

First Grade Independent Projects

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

First Grade Literacy Project: We Are All Storytellers!

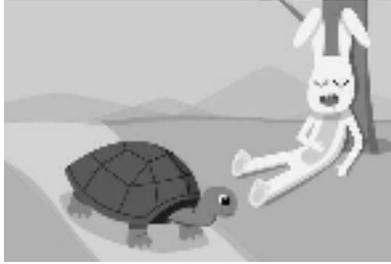
Estimated Time	Total Time 60 - 70 minutes
Grade Level Standard(s)	<p>RL./RI.1.1 Ask and answer questions about key details in a text.</p> <p>W.1.3 Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.</p> <p>W.1.5 With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed</p>
Caregiver Support Option	<p>For this project, children will learn that we are all storytellers! In order to support their learning, you can do the following:</p> <ul style="list-style-type: none"> ● Offer to listen as they read each fable to you. If they have trouble reading a word, encourage them to sound it out and reread the sentence for context clues. ● After reading, ask your learner open ended questions about the story. Here are some examples: <ul style="list-style-type: none"> ○ What do you think is the lesson of the story? Why? ○ Why do you think the character felt (insert emotion)? Why? ○ If you were the character, how would you react to (insert story event)? Why? ● Act out the stories with them! Don't forget to change your voice and get into character! ● Help your learner create their own fable. <p>If you'd like to find additional fables and folktales to read with your learner, check out readinga-z.com.</p>
Materials Needed	<ul style="list-style-type: none"> ● Blank writing paper ● Pencil or other writing utensil ● Crayons/markers/colored pencils ● Scissors
Question to Explore	<p>What is a fable? What is a folktale? How are fables and folktales from different places similar and different? How could changing a fable or folktale's ending change its meaning or lesson?</p>
Student Directions	See activities below for instructions.

Activity 1: Let's Read! - The Lion and the Mouse

A. What is a fable?



A fable is a story written to teach a lesson.



Fables usually have animals as the main characters, and the animals often have human characteristics. This is called **personification**.



Fables come from different cultures around the world.

B. Read *The Lion and the Mouse* below.

The Lion and the Mouse - Greece (via readinga-z.com)

Retold by Harriet Rosenbloom

Illustrated by Lauren Gallegos



Lion lay asleep on a sunny afternoon. Mouse was hurrying home through the tall grass.



She stumbled upon Lion and woke him. Lion trapped Mouse under his huge paw.



He lifted her by the tail. He swung her slowly through the air. "An afternoon snack," Lion said. "Delightful."



Mouse felt his hot breath on her fur. She was so scared. Her voice was just a squeak. "Spare me," she cried, "and one day I will help you in return."



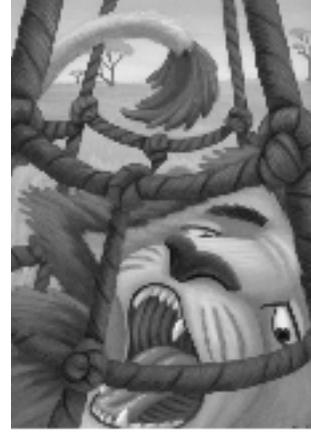
Lion laughed loudly. Mouse trembled. "You, help me?" he laughed. "You are a funny little one."



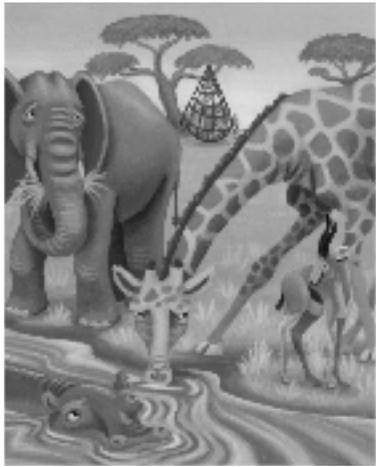
Still, he let Mouse go. He soon dozed off again under the hot sun. Mouse dashed home. She was happy to be alive.



The day came when Lion stepped into a hunter's net. He was trapped. Lion struggled. The net pulled tighter.



Lion roared in anger. Then he roared in fear.



His loud roar carried in every direction. Many animals heard him. None came to help.



None dared to free Lion, except Mouse. Mouse ran to Lion's side. She found him in the trap. Mouse chewed away the net with her sharp little teeth.



Before long, Lion was free. Lion shook off the ropes.



He looked deep into Mouse's eyes. "Thank you, little friend," Lion said. "You are most welcome, big friend," Mouse replied. "What you give is what you get."



Mouse's words still hold true today. What is just as true? That even a little mouse can help a mighty lion.

C. Now it's time to retell the story. Cut apart the parts of the story below. Then put them in order from beginning to end, retelling the story as you go. If you get stuck, reread the story above.
(Optional: If you don't have scissors at home, you can also number each part of the story 1-4).



