

Standards-Aligned
Discussion & Activity Guide for
Grades PK-1

Bears Make the Best Math Buddies

ISBN-10: 1684460794
ISBN-13: 978-1684460793

Written by Carmen Oliver

Illustrated by Jean Claude

Published by Capstone Young Readers

Adelaide doesn't have a math buddy, but she's not worried. She can always count on her best friend, Bear, who is a math whiz. If only Adelaide can convince Mrs. Fitz-Pea that Bear is the perfect math buddy, everything will add up.

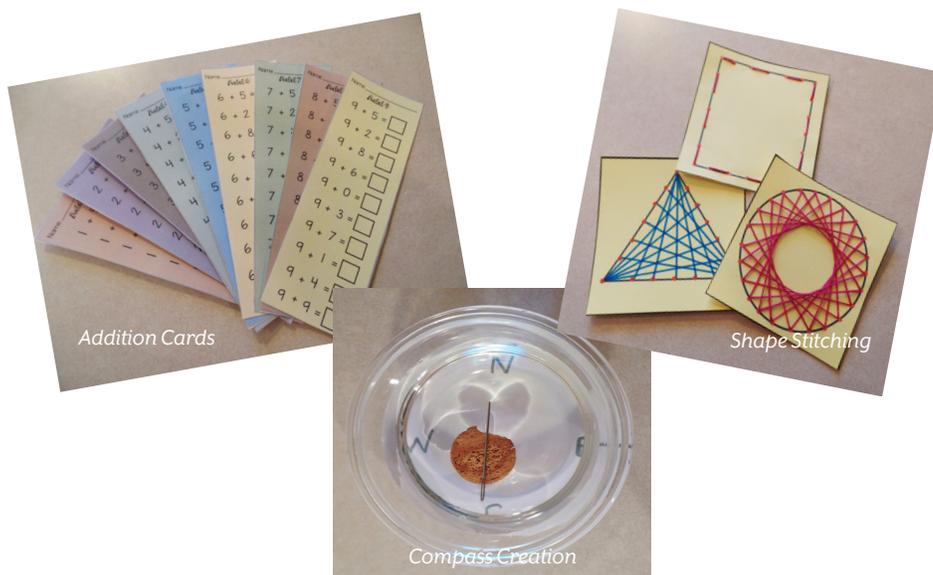
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Projects In This Guide



Pre-Reading Discussion

Consider the cover of the book:

- Describe the expression on the bear's face. Identify clues that suggest how he feels about the girl.
- Study the expressions on the girl's face. Predict how she is feeling. Explain why she is reaching for the star.
- Determine why the girl is riding on the bear's shoulders.
- Define the word *buddies*. Are the bear and the girl buddies? How do you know?
- Identify the symbols decorating the bear's sweater. Make a connection between the symbols on the bear's sweater and the title of the book.
- Predict what this book is going to be about.



Meet the Author—Carmen Oliver:

- Author's love language. Consider the connection between creativity and the use of language. Explain how authors express their creativity through the use of words and writing.
- On her website, Carmen expresses her passion for literacy for young people. She feels that it is critical for kids learn to love to read. Discuss how writing a book like BEARS MAKE THE BEST MATH BUDDIES can help young readers learn to both enjoy reading, while exploring mathematical concepts.
- Learn more about Carmen's work and life by accessing her website at carmenoliver.com.



Meet the Illustrator—Jean Claude:

- Illustrators tell stories with pictures. Study the illustration on the book cover. What is the story being told in that picture?
- In efforts to add more depth to the the stories their pictures tell, illustrators do research. On his website, Jean Claude says that he enjoys spending time going to the zoo to discover inspiration. Consider how spending time at the zoo can serve as research opportunities for Jean Claude.
- Notice the effect spending time at the zoo has on Jean Claude's art by accessing his illustrator page advocate-art.com/jean-claude.



Post-Reading Discussion

“Bears make the best math buddies,” said Adelaide. “It’s a simple fact. They know how to put one paw in front of the other and measure any distance.”

