Hello Students, Families and Caregivers,

This resource packet includes multiple projects that students can work on at home independently or with family members or other adults. Each project can be completed over multiple days, and the projects can be completed in any order.

Additional enrichment activities are also available and organized into Read, Write, Move, Design, and Solve categories to engage students in learning in many different ways while at home. Please be sure to also pick up an enrichment packet for access to these activities.

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Read  Write  Move  Design  Solve
# Fourth Grade Literacy Project: Drama

<table>
<thead>
<tr>
<th>Estimated Time</th>
<th>Total Time 70-80 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Level</td>
<td></td>
</tr>
<tr>
<td>Standard(s)</td>
<td></td>
</tr>
<tr>
<td>RL.4.3</td>
<td>Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character’s thoughts, words, or actions).</td>
</tr>
<tr>
<td>W.4.4</td>
<td>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.)</td>
</tr>
<tr>
<td>Caregiver Support Option</td>
<td>Students will be able to use their caregiver to act out the play, as well as to help draw the scene.</td>
</tr>
<tr>
<td>Materials Needed</td>
<td>Packet, blank sheet of paper, materials to draw.</td>
</tr>
<tr>
<td>Question to Explore</td>
<td>How does a setting impact a scene overall?</td>
</tr>
<tr>
<td>Student Directions</td>
<td>Hello students! For this work you will be reading a scene about four brave students who challenged the laws that kept blacks and whites separate. As you read, think about how the setting of the play (the time and place) impact the overall scene.</td>
</tr>
</tbody>
</table>

## Activity 1: Scene Read and Guiding Questions

**Directions:** Good morning actors! Did you know that actors are readers too? They are able to read scripts, identify settings, and make changes to their characters because of setting. Today, you will read the attached play and answer some questions. This will allow you to begin to think about the setting, because later this week you will actually be able to create one! Happy reading!

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A. First, start by reading the scene below.
Standing Up by Sitting In
By Ruth Spencer Johnson

Note: The Civil Rights Movement was a movement organized by African Americans, beginning in the late 1940s and ending in the late 1960s, to end unfair treatment against black people and earn them equal rights. In this drama set in the South during the 1960s, four high school students challenge the laws that keep blacks and whites separate. As you read, take notes on how the protesters interact with the other people in the store.

Cast:
Joseph, David, and Linda, black high school students
Frank, white high school student
Narrator
White waitress
White customer

Scene 1: June 1960

(Three black high school students, dressed in their best clothes, stand outside a store in a South Carolina town. They are gathering courage to begin a sit-in at the store lunch counter, which serves only white people.)

Narrator: Beginning in 1960, black students started sit-ins to protest against unfair segregation laws. At sit-ins, students sat at lunch counters for hours, even though the waitresses would not serve blacks. Bystanders often harassed, or bothered, the protesters by hitting them and yelling insults. Many students were arrested for breaking segregation laws.

Joseph: [to his friends] We are just going to sit at the counter and politely order something to eat. When they refuse to serve us, we will sit there until the store closes.

David: I hope our sit-in will be peaceful, not like that one in Tennessee last week. Linda: I heard that bystanders there kicked the protesters and squirted ketchup on their heads.

Joseph: No matter what happens, we’ll stay cool, just like we practiced in our nonviolence training.
Narrator: The students promised each other they would remain nonviolent and not fight or use ugly words, even if they were attacked or jailed. They believed their protests would have more power if they reacted to anger and hatred with peace and love.

Linda: My parents are terrified I might get hurt or arrested, but I told them it would be an honor to go to jail for this cause.

David: [nods] It’s up to us kids to push the movement forward. Our parents’ generation has made some progress with boycotts, but things are moving too slowly.

[Frank rushes up to the group. He has been part of the students’ nonviolence training]

Frank: Hey there! I heard you’re going to have a sit-in. I want to join you!

Scene 2

(The students enter the store. There are racks of clothing for sale. Along the back wall is a lunch counter with stools. A waitress serves a plate to a white customer who is sitting at the counter. The students walk to the back and sit quietly at the counter.)

Narrator: The waitress has been afraid a sit-in might happen at her lunch counter. She does not want to serve the students. Even if she thinks segregation is unfair, her boss could fire her for serving blacks in his store. And the possibility of violence, against herself or the students, scares her.

David: I’d like to order lunch, please.

Waitress: This counter is for whites only. You know that. You’d better leave before there’s trouble.