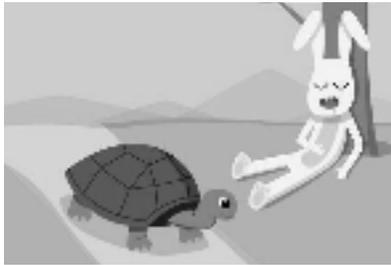
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Activity 2: Let's Read! - The Drum

A. What is a folktale?



A folktale is a story that is usually passed down from generation to generation through storytelling.



Folktales usually have a problem and solution, and could have people or animals as characters



Like fables, folktales come from different cultures around the world.

B. Read *The Drum* below.

The Drum - India (via readinga-z.com)

Retold by Katherine Follett

Illustrated by Teresa Martinez



Once there was a poor boy who lived with his mother in India. More than anything else, the boy wanted a drum.



One day, Mother gave the boy a stick.



The boy tapped on everything with his stick.



As he was tapping along, he saw a woman struggling to light her stove. "Take this stick to light your stove," he said.



The woman gave the boy some bread as thanks. Then, the boy heard a hungry baby crying.



"Take this bread," the boy said to the baby's mother.



The mother gave the boy a large jug as thanks. Then, the boy saw an old man lying in the dirt.



The boy filled the jug with water for him. The man said that robbers stole his goods.



"Take this jug to sell," the boy said. The man gave the boy one of his horses as thanks.



The boy rode down the street. He saw a sad man and some musicians. The man had no horse to ride to his wedding.



"Take this horse!" the boy said as he hopped off. The musicians gave the boy a drum as thanks.



The boy shouted with joy and banged on his drum. Later, the boy told Mother the whole story.



"When you are kind, your good deeds come back to you," Mother said. It was a lesson the boy never forgot.

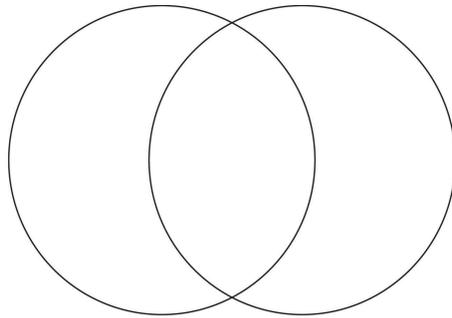
C. Now it's time to retell the story. Cut apart the parts of the story below. Then put them in order from beginning to end, retelling the story as you go. If you get stuck, reread the story above.
(Optional: If you don't have scissors at home, you can also number each part of the story 1-4).



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Activity 3: Let's Write!

- A. On a blank piece of paper, create a Venn diagram to answer the following questions (see an example of a Venn diagram below):
- How are the two stories (*The Drum* and *The Lion and the Mouse*) similar? How are they different?



Activity 4: Let's Design!

- A. Now it's time to write your own story! Remember, fables are supposed to teach a lesson and usually include **personification**, or animal characters who act like humans. Folktales also teach a lesson, but the main characters can be humans or animals. If you get stumped, ask yourself these questions:
- What lesson do I want my story to teach? What is something that I wish that everyone knew? (for example, your story's lesson might be that people should always ask before taking something)
 - How will I teach this lesson? What will happen in the beginning, middle, and end of my story?
 - What will my characters be like? Will they be kind, generous, greedy, clever, or something else?
- B. Once you've planned out your story, it's time to write. Don't forget to add details to your words and pictures!

Activity 5: Let's Move!

- A. Pick one story--it could be the story you wrote or one of the two you read earlier. Find a partner, gather your props, and act it out! Don't forget to use your voice and your body to sound and act like the characters.

Activity 6: Reflection

- A. On a blank piece of paper, answer the following questions:
- Which story was your favorite to read? Why?
 - If you could change the ending of one of the stories, what would you change? Why?

Cross-Content Connection

Social Science - Look up India and Greece on a map. Ask someone you live with what they know about India and Greece. If you'd like to learn more, search for books about India and Greece on the CPS Virtual Library (library.cps.edu).

Art - What is something kind you can do for someone else? Draw a picture and write about it.

First Grade Math Project: Numbers, Numbers, Numbers

Estimated Time	Total Time 60 - 70 Minutes
Grade Level Standard(s)	<p>Operations and Algebraic Thinking 1.OA.A: Represent and solve problems involving addition and subtraction. 1.OA.B: Understand and apply properties of operations and the relationships between addition and subtraction.</p> <p>Number and Operations in Base Ten 1.NBT.A: Extending the counting sequence 1.NBT.B: Understand place value. 1.NBT.C: Use place value understanding and properties of operations to add and subtract.</p> <p>Measurement and Data 1.MD.A: Measure lengths indirectly and by iterating length units.</p>
Caregiver Support Option	Adult supervision and participation is required. Read and explain directions for activities. Assist with selecting various household items. Supervise and/or assist with cutting numbers apart. Provide ziploc bag or envelope to store numbers in.
Materials Needed	2 Sets of Number Cards, Place Value Chart, Addition and Subtraction Cards, Ruler, Paper, Pencil, Hundreds Chart
Question to Explore	<p>What patterns do you notice on the various numbers' chart?</p> <p>How many ones, tens, and/or hundreds are in the numbers you represented?</p> <p>Which one is greater and/or less than the other one?</p> <p>Which objects measured the same, were longer and/or shorter length?</p>
Student Directions	Each activity has directions to follow.

