

## Grade 2

<b>Unit</b> <b>3.2</b>	<b>Unit Title</b> <b>Reason with Shapes and Their Attributes</b>	<b>Lesson</b> <b>1 of 2 (3D)</b>	<b>Day</b> <b>1 - 3</b>
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### Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><b>2.G.1</b> Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.<sup>5</sup> Identify triangles, quadrilaterals, pentagon, hexagons, and cubes. <sup>5</sup> Sizes are compared directly or visually, not by measuring.</p>	<ul style="list-style-type: none"> <li>•Identify and describe three-dimensional shapes (cubes and rectangular prisms) according to the number of faces, edges, and vertices.</li> <li>•Recognize the faces that make up a rectangular prism or cube.</li> <li>•Recognizing the nets that make a cube.</li> </ul>	<p><b>SMP4</b> Model with mathematics. <b>SMP6</b> Attend to precision.</p>	<ul style="list-style-type: none"> <li>•How would you describe the faces of a rectangular prism and the faces of a cube?</li> <li>•How do you count the edges of a cube?</li> <li>•Which faces of a rectangular prism (or cube) are equal?</li> <li>•How many different nets can fold to make a cube? Sketch them.</li> </ul>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
Recognize a cube and rectangular prism.	Face Edge Vertex, vertices	Having trouble visualizing all edges and faces of a 3-D shape.  Vocabulary confusion. Side is used to describe the line that connects two vertices in a 2D shape; where edge is the line that forms when 2 faces of a 3-D shape meet.	<b>OnCore</b> Lesson 99 & 100, pages 197 - 200 <b>K-5 Math Resources</b> <a href="#">Comparing 3D Shapes</a> <a href="#">Nets for a Cube</a> <a href="#">Skeletal Models</a> Illustrations: <a href="http://illuminations.nctm.org/ActivityDetail.aspx?ID=84">http://illuminations.nctm.org/ActivityDetail.aspx?ID=84</a>

### Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide students to identify and describe three-dimensional shapes. (Lesson 99/Comparing 3D Shapes)) They will help students count the number of faces, edges, and vertices on cubes and rectangular prisms (Lesson 100) This can be visually challenging for some students. Making <i>Skeletal Models</i> of being able to hold the shape in the hand, instead of pictures, may be helpful. Using <i>Nets for a Cube</i> students will visualize which net could be folded to cover the cube or Illuminations as a whole class activity.	Students will identify and describe three-dimensional shapes using pages 197 – 198. They will count the number of edges, faces and vertices on cube or rectangular prism (Lesson 100) and looking shapes provided by the teacher. Some students will need to hold the object to see all the parts. Making <i>Skeletal Models</i> will be helpful. Students will be able to determine which faces (in 2-D) would make up a particular shape and using <i>Nets for a Cube</i> or the Illumination site above to visualize which net would fold to make a cube.

## Grade 2

<b>Unit</b> <b>3.2</b>	<b>Unit Title</b> <b>Reason with Shapes and Their Attributes</b>	<b>Lesson</b> <b>2 of 2 (2D)</b>	<b>Day</b> <b>4 - 7</b>
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### Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><b>2.G.1</b> Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.<sup>5</sup> Identify triangles, quadrilaterals, pentagon, hexagons, and cubes. <sup>5</sup> Sizes are compared directly or visually, not by measuring.</p>	<ul style="list-style-type: none"> <li>•Recognize and draw 2 –D shapes having specified attributes, such as number of sides, angles or vertices.</li> <li>•Sort two-dimensional shapes according to their defining attributes.</li> <li>•Identify triangles, quadrilaterals, pentagons, hexagons.</li> </ul>	<p><b>SMP4</b> Model with mathematics. <b>SMP6</b> Attend to precision.</p>	<ul style="list-style-type: none"> <li>•How do you find and count angles in two-dimensional shapes?</li> <li>•How do you use the number of sides and angles to sort two-dimensional shapes?</li> <li>•Can you identify this shape? Explain using mathematical thinking.</li> </ul>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> <li>•Distinguish between defining and non-defining attributes.</li> <li>•Name the pattern block shapes.</li> <li>•Identify and describe cubes and rectangular prisms.</li> </ul>	<p>triangle, quadrilaterals, pentagon, hexagon side angle vertex, vertices</p>	<p>When asked to point to the angle, student points to the vertex. Vocabulary confusion: Side is used to describe the line that connects two vertices in a 2D shape; where edge is the line that forms when 2 faces of a 3-D shape meet.</p>	<p><b>OnCore</b> Lesson 101- 103 Student pages 201 – 206 <b>Investigation</b> Snap-Ins Unit 4 Session 1.3A <i>Guess My Rule</i> Unit 2 p.C22, Geoboards <b>K-5 Math Resources</b> <a href="#">My Polygon Riddle</a> <a href="#">Comparing Polygons</a> <b>Task card if book is read:</b> <a href="#">The Greedy Triangle</a></p>

### Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
<p>Teachers will guide students to recognize and draw 2-D shapes having specified attributes, such as number of sides, vertices, or angles (Lesson 100 &amp; 102, <i>My Polygon Riddle</i>, <i>Guess My Rule</i> ) They will provide opportunities for students to sort &amp; compare shapes according o their attributes (Lesson 103 or <i>Comparing Polygons</i>). A great teachers may start this lesson is by reading the book <i>The Greedy Triangle</i>, a task card is included for students if this book is read.</p>	<p>Students will recognize and draw 2-D shapes having specified attributes using student pages 201 – 204, <i>My Polygon Riddle</i> and INV <i>Guess My Rule</i>. They will recognize and count the number of sides, angles and vertices a shape has. Students may sort and compare shapes using Lesson 103 and <i>Comparing Polygons</i>. They may choose to read the book <i>Greedy Triangle</i> on there own if there is not enough time for the teachers to read in class.</p>