- The word *diligent* means to be hard-working and to keep trying. Explain how developing skills in math requires a student to be diligent.
- Talk about your connection with math. Are there some math skills that come easy to you? Are there areas that trouble you? Maybe, frustrate you? Explain your answer.
- What does having a buddy mean to you?
- Describe the benefits of having a buddy to help understand mathematical concepts.
- The phrase “put one paw in front of the other” means to never quit trying. Discuss why it is important to keep trying when solving math problems.

“Bears make the best math buddies because they know that not every answer comes easily. Sometimes you have to make a few mistakes, turn over a few rocks, and really dig deep to discover the solution.”

- The word *challenge* means to face a problem. The word *solution* means the answer. Make a connection between the two words – challenge and solution.
- Consider how Adelaide and Bear face math challenges together.
- Discuss why it is important to keep turning “over a few rocks.” What does that phrase mean to you?
- Tell of a time that you had to “really dig deep” to discover a solution to a problem. Did you have a buddy there to help? Describe the feeling you had in that situation.

“... They spring into action and ROARRR! Because they knew you could do it all along.”

- The word *confidence* means to be bold, to have courage, and to believe in yourself. Make a connection between being bold and learning math skills. Identify times in the story that Adelaide and Bear were bold when it came to solving math problems.
- To have courage requires to face one’s fears, even when doing so is difficult to do. Discuss a scene in which Adelaide and Bear demonstrated courage when it came developing math skills.
- In the end, Adelaide and Bear showed that they believed that they could face math problems with confidence. How about you? Discuss a time when you felt confident enough to ROARRR about your math skills. If not, identify a buddy that can help you to diligently face your challenges. Together is always better.



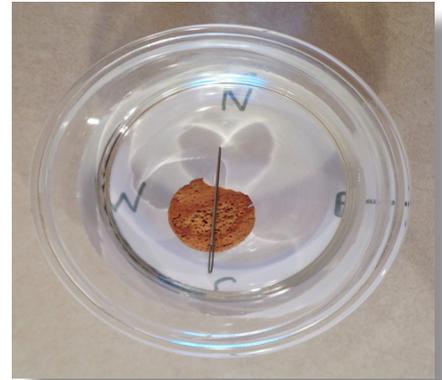
The Water Compass

“Of course, they never get turned around. They know north is at 12 o’clock, east is at 3 o’clock, south is at 6 o’clock, and west is at 9 o’clock.”

Objectives: To explore the cause and effect relationship of a magnetized object and the environment.

Materials:

- A needle
- A magnet
- A small glass bowl
- A piece of cork (a small slice of a larger cork)
- A piece of cardstock
- Water
- Pencil
- Markers
- Scissors



Procedure:

- Using the pencil, piece of cardstock, and small glass bowl, trace around the base of the bowl. Using scissors, trim around the traced border.
- Using a marker, create a compass guide by labeling the circular piece of cardstock in with N for north, E for east, S for south, and W for west. Use the illustration on the right as a reference.
- Place the glass bowl on top of the paper compass. Fill the glass bowl half full with water.
- Float the cork on the water’s edge.
- Stroke magnet on the pointed end of the needle in an outward motion. Avoid rubbing the magnet back and forth on the needle. Keep moving the magnet toward the point of the needle. Repeat this motion for 15 to 20 times.
- Gently place the magnetized needle on the floating cork. Observe as the sharp point of the magnetized needle settles in one direction, which is North.
- Shift the paper compass guide under the glass bowl so that the sharp point of the needle aligned with the N.
- Congratulations! You have made a water compass!
- Repeat the process to make a watch much like the one featured in the book. Simply create a clock face by labeling the circular guide with 12, 3, 6, and 9.



Fun Fact! *A compass always points north because Earth’s iron core creates a magnetic field that attracts the compass needle to the North Pole.*



The Water Compass: An Essay

*Write and illustrate an informative essay describing the experience of creating a compass.
Explain what happened as a result of the experiment and why.*



Shape Stitching

“Bears make the best math buddies because they have great imaginations. As the clouds drift by, they see every shape and every size from every angle. Circles, triangles, squares, and rectangles.”

Objective: To analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts and other attributes.

