Activity 1: THINK** - Look at this postcard. Ask yourself:

- What’s going on here?
- What seems real?
- What seems fake?

Tall-tale postcards like the one in the picture were made by putting together different photos to make unbelievable scenes, like a corn cob so big that it took a horse-drawn cart to move it! Like the postcards, stories called tall tales were popular in the United States in the 1800s and early 1900s. These tales were exaggerated, meaning that people and events were made to seem much larger or greater than they really were.

**New Words**

- tall tale: a story about a larger-than-life character, sometimes based on a real person, who has exaggerated adventures
- Exaggerated: described as larger or greater than is true

**Activity 2: EXPLORE** - This picture shows a statue of a tall-tale character.

- What’s something you notice about it?
- How would you describe the person in it?

The statue is of a tall-tale character named Paul Bunyan, a mighty lumberjack. People began to tell many stories about the lumberjacks of North America in the late 1800s, when the Western United States was first being settled. At this time, lumberjacks did the work of cutting down trees so that towns and farms could be created.
Read these larger-than-life descriptions from *Paul Bunyan, American Hercules* (1937).

- “So great was his lung capacity that he called his men by blowing through a hollow tree. When he spoke limbs sometimes fell.”
- “For a big man, Paul was very quick on his feet. He could go to one end of his house, blow out the light and get into his bunk before it got dark.”
- “Lumberjacks say that he is the man who cleared all the trees out of North Dakota. He also scooped out the hole for Lake Superior.”

A. What do these exaggerations tell us about the character of Paul Bunyan?
B. What do they tell us about what people might have valued during this time period?
C. OPTIONAL Watch this short video ([Paul Bunyan, American Hercules](https://youtu.be/C-zKKoHvXn0)) which shares some tall tales about Paul Bunyan. See if it confirms or changes your thinking.

*If you are unable to watch the video:* This tall tale makes Paul Bunyan seem superhuman in strength, skill, and size. All of these traits were important for lumberjacks living and making homes in wild, forested areas.

**New Word**
- Trait: A quality that makes one person different from another

**Activity 3: DO** - Your challenge this week: Create a “Tall-Tale Trading Card” that describes the special talents and traits of a real-life hero. Today, you're going to choose your real-life hero!

A trading card – like this one of Paul Bunyan – usually contains a picture of a person with some important facts about them.

People often collect or trade these cards with other people. The trading card you create will describe a real-life hero. This might be a person in your own family, your community, or anywhere in the world. Think about:

- Who are the heroes in your life?
- What makes them special? What trait or talent do you admire about them?
  - Are they strong like Paul Bunyan?
  - Do they have a skill or talent?
  - Is there something else special about them, like kindness or courage?

A. Make a list of the heroes in your life (or use the "Everyday Heroes" handout if you like)
B. Write: Make a list of three people that you think are heroes in your life.
C. Write: Include an important trait or talent for each person.
D. Talk: Choose one of the heroes from your list.
E. Practice talking about your hero in an exaggerated way.
F. Need help? Look at the example below. Notice how each sentence about Paul Bunyan is a bigger exaggeration! Can you do the same with your hero?
  - 1st try: Paul Bunyan is so strong he can cut down a forest by himself.
  - 2nd try: Paul Bunyan is so strong he can clear a forest with one swing of his axe.
Day 1 - Everyday Heroes Handout

Activity 1: List the names of a person you admire in your family, local community, or the larger world. Think about celebrities, athletes, artists, leaders, and people making a difference in the world right now. Write an important trait or talent for each person.

<table>
<thead>
<tr>
<th>Person</th>
<th>Trait or Talent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Activity 2: Now choose 1 of the 3 people and tell their story out loud using this sentence frame. No need to write yet, this is a thinking exercise! (Name) is so (describe trait or talent), they (exaggeration)!

- Now try that sentence frame, exaggerating the trait or talent to make it more unbelievable!
- Now try that sentence frame one more time, getting even wilder and harder to believe!

Activity 3: Write your final sentence here:

_________________________________________ is so __________________________________________, (name) (describe trait or talent) they ______________________________________________________________________________________!

(exaggeration)

Day 2: Imagining Your Hero (15-20 min) "How can we celebrate our everyday heroes?"