Customer: [angrily] If you know what’s good for you, you’ll get out of here right now.

Linda: [to waitress] Your store is happy to take my money when I buy a dress. Why won’t you take my money at the lunch counter?

Waitress: It’s just the way things are around here.

Frank: Well, we say it’s time for a change! Joseph: The color of our skin shouldn’t determine where we can sit.

Customer: [to Frank] Now why are you hanging out with them?

Frank: These guys are my friends. I can’t just stand by and watch while you treat them like second-class citizens.

Joseph: This sit-in is our way of standing up for what’s right.
Customer: [with increasing anger] I’m warning you — I’m going to call the police. They’ll put you all in jail where you belong!

David: If they arrest us, more of our friends will come.

Linda: You can fill your jails, but you’re not going to stop us!

Narrator: Student sit-ins spread through the South and succeeded in integrating lunch counters in many cities. The students’ energy and determination inspired adults to protest other forms of segregation. Without the involvement of these children, the civil rights movement might not have succeeded at all.

B. Now answer the questions below by choosing the correct answer or writing your answer.

1. **Why are the students having a sit in?**
   a. To upset the people in the store.
   b. To protest the unfair price of food
   c. To have lunch at the counter
   d. To show they do not support segregation.

2. **What did the students want out of the protest?**
   a. They wanted to cause a scene.
   b. They wanted to be arrested.
   c. They wanted it to make a peaceful statement.
   d. They wanted to scare the other customers.

3. **Why doesn’t the waitress want to serve the black students?**
   a. She doesn’t want there to be any trouble.
   b. She supports segregation.
   c. She fears the students will hurt her.
   d. She thinks sit-ins are pointless.

4. **Why does the waitress continue to refuse to serve the students?**
   a. It is against the rules to serve them.
   b. She doesn’t think they have the money
   c. Her boss just came in.
   d. The customers are getting upset.

5. **How did the students affect others?**
   a. They brought their parents to the sit-ins.
   b. Their refusal inspired others.
   c. They encouraged their parents to boycott.
   d. They came up with the idea of nonviolent protests.
6. In the drama, the author describes how the students challenged racial segregation. On a separate piece of paper, describe a time when you stood up for something you believed in. What did you do and how did it make you feel?

Activity 2: Scene Reread and Setting Questions

Directions: Hello thespians! (A thespian is someone involved in the theatre). Today, you will be identifying the pieces of setting in our scene. First, read the scene again (to make it fun, read it with different voices). Then complete the setting worksheet because you will be able to use it to create your scene tomorrow!

A. First, let’s review and think about setting by reading the setting guide below:

Setting
- The setting includes the **time**, **place**, and **environment** in a story.
- The **setting** affects what happens in the story.
- **Characters** react to the setting.
- The characters and the setting should **fit** together.

<table>
<thead>
<tr>
<th>Time</th>
<th>Place</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>When?</td>
<td>Where?</td>
<td>What?</td>
</tr>
<tr>
<td>Morning</td>
<td>Boat</td>
<td>Is it hot or cold?</td>
</tr>
<tr>
<td>Afternoon</td>
<td>At home</td>
<td>Is it night or day?</td>
</tr>
<tr>
<td>Evening</td>
<td>At the store</td>
<td>Is it rainy?</td>
</tr>
<tr>
<td>In the year 2050</td>
<td>In a park</td>
<td>Is there a breeze?</td>
</tr>
<tr>
<td>In the year 1962</td>
<td>In outer space</td>
<td></td>
</tr>
<tr>
<td>In the fall</td>
<td>At a museum</td>
<td></td>
</tr>
</tbody>
</table>
B. Now, let’s reread the play “Standing Up by Sitting In” from Activity 1. Then, fill out the following graphic organizer. This will help you prepare to make your scene tomorrow!

<table>
<thead>
<tr>
<th>Example of Setting</th>
<th>Where did you find this in the story?</th>
<th>How does the setting impact the story?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: The story happened in the 1960's.</td>
<td>I found this on line 1 of the play, in the description.</td>
<td>I know that this was a time when segregation occurred. In the setting, I would assume I would see signs separating people based on race.</td>
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</tbody>
</table>

C. Students will view the guide on setting.
D. Students will identify the setting in the play they had read.
Activity 3: Scene Creation

Directions: Hi set designers! You have worked so hard to bring the setting of the scene to life. Before we create our set, let’s read the scene one more time. This time, to make it dynamic, read it out loud (or with a family member)! Next, write down what you identified as the setting in the set creation activity. Finally, pull out some crayons, or other artistic utensils, and start sketching a scene!