Materials:

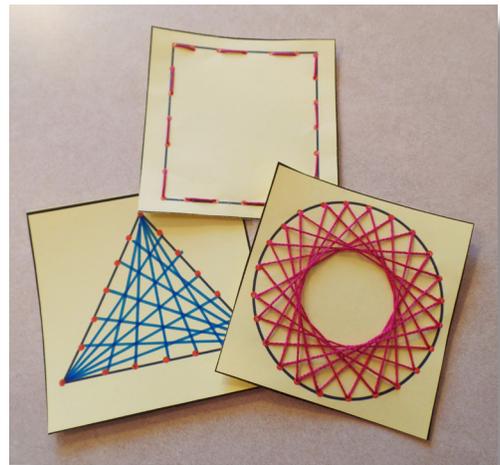
- Geometry String Art Templates (Guide, pgs. 8-9)
- Cardstock
- Scissors
- Craft thread
- Large-eyed needle
- Tape

Procedure:

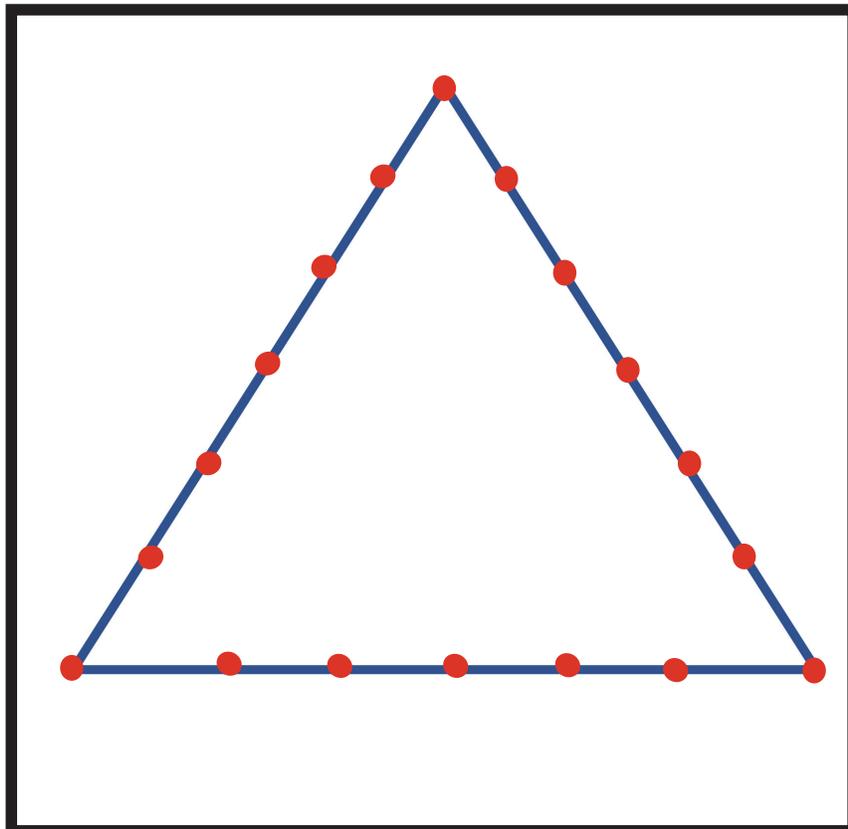
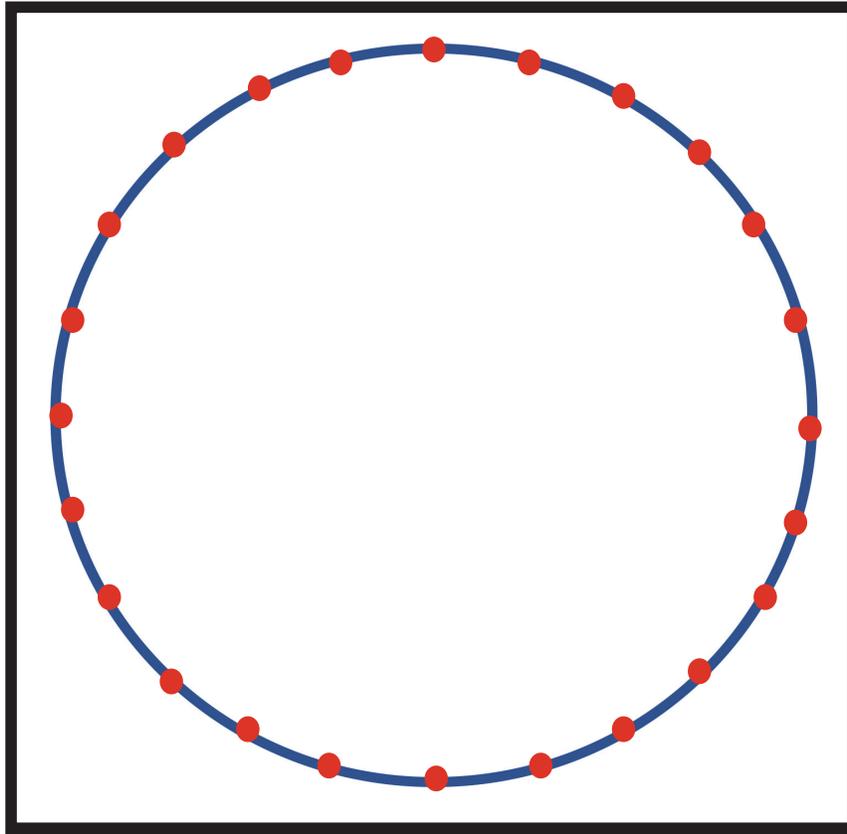
- Print Geometry String Art Templates on cardstock.
- Use scissors to trim around the black borders of the templates.
- Use the sharp point of the needle to poke small holes in the dots arranged along the geometric shape.
- Thread needle with craft thread.
- Using needle and thread, sew along the edge of the geometric shape.
- Use tape to secure the ends of the thread to the back of the templates.
- Repeat this process with all of the templates.
- Create a display to showcase the students’ work.

