

**Chapter  
3****Angles and Triangles**

Dear Family,

Take a look at the structures in your neighborhood. What shapes do you see over and over again? Triangles can be seen everywhere. Peaked roofs are made with triangular sections; umbrellas use triangular wedges; bridges use triangular shapes to span great distances.

The triangle is used in many structures because it is a stable shape. There is only one way to form a polygon with three given segments and this makes the shape strong. A square can shift into a parallelogram. A circle can be deformed into an oval shape without changing the perimeter. But a triangle retains its shape.

You may want to use toothpicks and gum drops to create a triangle, square, and rectangle. Test the strength of each shape to reinforce that the triangle provides the most support.

Triangles can be used to form the sides of pyramids or the ends of prisms, making them popular for building roofs. More complicated patterns can be used to approximate nearly any shape. A geodesic dome uses triangles to create a sphere-like shape. Try this with your student. Choose a structure, such as your home or a nearby building or bridge.

- What types of triangles are used in the structure? Are they all similar, or are different triangles used?
- What types of angles are used? Are they acute (less than 90 degrees), right (equal to 90 degrees), or obtuse (greater than 90 degrees)? Why do you think those angles are chosen?
- Are there triangular parts inside of the structure? Try looking at the trusses in an attic or under a bridge. Why do you think the shapes you see were chosen?

You may want to build a model of your structure using toothpicks and gum drops or other similar materials.

Have fun looking at your structure from "every angle"!

<b>Lesson</b>	<b>Learning Target</b>	<b>Success Criteria</b>
3.1 Parallel Lines and Transversals	Find missing angle measures created by the intersections of lines.	<ul style="list-style-type: none"> <li>I can identify congruent angles when a transversal intersects parallel lines.</li> <li>I can find angle measures when a transversal intersects parallel lines.</li> </ul>
3.2 Angles of Triangles	Understand properties of interior and exterior angles of triangles.	<ul style="list-style-type: none"> <li>I can use equations to find missing angle measures of triangles.</li> <li>I can use interior and exterior angles of a triangle to solve real-life problems.</li> </ul>
3.3 Angles of Polygons	Find interior angle measures of polygons.	<ul style="list-style-type: none"> <li>I can explain how to find the sum of the interior angle measures of a polygon.</li> <li>I can use an equation to find an interior angle measure of a polygon.</li> <li>I can find the interior angle measures of a regular polygon.</li> </ul>
3.4 Using Similar Triangles	Use similar triangles to find missing measures.	<ul style="list-style-type: none"> <li>I can use angle measures to determine whether triangles are similar.</li> <li>I can use similar triangles to solve real-life problems.</li> </ul>