Hundreds Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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Cut number cards apart and use them for Place Value and Addition and Subtraction activities.

0	1	2	3	4
5	6	7	8	9

0	1	2	3	4
5	6	7	8	9

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Day 1

Sequencing Fun:

Have your child put the following numbers in order. Your child can use the Hundreds Chart for support, if needed.

48, 50, 23 _____ _____ _____

27, 19, 31 _____ _____ _____

64, 87, 78 _____ _____ _____

52, 35, 42 _____ _____ _____

84, 92, 73 _____ _____ _____

Have your child close their eyes and point to a number on the hundreds chart. Have your child write down that number. Repeat this two times. Have your child put the three numbers in order from lowest to highest. For example, your child pointed to 34, 18, and 87. Your child puts them in order 18, 34, 87. Repeat this activity, but have your child put the numbers in order from highest to lowest. For example, your child pointed to 93, 25, and 54. Your child puts them in order 93, 54, 25.

Day 2

Sequencing Fun:

Have your child complete the sequence of numbers below. Your child can use the Hundreds Chart for support, if needed.

8	7		5		3		2
---	---	--	---	--	---	--	---

16		18	19			22	
----	--	----	----	--	--	----	--

38		36	35				31
----	--	----	----	--	--	--	----

67	68			71		73	
----	----	--	--	----	--	----	--

88		86	85		83		
----	--	----	----	--	----	--	--

Day 3

Sequencing Fun:

Have your child fill in the missing numbers from sections of the Hundreds Chart. Your child can use the Hundreds Chart for support, if needed.

4		6
14	15	
	25	

28	29	
	39	
		50

	55	56
64		66
	75	

		79
	88	
97		

On paper, create four more sections of the Hundreds Chart for your child to fill in. Have your child create two more sections for you to complete!

Day 4

Adding and Subtracting Numbers:

* Your child can use the Hundreds Chart for support, if needed.

Our friends brought apples to the farm to feed the horses.

Mark brought 2 apples. Nancy brought 3 apples. Otis brought 4 apples. Parker brought 5 apples. Sara brought 6 apples.

How many apples did Nancy and Sara bring in all? Show how you figured it out.

_____ apples

How many apples in all? Show how you figured it out.

_____ apples

There are 12 horses in the red barn and 18 horses in the green barn.

How many horses are there in all on the farm? Show how you figured it out.

_____ horses

How many more horses are in the green barn than the red barn? Show how you figured it out.

_____ horses

Day 5

Adding and Subtracting Numbers:

Using counters (i.e., beans, pennies, buttons), paper, and pencil, have your child solve the problem below.

Bo bought 20 tickets to play games at Family Fun Night at his school. He wants to play each game at least once. He needs to use all of his tickets. How many times might he play each game? Find at least two ways Bo can do it.

Game	Number of Tickets Needed
Ring Toss	1
Mini Golf	2
Soccer Kick	3
Bouncy House	5

Day 6

Adding and Subtracting Numbers:

Using the Number Cards, have your child pull out the 2 and 7. Have your child make the number 27 with the cards.

Ask your child:

- How many groups of ten are there in this number? (2)
- How many ones? (7)
- How do you know?

Have your child use the 2 and 7 to make another number (72).

Ask your child:

- How many ones are there in this number? (2)
- How many tens? (7) How do you know?
- Which number is larger? 27 or 72? Explain how you know.

Repeat this activity 2 more times having your child choose different Number Cards.

Day 7

Place Value Fun:

Using the Hundreds Chart, have your child identify and share five patterns observed. (For example, numbers in the right column all have a zero).

Give your child a number between 1-89 and have him/her tell you the next ten numbers (using the Hundreds Chart for support as needed). Repeat this activity 3-5 times.

Day 8

Place Value Fun:

Using the Hundreds Chart, play Guess My Number. Think of a number between 1-30. Your child will try to guess the number. After every guess, tell your child whether your number is greater or less than their number.

For example, your number is 15. Your child guesses 20. You tell your child that your number is less than 20. Talk about what numbers can't be your number (the numbers 20-30). You can use pennies, beans, buttons, etc. to cover the numbers that aren't the one you picked. Continue having your child give you guesses until he/she guesses your number - 15. Play this game 1-2 times.

