

Symmetry and Birch Bark Biting

Subject: Mathematics
Strand: Shape and Space

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Grade: 4

Content (topic)	
Understanding Symmetry through Nature	
Outcomes	Indicators
<p>SS 4.4: Demonstrate an understanding of symmetry by:</p> <ul style="list-style-type: none">Identifying symmetrical 2-D shapesCreating symmetrical 2-D shapesDrawing one or more lines of symmetry in a 2-D shape	<p>SS 4.4f: Determine whether or not a given 2-D shape is symmetrical by using a Mira or by folding and superimposing.</p> <p>SS 4.4h: Provide examples of symmetrical shapes found in the environment and identify the lines of symmetry.</p> <p>SS 4.4i: Sort a given set of 2-D shapes as those that have no lines of symmetry, one line of symmetry, or more than one line of symmetry.</p>
Mathematical Processes	
<ul style="list-style-type: none">ConnectionsMental MathematicsVisualization	
Lesson Preparation	
Equipment/materials:	
<ul style="list-style-type: none">Rosella Carney video titled “Birch Bark Biting”.Copies of the “Examples of Birch Bark Biting” for every student	
Advanced Preparation:	
<ul style="list-style-type: none">Have the video ready for studentPrint sufficient copies of the “Examples of Birch Bark Biting” for the students.Have an example of symmetry found outdoors (e.g., the ladder attached to the play structure).If possible, bring in some examples from nature that illustrate symmetry, such as grass or leaves.	
Presentation	
Set	
<ul style="list-style-type: none">Play the video titled “Birch Bark Biting with Rosella Carney” and have the students look for examples of symmetry throughout the video.After the video, ask the students to determine whether or not the	

picture of birch bark biting is symmetrical and to circle three example of symmetry along with orally explaining why those are symmetrical.

Development

- Next, ask students whether or not they are able to think of examples in nature that are symmetrical (e.g., tree leaves, faces of animals and people, grass, butterflies, flowers, etc.).
- Hand out the images of birch bark biting in which is found in [“Examples of Birch Bark Biting.”](#) Have students draw lines across their paper that demonstrates the lines of symmetry.
- Take students outside into the schoolyard and assemble them into groups of three. Ask the students to find three different objects, which are symmetrical, and to draw these objects in their math journals with a broken line to indicate the lines of symmetry.
- Allow students to draw a 2-D object which has no lines of symmetry, one line of symmetry, and more than one line of symmetry.