A. After reading the play one more time, write down on a separate piece of paper your examples of setting. Include key descriptions. Feel free to write as much as you can!

B. Now, you will be able to use the words above to create a visual representation of the scene from the play. Remember to use as many descriptions from the scene as you can! Label the descriptions from the screen beside the item (Example: If you draw a restaurant, label it).

C. Describe how the setting impacts the scene. How would the scene be different if it were in another setting? Write your answer in one paragraph and by using complete sentences.

Activity 4: Reflection

Directions: On a separate piece of paper, describe how the setting impacts the scene. How would the scene be different if it were in another setting? Write your answer in one paragraph and by using complete sentences.

Additional Activities:
- Drama: After focusing on the setting, reread the play looking at the characters. Use them to create your own play!
- Social Science: Do some additional research online about the Civil Rights Movement. What did you learn? How does this relate to today?
### Fourth Grade Math Project: My Neighborhood Bakery

<table>
<thead>
<tr>
<th>Estimated Time</th>
<th>Total Time 70-80 minutes</th>
</tr>
</thead>
</table>
| **Grade Level Standard(s)** | 4.OA.A: Use the four operations with whole numbers to solve problems.  
4.NBT.A: Generalize place value understanding for multi-digit whole numbers.  
4.NBT.B: Use place value understanding and properties of operations to perform multi-digit arithmetic. |
| **Caregiver Support Option** | Provide your student with a quiet place to work. Remind them to double check their answers. There is a game at the end of the packet that you can play with your student. |
| **Materials Needed** | For the packet: pencil and paper  
For the game: deck of playing cards |
| **Question to Explore** | How can we use math to solve problems in real-life situations? And, what is YOUR favorite cookie? |
| **Student Directions** | This project is about a bakery in your neighborhood. In this project you will use mathematical thinking to figure out problems in the bakery.  
Read each question carefully. Feel free to highlight and underline important information in each of the questions. Make sure to show your work on a separate sheet of paper. Remember to include correct labels for your answers. And, always double check your answers to see if they make sense. |

### Activity 1: Time to Start Baking

A. A bakery makes three different kinds of desserts: cupcakes, brownies, and cookies. The table below shows how many of each dessert the bakers can make from one batch.

<table>
<thead>
<tr>
<th>Desserts</th>
<th>Amount in One Batch</th>
<th>Amount in 13 Batches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cupcakes</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Brownies</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Cookies</td>
<td>34</td>
<td></td>
</tr>
</tbody>
</table>

Today the bakers decide to make 13 batches of each dessert. How many of each dessert will be available for sale today? Fill in the Table.

B. Customers that visit the bakery usually buy 4 desserts. If each customer that visits the bakery today buys four desserts, and the bakers sell all of their desserts, how many total customers will visit the bakery today? Show how you got your answer by writing an equation or drawing a
C. On a normal day the bakery will usually sell 786 desserts. Based on the table that you completed above in Part A, have they bakers baked enough desserts for today? Explain in words how you got your answer.

Activity 2: Special Orders at the Bakery
A. The bakery also takes special orders from visitors. Julianna’s family is planning a party and has ordered 78 cupcakes, 185 brownies, and 214 cookies. The bakery makes special boxes for their desserts. The table below shows how many of each dessert will fit in one box.

<table>
<thead>
<tr>
<th>Desserts</th>
<th>Number of Items in One Box</th>
<th>Number of Boxes for Julianna’s Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cupcakes</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Brownies</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Cookies</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Fill in the column on the right to show how many boxes the bakery will use for each dessert in Julianna’s special order. Will all of the boxes be completely full? Explain your answer in words or with a drawing.

B. Craig is working to prepare Julianna’s order. Craig thinks he will need 19 boxes to pack all of Julianna's cupcakes. Do you agree with Craig? Explain in words why you agree with Craig or disagree with Craig.

C. On a different day the bakers were so busy they made 2,142 cookies. How many boxes will the bakers need if they want to put all of those cookies into boxes? How many cookies will be in the very last box? Explain how you know and which kind of cookie is your favorite.
**Activity 3: Planning for a Party**

The bakery sells their desserts in boxes. The table below shows how much a box of each dessert costs at the bakery.