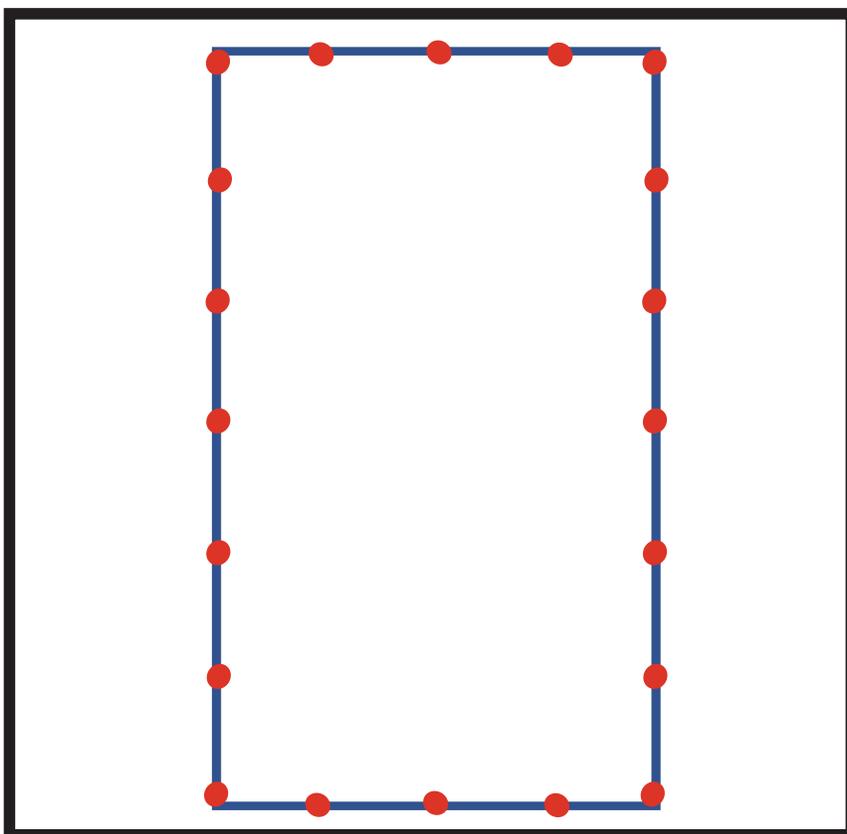
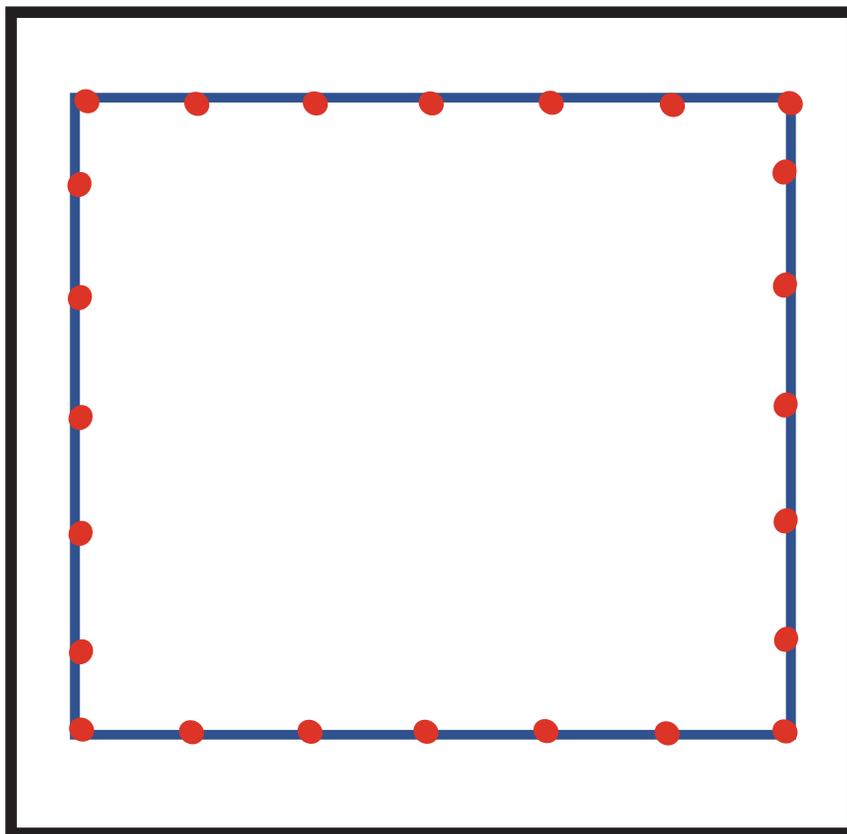
Special Project:

- Create a more complicated sewing by pulling thread across the shape in a sequential pattern.
- Establish a repetitive stitching pattern. For example, on the circle template, create a pattern based on skipping 5 dots between stitches. Or, using the triangle template, create a pattern connecting each apex of the triangle to dots arranged on the opposite side.
- For a variation, rather than sew the cards, use markers to connect dots.
- Get creative. Have fun with this!



Geometric String Art Templates





Addition Fact Cards

*“Out on the river, catching fish takes practice.
Bears never quit. Before long, the salmon add up.”*

Objectives: To demonstrate the ability to add fluently.

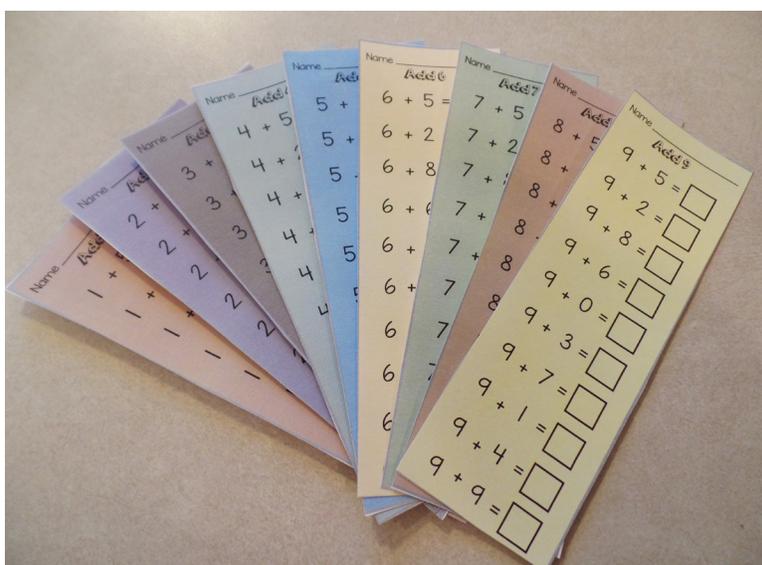
Materials:

- Addition Fact Cards (Guide, pgs. 11-13)
- Cardstock
- Scissors
- Pencil
- Manipulative counters (pennies, beans, buttons, etc.)