Day 9

Place Value Fun:

Your child will make five numbers between 11 - 99 using the Number Cards and Place Value Chart below. Have your child choose one Number Card and place it in the Tens column in the chart below. Have your child choose another Number Card and place it in the Ones column in the chart below. Have your child say the name of the number. Have your child find this number on the Hundreds Chart. For example, your child selects the numbers 7 and 6. Your child puts the 7 in the Tens column and the 6 in the Ones column. Your child says 76 and finds 76 on the Hundreds Chart.

Extension Activity: Have your child complete the activity above two times then add the two numbers made on the Place Value Chart. For example, your child makes 34 and 26. Using paper and a pencil have your child write and solve the addition problem $34 + 26 =$ or subtraction problem $34 - 26 =$. Repeat activity writing addition and or subtraction sentences. Have your child use the Hundreds Chart for additional support.

Tens	Ones

Day 10

Reflection:

Find a pattern in the Hundreds Chart, i.e., the second column of numbers (2, 12, 22, 32, etc.) all end in with a 2. Ask your child what the pattern is. Find 3 more patterns in the Hundreds Chart and have your child tell you what the pattern is.

Using the Hundreds Chart, have your child select any number between 20 and 92. Have your move forward four numbers on the chart and say what the number is. Have your child go back to the original number and move back four numbers and say what the number is. For example, the number selected is 76. When adding four numbers to 76, the number is 81. Go back to 76. When subtracting four from 76, the number is 72). Complete the same activity 3-5 times.

Ask your child:

- What did you enjoy about doing these activities? Why?
- What other ways could you use the Hundreds Chart?

Cross Content Connections:

ELA - drawing pictures and write the names of selected objects; writing numbers; naming the household items selected and telling what they are used for

Social Studies - gathering information from one or two sources with guidance and support from adults

Physical - use of fine motor skills (using fingers for counting, if needed, and cutting out the number cards

Illustrative Mathematics - <https://tasks.illustrativemathematics.org/content-standards>

- The Very Hungry Caterpillar
<http://tasks.illustrativemathematics.org/content-standards/1/OA/A/2/tasks/1150>
- Roll & Build
<http://tasks.illustrativemathematics.org/content-standards/1/NBT/B/2/tasks/987>

Open Middle - <https://www.openmiddle.com/>

- Adding Numbers - <https://www.openmiddle.com/adding-numbers/>
- Open Number Line - <https://www.openmiddle.com/open-number-line/>



First Grade Science Project: Biomimicry Engineering

Estimated Time	Total Time 60 - 70 minutes
Grade Level Standard(s)	<u>1-LS1-1</u> . Engineering: Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.*
Caregiver Support Option	Support may be needed for the following: <ul style="list-style-type: none"> • Reading aloud directions and passages. • Engaging in discussions with the students around the questions embedded in this project (siblings and other members of the household can be engaged in the dialogue as well). • Collection of materials and using scissors. • Serving as the audience for the final project presentation
Materials Needed	Pencils, crayons, markers or colored pencils Suggested household craft materials: cardboard, paper, paper grocery bag or lunch bag, craft sticks, paper roll tubes, toothpicks, straws, string, yarn, rubberbands, bowl etc.
Question to Explore	What is the function of different animal structures/parts? What is the function of different plant structures/parts? How can we use what we learn about animal and plant structures and their functions to solve a problem in our everyday lives?
Student Directions	Each activity has directions for you to follow.

Activity One: My Initial Ideas (10min)

Instructions: Look at the images below and answer the questions.

<p><u>Plant</u></p> <ul style="list-style-type: none"> • What do you think this plant needs to live and grow? • How do you think this plant protects itself from being eaten by animals? 	<p><u>Animal</u></p> <ul style="list-style-type: none"> • What do you think this animal needs to live and grow? • How do you think this animal protects itself from being eaten by other animals?
<p>rose</p> 	<p>turtle</p> 

Activity Two: Inventions Based on Plants (10 min.) (Adapted from Betterlessons.com)

Instructions: Did you know that engineers use their observations of plants to give them ideas for the inventions they come up with for people?

- A. Observe (look at) the 3 plants below. What do you notice? What do you wonder?
- B. Draw a line connecting each invention to the plant to which you think it is most similar.
- C. How is the plant similar to the invention to which you connected it?

Plants

Burr



Cactus



Tree



Inventions

Umbrella



Velcro



Sword



Activity Three: Plant and Animal Defenses (20 min.)

Instructions: First, read the story below about Spot the dog. Then, read about camouflage, shells, and spikes to get ideas for how to help Spot with his problem and answer the questions.

The Story of Spot the Dog

Cameron was playing in the backyard when he noticed a bird eating out of his neighbor's dog food bowl. Spot, his neighbor's dog, was not happy. Spot was running around chasing birds away from his bowl all morning. Cameron decided he wanted to come up with a solution to help Spot with his bird problem. How do you think we can help Spot?



Read about how plants and animals defend themselves to get ideas about how you might invent something to help Spot the dog with protecting his food from the birds.