<table>
<thead>
<tr>
<th>Desserts</th>
<th>Price per Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Box of 4 cupcakes</td>
<td>$13</td>
</tr>
<tr>
<td>1 Box of 6 brownies</td>
<td>$17</td>
</tr>
<tr>
<td>1 Box of 8 cookies</td>
<td>$15</td>
</tr>
</tbody>
</table>

A. Terrion is helping plan a summer party for his neighborhood. He will buy 24 cupcakes, 72 brownies, and 96 cookies. How much money will Terrion spend altogether for desserts at the bakery?

B. If Terrion has a total of $550 in his pocket, how much money will he have left after buying desserts for the party?

C. With the money that Terrion has left after buying the desserts, what would you suggest Terrion buy at the bakery? Explain your answer.

D. Terrion learns that on Sundays the bakery gives discounts for large dessert orders. The table below shows the discount for boxes of desserts if a customer buys more than four boxes.

<table>
<thead>
<tr>
<th>Desserts</th>
<th>First 4 Boxes (Price per box)</th>
<th>After 4 Boxes (Price per box)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box of 4 cupcakes</td>
<td>$13</td>
<td>$11</td>
</tr>
<tr>
<td>Box of 6 brownies</td>
<td>$17</td>
<td>$14</td>
</tr>
<tr>
<td>Box of 8 cookies</td>
<td>$15</td>
<td>$12</td>
</tr>
</tbody>
</table>

How much money does Terrion save if he buys his desserts for the party on Sunday?
Activity 4: Reflection and a Game
Here is a game you can play.

Players
2 or more. If there is no one around to play with, this game can also be played alone.

Materials
Playing cards*

Procedure
1. Draw a multiplication mat on a piece of paper (see the chart below for an example). Try the standard version first. You can move on to the challenge version whenever you are ready.
2. If you are using playing cards, sort out all cards that are numbered 2 through 6. You will also need aces which will have the value of 1 in this game.
3. Shuffle the cards and put them face down in a deck.
4. Take a card from the deck and decide where you will record the number on your multiplication mat. Once you record the number, you will not be able to change it.
5. Take turns drawing cards from the deck with the other players. Continue drawing cards until your multiplication mat is filled.
6. The person with the product closest to 1,000 wins the round and receives 1 point. Players can create products greater or lesser than 1,000.
7. The person that reaches 10 points wins the game.

<table>
<thead>
<tr>
<th>Standard Multiplication Mat</th>
<th>Challenge Multiplication Mat</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="chart1.png" alt="Multiplication Mat" /></td>
<td><img src="chart2.png" alt="Multiplication Mat" /></td>
</tr>
</tbody>
</table>

For the challenge, change the target to be 10,000. You can also include playing cards 7 - 9 in the deck.

*If you don’t have playing cards available, you can cut a piece of paper into rectangular pieces. Write a number 1 through 6 on each rectangle. If you have dice at home you can also roll one instead of using a deck of playing cards.

This game is adapted from “Dicey Operations” by NRICH: [https://nrich.maths.org/6606](https://nrich.maths.org/6606).

For the game above, explain your strategy for deciding where to place your numbers on your multiplication chart.
Optional Additional Activities:
Art: The bakery that is mentioned in these problems doesn’t have a name. Imagine you are one of the bakers at this bakery. Give your bakery a creative name. Then design a logo that you can use on the boxes that you use for the desserts you sell. Try providing a unique design to get the attention of potential customers.

Social Studies: Think about the stores or bakeries in your neighborhood. Are there items for sale that reflect a special tradition? Provide a description on one of your favorite things to eat.
## Fourth Grade Science Project: Energy!

<table>
<thead>
<tr>
<th>Estimated Time</th>
<th>Total Time 70-80 minutes</th>
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</thead>
<tbody>
<tr>
<td>Grade Level Standard(s)</td>
<td>4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.</td>
</tr>
<tr>
<td>Caregiver Support Option</td>
<td></td>
</tr>
</tbody>
</table>
  - Activity 1: If student wants to explore energy outside the home, accompany them on a walk  
  - Activity 2: Help the student by turning on some electrical devices that may not be appropriate for them to use on their own (microwave, blender, toaster, etc)  
  - Activity 4: Help students to carefully unplug and plug back in the Television  
  Note: While the scenario for this project involves a television, any device that needs to be plugged in can be substituted in the scenario and in activity 4. |
| Materials Needed      |  
  - Pencil  
  - Paper  
  - Electrical devices (those already present in the home)  
  - Television (or other electrical device) |
| Question to Explore   | Why does Ricardo’s TV not work when it is unplugged? |
| Student Directions    | Each activity has directions for you to follow. |

**Read the following scenario (mini story):** While cleaning around the television, Jacqueline’s mom unplugged the television and forgot to plug it back in! When Ricardo, Jacqueline’s younger brother, went to turn it on, it did not work! Jacqueline realized it was unplugged and plugged it back in, allowing Ricardo to turn the television on. Ricardo walked over to Jacqueline and asked her, “Why doesn’t the TV work when it is unplugged?”