Procedure:

- Print fact cards on cardstock.
- Use scissors to trim around the border of the cards.
- Use pencil to record answers to the addition problems printed on the fact cards.
- Use counters as computational support if needed.

***Note:** Laminating the fact cards and recording sums using wipe-off markers will extend the shelf-life of the Addition Fact Cards by making them reusable.*



Name _____

Add 6

$6 + 5 =$	<input type="text"/>
$6 + 2 =$	<input type="text"/>
$6 + 8 =$	<input type="text"/>
$6 + 6 =$	<input type="text"/>
$6 + 0 =$	<input type="text"/>
$6 + 3 =$	<input type="text"/>
$6 + 7 =$	<input type="text"/>
$6 + 1 =$	<input type="text"/>
$6 + 4 =$	<input type="text"/>
$6 + 9 =$	<input type="text"/>

Name _____

Add 4

$4 + 5 =$	<input type="text"/>
$4 + 2 =$	<input type="text"/>
$4 + 8 =$	<input type="text"/>
$4 + 6 =$	<input type="text"/>
$4 + 0 =$	<input type="text"/>
$4 + 3 =$	<input type="text"/>
$4 + 7 =$	<input type="text"/>
$4 + 1 =$	<input type="text"/>
$4 + 4 =$	<input type="text"/>
$4 + 9 =$	<input type="text"/>

Name _____

Add 2

$2 + 5 =$	<input type="text"/>
$2 + 2 =$	<input type="text"/>
$2 + 8 =$	<input type="text"/>
$2 + 6 =$	<input type="text"/>
$2 + 0 =$	<input type="text"/>
$2 + 3 =$	<input type="text"/>
$2 + 7 =$	<input type="text"/>
$2 + 1 =$	<input type="text"/>
$2 + 4 =$	<input type="text"/>
$2 + 9 =$	<input type="text"/>