Spikes, Spines and Shells: A Handbook of Defenses

Source: [Amplify Science \(Spanish\)](#)

Defense 1: Camouflage

Some animals and plants are hard to see because they blend in. This is called camouflage. Camouflage is a good defense. When an animal or plant has camouflage, it is hard to find. If predators can't find an animal, they can't eat it.



An Example of Camouflage: Lava Lizards

Lava lizards are small animals with scales. They live on rocks and sand near the sea.

What Is Their Defense?

The color of a lava lizard's skin helps it blend in so predators can't see it. Lava lizards that live mostly on black rocks are dark colored. Lava lizards that live mostly on white sand are light colored.



Defense 2: Shells and Armour

Some plants and animals have shells or armor for defense. It is hard for a predator to bite through a shell. Shells and armor help keep plants and animals from being eaten.



An Example of Shells and Armour: Sally Lightfoot Crabs

Sally Lightfoot crabs are brightly colored crabs. They live near the sea. They hide between rocks.

What Is Their Defense?

Sally Lightfoot crabs have hard shells. It is not easy to bite through their shells.



Defense 3: Spikes and Spines

It is easy to see how spikes and spines are defenses. These sharp parts make some plants and animals hard to eat. Predators may stay away from an animal with spikes.



An Example of Spikes and Spines: Puffer Fish

Puffer fish are fish that live in the sea all around the world.

What Is Their Defense?

When puffer fish see or hear predators, they puff up. They have hard, sharp spines all over that stick out when they puff up. Puffer fish are much bigger when they puff up!



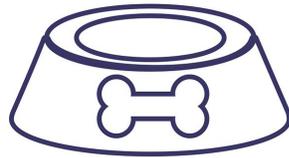
Questions (write or draw your answers on another sheet of paper):

1. How might spikes help defend Spot's dog food from the birds?
2. How could camouflage be used as a defense to stop the birds from getting the food?
3. Name two items, like toys or other items in your house that have covers that remind you of shells and armor?

Activity Four: Design a Solution for Spot's Problem (20-30 min.)

Write: What is the problem you are trying to solve? Explain it in your own words.

Design: Draw and label your design solution.



Create: Gather a bowl and materials from around your home to create your design solution.

Write or draw your materials here:

Which plant and animal defenses does your design use?

- camouflage shells or armour spikes or spines

Explain:

Tell someone in your home about your design and how it protects Spot's food from the birds. Cut out and use the bird on the next page to help you explain how your solution works.

- What problem did you solve?
- What plant or animal defenses did you use to design your solution?
- How and why does your solution protect Spot's food from the birds?

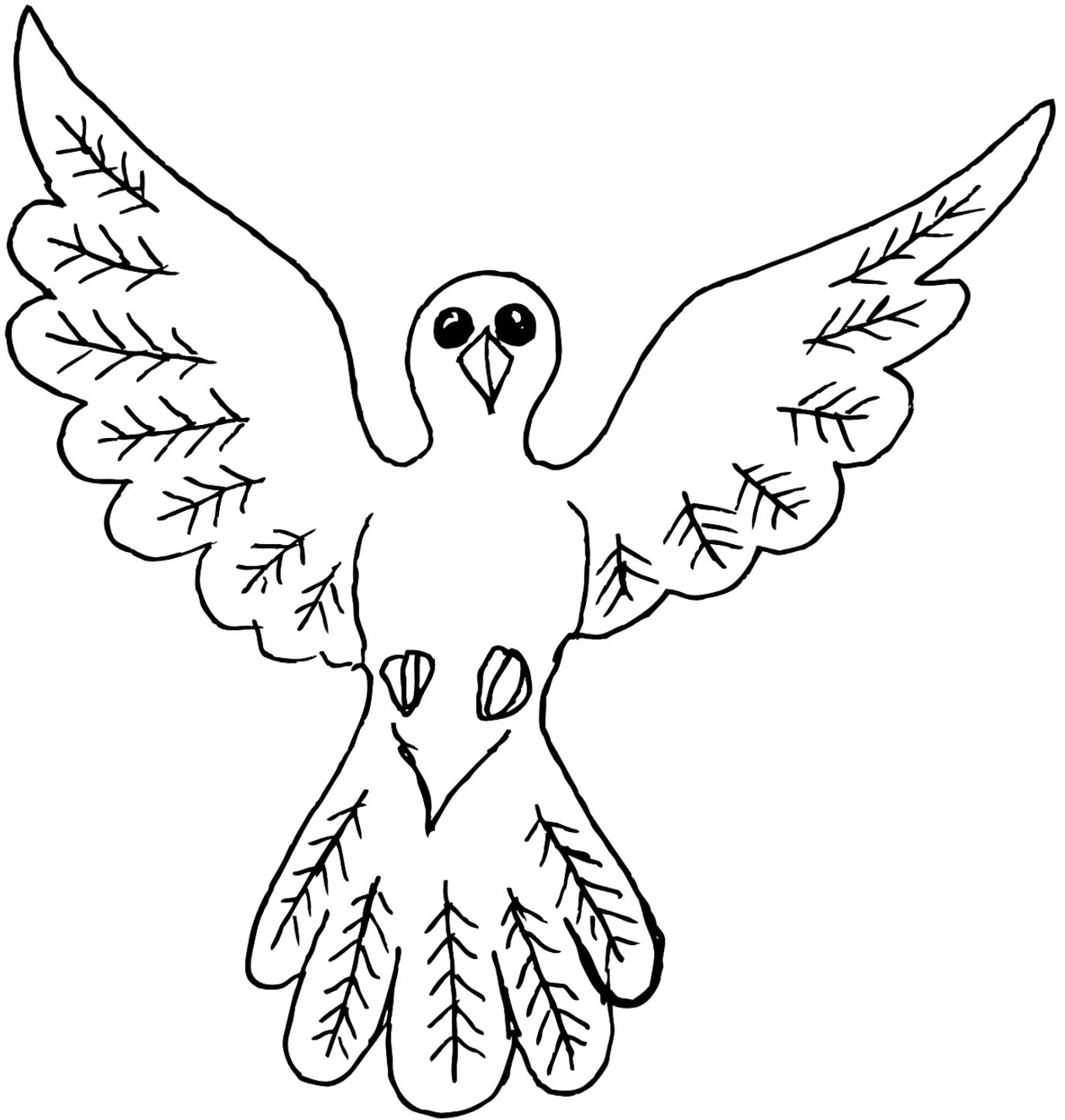
Revise:

What could you do to make your solution even better?

Evaluate:

How happy are you with your solution?





Grade K-2 Social Science Project: Together when Apart

Estimated Time	Total Time 60 - 70 minutes
Grade Level Standard(s)	<p>SS.IS.2.K-2. Explore facts from various sources that can be used to answer the developed questions.</p> <p>SS.IS.3.K-2. Gather information from one or two sources with guidance and support from adults and/or peers.</p> <p>SS.IS.4.K-2. Evaluate a source by distinguishing between fact and opinion.</p> <p>SS.IS.5.K-2. Ask and answer questions about arguments and explanations.</p>
Caregiver Support Option	<p>Notes on the structure:</p> <ul style="list-style-type: none"> • Activities are designed to be done in order - each one builds on the other so you should no skip activities • Activities are an average of 15-20 mins each. More than one can be done in a day. <p>Before giving the activities to students, caregivers might:</p> <ul style="list-style-type: none"> • 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 <p>In this particular lesson, it's important to note that:</p> <ul style="list-style-type: none"> • student(s) are developing coded messages, you might want to review the directions and the "Coding Code of Conduct" on p. 11 • 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. 10 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?

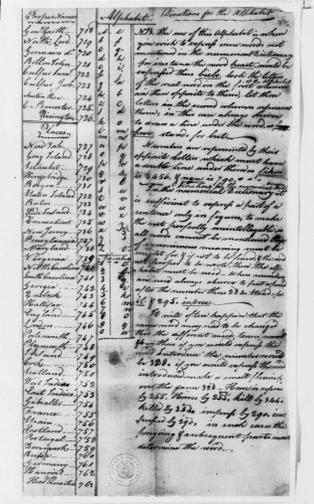


Guess what? You just cracked a code!