Go through the following activities and, in activity 4, help Jacqueline to make a poster explaining to Ricardo why the TV has to be plugged in to work.
Activity 1: What is Energy? (15 minutes)

A. Answer the following questions on a separate sheet of paper:
   a. What do you think energy is?
   b. Where is it in the place you live?

B. What is Energy? Read the two pages below.

C. Make a list of all the areas in your home and around your home where you see energy present. Explain why they are examples that energy is present.

<table>
<thead>
<tr>
<th>Example of Energy</th>
<th>How do you know that is an example of energy?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Activity 2: Forms of Energy (15-20 min.)
A. There are many different forms of energy. Read the following two pages from *It’s All Energy* and circle the 6 types of energy.

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**Forms of Energy**

The examples on these pages might look like a lot of different things, but they are really all showing just one thing—energy. All of these forms of energy can make things move or change. They all can be converted from the form they are in to any of the other forms. They are all energy.

**Electrical energy** powers this hair dryer. Anything that you can plug in uses electrical energy.

Motion is a form of energy. An airplane in the sky has **motion energy**. So does anything else that is moving.

Sound is also a form of energy. Every sound you hear is **sound energy** traveling into your ears.

Another form of energy is called **thermal energy**. The hotter something is, the more thermal energy it has.

Light is also a form of energy. The light that you see coming from lamps, the sun, and other sources is **light energy**.

There is **chemical energy**, too. Our bodies use the chemical energy in food. Anything that burns fuel or runs on batteries is also using chemical energy.

(Source: Amplify Science *It’s All Energy*, p. 6-7) (Español)

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B. Find Electrical Devices in your home (These are devices you plug into the wall. Devices with batteries do not count for this activity.) Fill out the name of the device and energy that the device outputs. See example below.

<table>
<thead>
<tr>
<th>Name of Electrical Device</th>
<th>Input Energy</th>
<th>Output Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toaster</td>
<td>Electrical Energy</td>
<td>Thermal Energy (Light Energy)</td>
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<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Electrical Energy</td>
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<td></td>
<td>Electrical Energy</td>
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<td></td>
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<tr>
<td></td>
<td>Electrical Energy</td>
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</tbody>
</table>

C. How do you think the electrical energy gets converted into different forms of energy? Why do you think that? Write your answer on another sheet of paper.
Activity 3: Where does electrical energy come from? (15-20 minutes)
Read and answer the question that goes with each of the 3 pages below.

1. How is electrical energy transferred from one place to another place?

2. What is an energy converter? What are some examples of energy converters that you see around you right now? How do you know?
3. What does a source converter do? Why is it important to our world?

Source Converters
We depend on **electrical energy** to run all the **electrical devices** we use every day. Where does that electrical energy come from? **Engineers** have figured out many ways to take different **forms of energy** from lots of different **sources** and **convert** them into electrical energy. To do this, they use source **converters**. You’ll find some examples of source converters on the next few pages.

**Spinning Electric Generators:**
An electric generator takes any form of energy that can make it spin and converts it to electrical energy. The energy a generator converts can come from sources such as wind, water, or fossil fuels.

**Generators in hydroelectric power plants can be as big as houses.**

**The generator in a car is about the size of a volleyball.**

(Source: Amplify Science *It’s All Energy*, p. 8, 14, 17)  *(Español)*

**Activity 4: Explaining How a TV Works (25 min)**

[Note: You may replace TV with another electrical device and complete the investigation below.]

Part 1: Have the television turned off, but plugged into the wall. Turn on the television using the remote or the button on the TV.
1. What happens when you press the button to turn the TV on? What do you observe?
2. What is the input energy?
3. What is the output energy?
4. Do you think energy was transferred (moved from place to place) when the TV turned on? How do you know?