Today you will:
- Investigate what makes a story into a tall tale
- Explore the story of John Henry
- Create a “Trading Card Plan”

You will need:
- Paper or notebook
- Writing tool
- “Trading Card Plan” hand out (optional)

Activity 1: THINK - While tall tales could be outrageous and funny, they also served an important purpose. Characters showed qualities like strength, courage, and cleverness, all of which were important in rugged landscapes and dangerous times in US history. These stories provided examples of people coping with hardships and overcoming challenges. Some historians say they also helped to create a shared history for a new nation. Tall tales did include things that were unreal, but some tall tales were based on real people who did amazing things.
<table>
<thead>
<tr>
<th>Name</th>
<th>Fact</th>
<th>Exaggeration</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Calamity Jane”</td>
<td>Martha Jane Canary worked as a Pony Express rider, carrying mail by horseback over 50 miles of rough terrain and across rivers. She was known for being tough and fearless, as well as good at horse racing.</td>
<td>Calamity Jane was so good at roping cattle that she could knock a fly off a cow's ear with a 16-foot whiplash.</td>
</tr>
<tr>
<td>Name: Martha Jane Canary</td>
<td>Lived 1852-1903</td>
<td></td>
</tr>
<tr>
<td>“Johnny Appleseed”</td>
<td>John Chapman was a religious man and a businessman who planted nurseries of apple trees on the western frontier. He was known for his wilderness skills and his love of sleeping outdoors.</td>
<td>Johnny Appleseed walked across the wilderness of the United States, wearing no shoes, a burlap sack, and a tin pot hat, scattering apple seeds in the wind.</td>
</tr>
<tr>
<td>Name: John Chapman</td>
<td>Lived 1774 – 1845</td>
<td></td>
</tr>
<tr>
<td>“Davy Crockett”</td>
<td>David Crockett was a politician and soldier who died at the famous Battle of the Alamo in Texas. He was known as a very skilled frontiersman and hunter.</td>
<td>Davy Crockett killed a bear when he was three years old.</td>
</tr>
<tr>
<td>Name: David Crockett</td>
<td>Lived 1786 – 1836</td>
<td></td>
</tr>
</tbody>
</table>

**Activity 2: EXPLORE** - Let’s dig deeper into a tall tale based on a real person named John Henry. He helped to build the railroads in the mid-1800s. To build the railroads, people needed to dig tunnels and create paths through mountains.

Look at this picture of people standing in front of a railroad tunnel they helped to dig.

- If they didn’t have big machines to help them, how do you think they could dig these tunnels?
- What kind of special traits or talents would help someone do this work?
This picture shows a statue of John Henry.

- How would you describe how John is represented in the statue?
- Why do you think someone like John would be a hero to railroad workers?

John Henry worked on the railroads as a steel driver. To dig tunnels, steel drivers like John would swing their hammers as hard as they could to pound a drill into rock. Then, those holes would be filled with dynamite and the rock would be blasted away. The companies that built the railroads needed steel drivers to work hard and fast. These companies were racing each other to build railroad systems across the United States. Thousands of people worked on building the railroads. It was very hard and dangerous work, and workers did not get paid very much for doing it.

In 1870, railroad workers began to dig the Great Bend Tunnel in the area now known as West Virginia. While digging the tunnel, John Henry competed against the steam drill and won! If you were making a “Tall Tale Trading Card” for John Henry, what would it look like?

A. How would you fill in these blanks?
   - Name: ____________
   - Trait or Talent: ____________
   - Tool: ____________
   - Setting: ____________
   - Known For: ____________

   - If you are unable to watch the video: This tall tale makes John Henry seem superhuman in strength, skill, and size. All of these traits were important for steel drivers living and competing against the increasing use of machines to build railroad systems. Isn’t it amazing that people still tell John Henry’s story today?

Activity 3: DO - Keep in mind your challenge this week: Create a “Tall-Tale Trading Card” that describes the special talents and traits of a real-life hero. Today, you will choose one of your everyday heroes and make a “Trading Card Plan.”

A. Think back to the list you made of three people you think are heroes. Do you remember choosing one of those heroes and making up exaggerations about them?

The plan you create today will show that hero’s important trait or talent in an exaggerated way.

Goals: Your “Trading Card Plan” should show:
- A real person who is a hero in your eyes
- A special trait or talent that has been exaggerated
- Words and pictures that show the person’s actions in an exaggerated way
- Details that reflect the time and place
C. Now it's time to create your “Trading Card Plan.” Make sure to include:

- Hero Name:
- Trait or Talent:
- Tool:
- Setting:
- Known For: (Hint: This is your exaggeration!)
- Sketch:

D. Write it out on a piece of paper or use the “Trading Card Plan” handout. Remember to save your “Trading Card Plan” so you can use it when you make your “Tall-Tale Trading Card.”

Trading Card Example

Name: Paul Bunyan
Trait or Talent: Strength
Tool: Axe
Setting: Forest
Known for: (Hint: This is your exaggeration!)

Paul Bunyan is so strong he can clear a whole forest with one swing of his axe, or sometimes with just a sneeze!

Sketch:

Trading Card Plan Handout

Name:
Trait or Talent:
Tool:
Setting:
Known for: (Hint: This is your exaggeration!)

Sketch:
Day 3: Evaluating the Work (15-20 min) "How can we celebrate our everyday heroes?"