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

	<h3>Culper Spy Ring Code from the American Revolution</h3> <p>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.</p>																																																																																
<h3>International Morse Code</h3> <ol style="list-style-type: none">1. The length of a dot is one unit.2. A dash is three units.3. The space between parts of the same letter is one unit.4. The space between letters is three units.5. The space between words is seven units. <table border="0"><tbody><tr><td>A</td><td>• —</td><td>U</td><td>• • • —</td></tr><tr><td>B</td><td>• • • —</td><td>V</td><td>• • • • —</td></tr><tr><td>C</td><td>• — • •</td><td>W</td><td>• — • •</td></tr><tr><td>D</td><td>• — • —</td><td>X</td><td>• — • —</td></tr><tr><td>E</td><td>•</td><td>Y</td><td>• — • — •</td></tr><tr><td>F</td><td>• • • •</td><td>Z</td><td>• — • • •</td></tr><tr><td>G</td><td>• • • • •</td><td></td><td></td></tr><tr><td>H</td><td>• • • • • •</td><td></td><td></td></tr><tr><td>I</td><td>• •</td><td></td><td></td></tr><tr><td>J</td><td>• — • — • —</td><td></td><td></td></tr><tr><td>K</td><td>• — • •</td><td>1</td><td>— • — • — • —</td></tr><tr><td>L</td><td>• — • • •</td><td>2</td><td>• • • — • — • —</td></tr><tr><td>M</td><td>• — • — • —</td><td>3</td><td>• • • — • — • — • —</td></tr><tr><td>N</td><td>• — • —</td><td>4</td><td>• • • • — • — • —</td></tr><tr><td>O</td><td>• — • — • —</td><td>5</td><td>• • • • • — • — • —</td></tr><tr><td>P</td><td>• — • — • — • —</td><td>6</td><td>• • • • • • — • — • —</td></tr><tr><td>Q</td><td>• — • — • — • — • —</td><td>7</td><td>• • • • • • • — • — • —</td></tr><tr><td>R</td><td>• — • — • — • —</td><td>8</td><td>• • • • • • • • — • — • —</td></tr><tr><td>S</td><td>• — • — • —</td><td>9</td><td>• • • • • • • • • — • — • —</td></tr><tr><td>T</td><td>• — • —</td><td>0</td><td>• • • • • • • • • • — • — • —</td></tr></tbody></table>	A	• —	U	• • • —	B	• • • —	V	• • • • —	C	• — • •	W	• — • •	D	• — • —	X	• — • —	E	•	Y	• — • — •	F	• • • •	Z	• — • • •	G	• • • • •			H	• • • • • •			I	• •			J	• — • — • —			K	• — • •	1	— • — • — • —	L	• — • • •	2	• • • — • — • —	M	• — • — • —	3	• • • — • — • — • —	N	• — • —	4	• • • • — • — • —	O	• — • — • —	5	• • • • • — • — • —	P	• — • — • — • —	6	• • • • • • — • — • —	Q	• — • — • — • — • —	7	• • • • • • • — • — • —	R	• — • — • — • —	8	• • • • • • • • — • — • —	S	• — • — • —	9	• • • • • • • • • — • — • —	T	• — • —	0	• • • • • • • • • • — • — • —	<h3>Morse Code</h3> <p>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 make letters and numbers. It was used more often in the 1800s and 1900s.</p>
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	<h3>Binary Code</h3> <p>This is a way for computers and electronics to talk to each other. It is made up of two numbers: "1" and "0." Putting these numbers together in different ways is how computers send messages and information.</p>																																																																																

C. DO:

Your challenge this week: **Connect to someone using a “Coded Message.”**
Today, you will read some coded messages!

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

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: <ul style="list-style-type: none">• Learn about Morse code• Create your “Coded Message”	You will need: <ul style="list-style-type: none">• 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

OPTIONAL: Watch the video to hear each letter of the alphabet in Morse code, one of the most famous codes in the world! https://www.youtube.com/watch?v=6PRY-LczCB4&feature=emb_title

Read on to learn more about Morse code.



Morse code is named after Samuel Morse, who helped invent it more than 200 years ago.



A telegraph is used to make and send the sounds used in Morse code.



People everywhere can use Morse code. It can be as easy as flashing a light or making sounds to represent the dashes and dots that make each letter.

C. DO

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

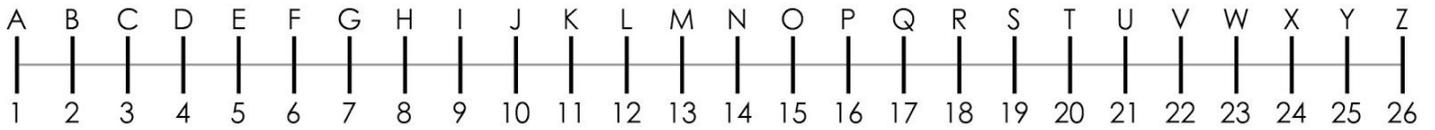
Today, you will create your first draft of your “Coded Message.”

Your “Coded Message” should:

- Tell who you would like to communicate with
- Explain why it's important to communicate with this person
- Include a message that can be decoded using the suggested number line code below or by making up your own code! (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!

Number Line Code:



Make Your Own Code:

A	B	C	D	E	F	G

H	I	J	K	L	M	N

O	P	Q	R	S	T	U

V	W	X	Y	Z

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)

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 progress
- Make a plan to improve your work

You will need:

- Your work from previous activities
- Paper or notebook
- Writing tool

Let's Get Started! _____

A. THINK

You've already created the first draft of a "Coded Message."
Pause to look at your work.

B. EXPLORE

<p>...you prefer, you can download a PDF packet including all of this week's materials!</p> <p style="text-align: center;">DAY 2 Drafting Template</p> <p>Say "Hi" to someone in a secret code!</p> <p>I want to say "Hi" to: <u>My cousin</u></p> <p>Because: <u>I miss him</u></p> <p>First, write the person's name in the TOP ROW of boxes below. Write one letter per box and leave a space between words.</p> <table border="1" style="width: 100%;"><tr><td>H</td><td>I</td><td></td><td>S</td><td>A</td><td>M</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td>9</td><td></td><td>19</td><td>1</td><td>18</td><td>21</td><td>5</td><td>21</td><td></td><td></td><td></td><td></td></tr></table> <p>Next, use a key to write your message in code in the BOTTOM ROW of boxes.</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	H	I		S	A	M	V	E	L					8	9		19	1	18	21	5	21					<p>Look at this student's "Coded Message" and ask:</p> <ul style="list-style-type: none">● Is it clear who the message is for?● Does the plan explain why they want to send a message to that person?● Is the coded message accurate using the code key below?
H	I		S	A	M	V	E	L																			
8	9		19	1	18	21	5	21																			

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 I want to send a message to this person?
 - 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?