Part 2: Unplug the television. Try to turn the television on with the remote or the button on the TV.
1. What happens when you press the button to turn the TV on? What do you observe?
2. What is the input energy?
3. What is the output energy?
4. Do you think energy was transferred (moved from place to place)? How do you know?
B. Create a Poster: Using another sheet of paper, sketch a draft of the poster you will create to help Jacqueline explain to Ricardo why the television will not work when it is unplugged. Be sure to include drawings, labels, words. Be as creative as possible. Optional: After you create your draft, make a larger poster and add color!

**Words and Ideas to include:**

<table>
<thead>
<tr>
<th>Electrical Energy</th>
<th>Output Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Energy</td>
<td>Energy transfer</td>
</tr>
<tr>
<td>Energy converter</td>
<td>Electrical Device</td>
</tr>
</tbody>
</table>

**ELA Extension Activity (Optional):**
Write a skit where you act out the interaction between Jacqueline and Ricardo. Start with the opening scenario (on the first page of this packet) and end with Jacqueline explaining to Ricardo why the TV will not work when it is unplugged.
# Grade 3-5 Social Science Project: Together When Apart

<table>
<thead>
<tr>
<th>Estimated Time</th>
<th>Total Time 70-80 minutes (average of 15-20 mins per activity)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade Level Standard(s)</strong></td>
<td><strong>SS.IS.3.3-5.</strong> Determine sources representing multiple points of view that will assist in answering essential questions. <strong>SS.IS.4.3-5.</strong> Gather relevant information and distinguish among fact and opinion to determine credibility of multiple sources. <strong>SS.IS.6.3-5.</strong> Construct and critique arguments and explanations using reasoning, examples, and details from multiple sources.</td>
</tr>
</tbody>
</table>
| **Caregiver Support Option**        | Notes on the structure:  
|                                    | ● Activities are designed to be done in order - each on builds on the other so you should no skip activities  
|                                    | ● Activities are an average of 10-20 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:  
|                                    | ● student(s) are developing coded messages, you might want to review the directions and the “Coding Code of Conduct” on p. 10  
|                                    | ● Consider making your own coded message for them and ask your student to decipher  
|                                    | ● Ask them to share and explain their codes to you - on p. 9 students will review and revise their message. Consider using the examples provided to discuss and reflect on what can be better. |
| **Materials Needed**                | Writing tool, paper |
| **Question to Explore**             | How can we communicate with others to share our thoughts and ideas? |
| **Student Directions**              | When we are separate, we have to find ways to communicate ideas, thoughts, and feelings. During certain periods of history, people have wanted to communicate with each other in ways that only friends and allies would understand. So they developed codes! In this weekly inquiry, students examine codes used in history, from the Culper Spy Ring to the use of Morse code. Throughout the week, they'll use their learning to develop their own code to communicate with friends near and far. |
Day 1 (Activity 1): Examining Historical Codes (15-20 min)

This week we’re thinking about the question:
“How can we communicate with others to share our thoughts and ideas?”

Your challenge this week:
Connect to someone using a “Coded Message.”

Today you will:
- Examine historical codes
- Decode a message

You will need:
- Paper or notebook
- Writing tool

Let’s Get Started!

A. THINK  Do you know what these mean?

Guess what? You just cracked a code!

B. EXPLORE

Many amazing codes have been used throughout history.
Code: a system of signals, letters, numbers, or symbols used to send messages, sometimes secretly
**Culper Spy Ring Code from the American Revolution**

It may be hard for us to read this writing, but in 1778 this code was used to send secret messages to George Washington during the Revolutionary War. It has 763 numbers that are code for different words, names, and places.

---

**Morse Code**

This code was created to send messages by telegraph, which is a way to send sound messages far away through a wire. It uses short and long sounds (called dots and dashes) to represent letters, numbers, and punctuation. It was used more often in the 1800s and 1900s, including in World Wars I and II. It is not commonly used anymore.