Name _____

Add 3

$3 + 5 = \square$

$3 + 2 = \square$

$3 + 8 = \square$

$3 + 6 = \square$

$3 + 0 = \square$

$3 + 3 = \square$

$3 + 7 = \square$

$3 + 1 = \square$

$3 + 4 = \square$

$3 + 9 = \square$

Name _____

Add 1

$1 + 5 = \square$

$1 + 2 = \square$

$1 + 8 = \square$

$1 + 6 = \square$

$1 + 0 = \square$

$1 + 3 = \square$

$1 + 7 = \square$

$1 + 1 = \square$

$1 + 4 = \square$

$1 + 9 = \square$

Name _____

Add 8

$8 + 5 = \square$

$8 + 2 = \square$

$8 + 8 = \square$

$8 + 6 = \square$

$8 + 0 = \square$

$8 + 3 = \square$

$8 + 7 = \square$

$8 + 1 = \square$

$8 + 4 = \square$

$8 + 9 = \square$



Name _____

Add 9

$9 + 5 = \square$

$9 + 2 = \square$

$9 + 8 = \square$

$9 + 6 = \square$

$9 + 0 = \square$

$9 + 3 = \square$

$9 + 7 = \square$

$9 + 1 = \square$

$9 + 4 = \square$

$9 + 9 = \square$

Name _____

Add 7

$7 + 5 = \square$

$7 + 2 = \square$

$7 + 8 = \square$

$7 + 6 = \square$

$7 + 0 = \square$

$7 + 3 = \square$

$7 + 7 = \square$

$7 + 1 = \square$

$7 + 4 = \square$

$7 + 9 = \square$

Name _____

Add 5

$5 + 5 = \square$

$5 + 2 = \square$

$5 + 8 = \square$

$5 + 6 = \square$

$5 + 0 = \square$

$5 + 3 = \square$

$5 + 7 = \square$

$5 + 1 = \square$

$5 + 4 = \square$

$5 + 9 = \square$



Common Core State Standards

		Discussion	Compass	Geo Shapes	Fact Cards
English Language Arts Standards » Reading: Literature					
CCSS.ELA-Literacy.RL.K.1	With prompting and support, ask and answer questions about key details in a text.	●	●	●	●
CCSS.ELA-Literacy.RL.K.3	With prompting and support, identify characters, settings, and major events in a story.	●			
CCSS.ELA-Literacy.RL.K.4	Ask and answer questions about unknown words in a text.	●			
CCSS.ELA-Literacy.RL.K.6	With prompting and support, name the author and illustrator of a story and define the role of each in telling the story.	●			
CCSS.ELA-Literacy.RL.K.7	With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts).	●	●	●	●
CCSS.ELA-Literacy.RL.K.10	Actively engage in group reading activities with purpose and understanding.	●	●	●	●
CCSS.ELA-Literacy.RL.1.1	Ask and answer questions about key details in a text.	●			
CCSS.ELA-Literacy.RL.1.2	Retell stories, including key details, and demonstrate understanding of their central message or lesson.	●			
CCSS.ELA-Literacy.RL.1.3	Describe characters, settings, and major events in a story, using key details.	●			
CCSS.ELA-Literacy.RL.1.7	Use illustrations and details in a story to describe its characters, setting, or events.	●			
CCSS.ELA-Literacy.RL.1.10	With prompting and support, read prose and poetry of appropriate complexity for grade 1.	●	●	●	●
English Language Arts Standards » Writing					
CCSS.ELA-Literacy.W.K.2	Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.		●		
CCSS.ELA-Literacy.W.1.2	Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.		●		
English Language Arts Standards » Speaking & Listening					
CCSS.ELA-Literacy.SL.K.1	Participate in collaborative conversations with diverse partners about <i>kindergarten topics and texts</i> with peers and adults in small and larger groups.	●	●	●	●
CCSS.ELA-Literacy.SL.K.2	Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.	●	●	●	●
CCSS.ELA-Literacy.SL.K.3	Ask and answer questions in order to seek help, get information, or clarify something that is not understood.	●	●	●	●
CCSS.ELA-Literacy.SL.K.4	Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.	●			
CCSS.ELA-Literacy.SL.K.5	Add drawings or other visual displays to descriptions as desired to provide additional detail.		●	●	
CCSS.ELA-Literacy.SL.K.6	Speak audibly and express thoughts, feelings, and ideas clearly.	●	●	●	●
CCSS.ELA-Literacy.SL.1.1	Participate in collaborative conversations with diverse partners about <i>grade 1 topics and texts</i> with peers and adults in small and larger groups.	●	●	●	●
CCSS.ELA-Literacy.SL.1.2	Ask and answer questions about key details in a text read aloud or information presented orally or through other media.	●	●	●	●
CCSS.ELA-Literacy.SL.1.4	Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.	●			
CCSS.ELA-Literacy.SL.1.5	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.		●	●	
CCSS.ELA-Literacy.SL.1.6	Produce complete sentences when appropriate to task and situation.	●	●	●	●



		Discussion	Compass	Geo Shapes	Fact Cards
Standards for Mathematical Practice					
CCSS.Math.Content.K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.				●
CCSS.Math.Content.K.OA.A.2	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.				●
CCSS.Math.Content.K.OA.A.5	Fluently add and subtract within 5.				●
CCSS.Math.Content.K.G.A.2	Correctly name shapes regardless of their orientations or overall size.			●	
CCSS.Math.Content.K.G.B.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).			●	
CCSS.Math.Content.K.G.B.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.			●	
CCSS.Math.Content.K.G.A.2	Correctly name shapes regardless of their orientations or overall size.			●	
CCSS.Math.Content.K.G.B.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).			●	
CCSS.Math.Content.K.G.B.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.			●	
CCSS.Math.Content.1.OA.A.1	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.1				●
CCSS.Math.Content.1.OA.C.5	Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).				●
CCSS.Math.Content.1.G.A.1	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.			●	

Next Generation Science Standards

3-PS2-3 Motion and Stability: Forces and Interactions:					
	<i>Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.</i>		●		
Science and Engineering Practices					
	Ask questions that can be investigated based on patterns such as cause and effect relationships.		●		
Disciplinary Core Ideas					
	PS2.B: Types of Interactions: Electric, and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other.		●		
Crosscutting Concepts					
	Cause and Effect: Cause and effect relationships are routinely identified, tested, and used to explain change.		●		