Day 4 (Activity 4): Finalizing the Work (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: <ul style="list-style-type: none">● Finalize your “Coded Message”	You will need: <ul style="list-style-type: none">● Your work from previous activities● Paper or notebook● Writing tool

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:

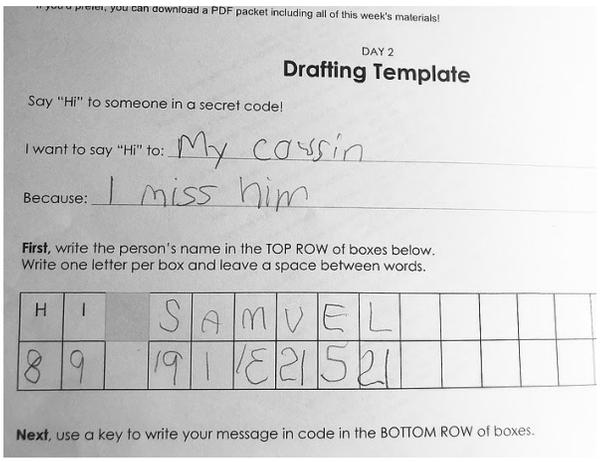
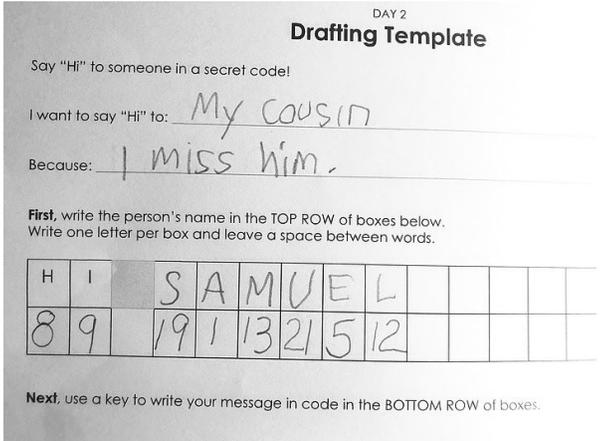
What will you do next to finalize your work?

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?

 <p>DAY 2 Drafting Template</p> <p>Say "Hi" to someone in a secret code!</p> <p>I want to say "Hi" to: <u>My cousin</u></p> <p>Because: <u>I miss him</u></p> <p>First, write the person's name in the TOP ROW of boxes below. Write one letter per box and leave a space between words.</p> <table border="1" data-bbox="126 793 704 890"><tr><td>H</td><td>I</td><td></td><td>S</td><td>A</td><td>M</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td>9</td><td></td><td>19</td><td>1</td><td>13</td><td>2</td><td>15</td><td>2</td><td></td><td></td><td></td><td></td></tr></table> <p>Next, use a key to write your message in code in the BOTTOM ROW of boxes.</p>	H	I		S	A	M	V	E	L					8	9		19	1	13	2	15	2					<p>First Draft</p>
H	I		S	A	M	V	E	L																			
8	9		19	1	13	2	15	2																			
 <p>DAY 2 Drafting Template</p> <p>Say "Hi" to someone in a secret code!</p> <p>I want to say "Hi" to: <u>My cousin</u></p> <p>Because: <u>I miss him.</u></p> <p>First, write the person's name in the TOP ROW of boxes below. Write one letter per box and leave a space between words.</p> <table border="1" data-bbox="126 1247 704 1344"><tr><td>H</td><td>I</td><td></td><td>S</td><td>A</td><td>M</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td>9</td><td></td><td>19</td><td>1</td><td>13</td><td>2</td><td>15</td><td>12</td><td></td><td></td><td></td><td></td></tr></table> <p>Next, use a key to write your message in code in the BOTTOM ROW of boxes.</p>	H	I		S	A	M	V	E	L					8	9		19	1	13	2	15	12					<p>Final Draft</p>
H	I		S	A	M	V	E	L																			
8	9		19	1	13	2	15	12																			

C. DO

Today, you will work to finalize your "Coded Message" 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.common sense.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:

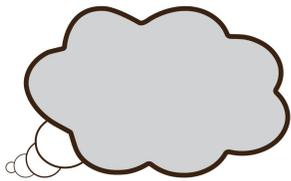
- Share your "Coded Message" and its code key with the person who it was intended for (or use the "Sharing" handout to get a written response)
- Share your code key with others and continue sending messages back and forth!
- Ask an adult to help you share your code key and a new message online with the #inquirEDtogether hashtag.
- Keep your "Coded Message" and its code key as a historical record that you and others can look back on later.

Sharing

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 are 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.