<table>
<thead>
<tr>
<th>Letter</th>
<th>Morse Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>.-</td>
</tr>
<tr>
<td>B</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>-.</td>
</tr>
<tr>
<td>D</td>
<td>-.-</td>
</tr>
<tr>
<td>E</td>
<td>-</td>
</tr>
<tr>
<td>F</td>
<td>..</td>
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<tr>
<td>G</td>
<td>-.-.</td>
</tr>
<tr>
<td>H</td>
<td>...</td>
</tr>
<tr>
<td>I</td>
<td>..</td>
</tr>
<tr>
<td>J</td>
<td>.---</td>
</tr>
<tr>
<td>K</td>
<td>-.</td>
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<tr>
<td>L</td>
<td>.-..</td>
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<tr>
<td>M</td>
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<td>O</td>
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<tr>
<td>P</td>
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<tr>
<td>Q</td>
<td>--.-</td>
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<tr>
<td>R</td>
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<tr>
<td>V</td>
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<td>W</td>
<td>.-..</td>
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<tr>
<td>X</td>
<td>-.-.</td>
</tr>
<tr>
<td>Y</td>
<td>.-.</td>
</tr>
<tr>
<td>Z</td>
<td>.--.</td>
</tr>
</tbody>
</table>

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**Binary Code**

This is a way for computers and electronics to communicate. It is made up of two numbers: “1” and “0.” Using these numbers in different combinations, computers can talk to each other and represent data. Ever heard of a bit or a byte? A single “0” or “1” is a bit, and a group of eight “0s” and “1s” together make a byte!

---

**C. DO**

Your challenge this week: Connect to someone using a “Coded Message.”

Today, you will read some coded messages!
Use this key...  ...and try to solve these codes!

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>⌍</td>
<td>□</td>
<td>⌘</td>
<td>⌐</td>
<td>◒</td>
<td>●</td>
<td>□</td>
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<tr>
<td>H</td>
<td>I</td>
<td>J</td>
<td>K</td>
<td>L</td>
<td>M</td>
<td>N</td>
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<td>P</td>
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<td>V</td>
<td>W</td>
<td>X</td>
<td>Y</td>
<td>Z</td>
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</tr>
</tbody>
</table>

DIG DEEPER

Want to learn more about codes? You can read about the pigpen cipher, which turns a tic-tac-toe board into an easy-to-use and memorable code! [https://en.wikipedia.org/wiki/Pigpen_cipher](https://en.wikipedia.org/wiki/Pigpen_cipher)

Day 2 (Activity 2): Developing Your Code (15-20 min)

This week we’re thinking about the question: “How can we communicate with others to share our thoughts and ideas?”

Your challenge this week: Connect to someone using a “Coded Message.”

Today you will:
- Learn about Morse code
- Create your “Coded Message”

You will need:
- Paper or notebook
- Writing tool

Let’s Get Started!

A. THINK
Before telephone, television, or internet, how do you think people might have sent messages across a great distance?
B. EXPLORE

Read on to learn more about Morse code...

<table>
<thead>
<tr>
<th>International Morse Code</th>
</tr>
</thead>
</table>

Morse code is a system of sending messages that uses combinations of short (the dot) and long (the dash) sound signals to spell out messages.

- A “dot” is a short signal
- A “dash” is a long signal

Morse code is named after artist and inventor Samuel Morse, who helped invent the code more than 200 years ago.

A telegraph is a machine that turns Morse code into electrical signals and sends them across a wire. The machine on the receiving end turns these signals back into messages.

Morse code is used across languages and around the world. Anyone can use it by simply writing symbols, flashing a light, or making sounds to represent dots and dashes. Modern technology has largely replaced Morse code, but it is still used for remote or emergency situations, radio communication, and in the military.
C. DO

Keep in mind your challenge this week: Connect to someone using a “Coded Message.” Today, you will create your first draft of your “Coded Message.”

Your “Coded Message” should:
- Tell who you would like to communicate with
- Explain why it’s important to communicate with this person at this moment in time
- Include a message that can be decoded using the suggested code below, Morse code (pictured above), or by making up your own code! (If you like, you may use the “Drafting Template” handout to write out your idea.)

Be sure to save the draft of your “Coded Message” so you can work on it next time!

Drafting Template

I want to say “Hi” to: ____________________________

Because: ______________________________________
Write your message here using regular words. Remember to leave a space between words!

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

Change your message to code here! Remember to leave a space between words!

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

Day 3 (Activity 3): Evaluating the Work (15-20 min)

<table>
<thead>
<tr>
<th>This week we’re thinking about the question: &quot;How can we communicate with others to share our thoughts and ideas?&quot;</th>
<th>Your challenge this week: Connect to someone using a “Coded Message.”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Today you will:</td>
<td>You will need:</td>
</tr>
<tr>
<td>● Reflect on your progress</td>
<td>● Your work from previous activities</td>
</tr>
<tr>
<td>● Make a plan to improve your work</td>
<td>● Paper or notebook</td>
</tr>
<tr>
<td></td>
<td>● Writing tool</td>
</tr>
</tbody>
</table>

Let’s Get Started! __________________________________________________________________________________________________________
A. THINK  You’ve already created the first draft of a “Coded Message.”