Activity 1: THINK You’ve already created your “Trading Card Plan” describing your hero in words and pictures! When someone sees your plan, they should learn about:

- A real person who is a hero to you
- Your hero’s special trait or talent (exaggerated by you!)
- Details that reflect time and place

Activity 2: EXPLORE

A. Look at this student’s “Tall-Tale Trading Card.”
   - Does this work seem to show a real person?
   - Does this work seem to show a special trait or talent that has been exaggerated?
   - Do words and pictures show the person’s actions in an exaggerated way?
   - Are there details that reflect time and place?

B. Now imagine we have the chance to give another student feedback on their work to make it stronger and clearer.
   - What advice would you give the artist to make this work even stronger?
   - The student could add...
   - The student could try...
   - The student could change...

Activity 3: DO - Keep in mind your challenge this week: Create a “Tall-Tale Trading Card” that describes the special traits and talents of your personal hero. Today, you will explore your "Trading Card Plan" to check if you are meeting your goal. Pencils down! This is a thinking exercise!

A. Look at your work and ask:
   - What parts show who my hero is?
   - What parts show my hero’s trait or talent?
   - What parts show that I’ve exaggerated my hero’s trait or talent

B. Wait, still don’t touch your work! First, make a work plan! Complete one of these sentences:
   - I will add...
   - I will try...
   - I will adjust...

Be sure to save your "Trading Card Plan" so you can use it to create your “Tall-Tale Trading Card.”
Day 4: Finalizing the Work (15-20 min) "How can we celebrate our everyday heroes?"

<table>
<thead>
<tr>
<th>Today you will:</th>
<th>You will need:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finish creating your &quot;Tall-Tale Trading Card&quot;</td>
<td>• Your work from previous activities</td>
</tr>
<tr>
<td></td>
<td>• Writing tool</td>
</tr>
<tr>
<td></td>
<td>• A sheet of paper or large index card</td>
</tr>
<tr>
<td></td>
<td>• &quot;Tall Tale Trading Card Template&quot; handout, (optional)</td>
</tr>
<tr>
<td></td>
<td>• Coloring materials (optional)</td>
</tr>
</tbody>
</table>

Activity 1: THINK - It’s time to take steps to finalize your work based on your work plan. Remember your work plan? That’s when you said:
- I will add…
- I will try…
- I will adjust…

A. Decide or discuss: **What will you do next to finalize your work?**

Activity 2: EXPLORE - Check out a "Tall-Tale Trading Card" created by another student.
A. What changes did this person make to their work?
B. How do these changes help you understand more about their tall-tale character?

**First Draft**

**Final Draft**

![First Draft Image]

![Final Draft Image]
Activity 3: DO - Today, you will work to finalize your “Tall-Tale Trading Card”.
   A. Get out a new sheet of paper or large index card. You could also use the “Tall Tale Trading Card Template” handout.
   B. Get out your “Trading Card Plan” and any other materials from previous activities.
   C. Think about your work plan and get to work making your final draft.

Day 5: Reflecting and Sharing (15-20 min) "How can we celebrate our everyday heroes?"

<table>
<thead>
<tr>
<th>Today you will:</th>
<th>You will need:</th>
</tr>
</thead>
</table>
| ● Think about how your “Tall-Tale Trading Card” turns a real-life person into a larger-than-life character  
● Find a way to share your final work | ● Your finished “Tall Tale Trading Card”  
● “Sharing” handout (optional) |

Activity 1: THINK - Ordinary people became heroes of tall tales in the past. Just imagine: your hero might inspire a tall tale in the future!

Activity 2: EXPLORE - Look at your finished “Tall-Tale Trading Card.” Think about or discuss:
   ● How would you explain the choices you made in designing your trading card to someone else?
   ● Why is it important to celebrate our everyday heroes?
   ● What do you hope people will understand about your hero by looking at your trading card?

Activity 3: DO - Now that you’ve completed your “Tall-Tale Trading Card,” it’s time to share your work with others! Here are some ideas for connecting with others:
   A. Share with a family member and...
      ○ Help them to create their own and ask them if they have comments, questions, or a connection to your work (or use the “Sharing” handout to get a written response).
   B. Ask an adult to help you share your work online with the hashtag #inquiredtogether.
   C. Send your “Tall-Tale Trading Card” to the person you represented.
   D. Hang your “Tall-Tale Trading Card” in the window.
   E. Keep your “Tall-Tale Trading Card” somewhere safe as a historical record that you and others can look back on later.
DAY 5 - Sharing Handout - Please take a look at my work and fill this out. **I have a...** (circle one)

- **Comment:**
- **Question:**
- **Connection:**

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**Cross Content Connection:** By examining tall tales and characters used in history, from Paul Bunyan to Johnny Appleseed, and by developing your own character, you are using many social science skills, but also so much more! There are so many connections to language arts, math and science that you can continue to explore. Here a few ways to extend your learning and make connections to other subjects.

- **Math:** Create word problems for younger students to use that INCLUDE your characters in everyday life! Help the younger students practice their math facts by designing a few questions that include the use of your character and others.
- **Science:** Research the area of the world that your character lives in (or lived in). Describe the climate and physical features of that area. How might those things impact your character?