Pause to look at your work because you are going to reflect and revise next.

B. EXPLORE

Look at this student’s “Coded Message” and ask:
- Is it clear who the message is for?
- Does the plan explain why it is important to communicate with that person at this moment?
- Is the coded message accurate?

C. DO

Keep in mind your challenge this week: Connect to someone using a “Coded Message.”

You already have a first draft, and today you will complete the next step of the challenge!

1. Pencils down! This is a thinking exercise!
2. Look at your work and ask:
   - Is it clear who my message is for?
   - Did I explain why it is important to communicate with this person at this moment?
   - Is my coded message accurate?

3. 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...
DIG DEEPER
Test Your Code!

Share your message and key with someone else. Can they decode your message? Why or why not? Would you change anything?

<table>
<thead>
<tr>
<th>Day 4 (Activity 4): Finalizing the Work (15-20 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>This week we’re thinking about the question: &quot;How can we communicate with others to share our thoughts and ideas?&quot;</td>
</tr>
<tr>
<td>Today you will:</td>
</tr>
<tr>
<td>● Finalize your “Coded Message”</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Let’s Get Started!

A. 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...

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

B. EXPLORE

Check out some “Coded Messages” by other students.

● What changes did this person make to their work?
● How do these changes help to make the message clearer?
● Today, you will work to finalize your “Here and Now Snapshot” to best represent your setting.
C. DO

Today, you will work to finalize your “Here and Now Snapshot” to best represent your setting.

1. Get out your first draft and any other materials from previous activities.
2. Think about your work plan.
3. Decide: Do you need a fresh piece of paper to start over? Or will you just edit your first draft to make your final draft?
4. Get to work finalizing your "Coded Message"!

Be sure to save your “Coded Message” so you can share it later!
Day 5 (Activity 5): Reflecting and Sharing (15-20 min)

| This week we’re thinking about the question:  |
| How can we communicate with others to share our thoughts and ideas? | Your challenge this week: |
| Connect to someone using a “Coded Message.” |

Today you will:
- Reflect on your “Coded Message”
- Share your “Coded Message” and its code key

You will need:
- Your finished “Coded Message” and copy of its code key

Let’s Get Started! _________________________________________________

A. THINK

Like spies of the past, could you and other people in your life communicate through more coded messages?

________________________________________________________________________________________

B. EXPLORE

Anytime we share messages, we need to be thoughtful about how they will be received.

The Coding Code of Conduct:
- Be Responsible, Respectful, and Safe when sending and sharing messages.
- For more about mindful messaging, check out this important video.
  https://www.commonsense.org/education/videos/mindful-messaging

________________________________________________________________________________________

C. DO

Now that you’ve completed your “Coded Message” it’s time to share your work with others!

Here are some ideas for connecting with others:
- Share your “Coded Message” and its code key with the person who it was intended for (or use the “Sharing” handout to get a written response)
- Share your code key with others and continue sending messages back and forth!
- Share your code key and a new message with your classroom community (if this is an option).
- Ask an adult to help you share your code key and a new message online with the #inquirEDtogether hashtag.
- Keep your “Coded Message” and its code key as a historical record that you and others can look back on later.
Please take a look at my work and fill this out.

Thank you!

This work made me… (circle one)

- think...
- feel...
- wonder...

Want to write a message back?
Use my code key to make your own message!
Additional Activities:
By examining codes used in history, from the Culper Spy Ring to the use of Morse code, and by developing your own code to communicate with friends near and far, 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: As we’ve learned this week, coding is all about identifying patterns. “Patterns” are models and/or designs that help us identify things in common with one another. To get a better understanding of patterns try thinking about all the different patterns you notice in your home. Rugs and blankets often have different patterns that repeat. What about kitchen or bathroom tiles? Maybe the bricks on the outside of your home?

Science: Think about the world we live in and the different ways we can decode and find patterns in nature. Go for a walk around the block with your family and pick a couple of leaves from different types of trees on your way. Study the veins of the leaves? What do you notice among the different leaves? Similarities? Differences? Consider journaling your findings.