

LessonTitle:Assessment: What's the Angle, What's the Shape? Geo 3.8**Utah State Core Standard and Indicators** Geometry Standards 3 Process Standards 1-5**Summary**

In this lesson, students identify different kinds of angles and then build different kinds of straw triangles using given information.

Enduring Understanding

We can derive geometric shapes from given information about sides and angles.

Essential Questions

Why is it important to classify angles and triangles? How does this process help us?

Skill Focus

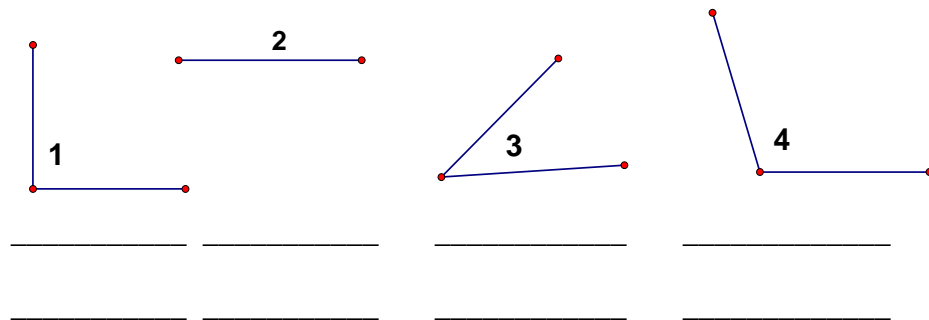
- Creating triangles and quadrilaterals when given different sides and angles.

Vocabulary Focus**Assessment****Materials:** Straws, scissors, string, worksheets**Launch****Explore****Summarize****Apply**

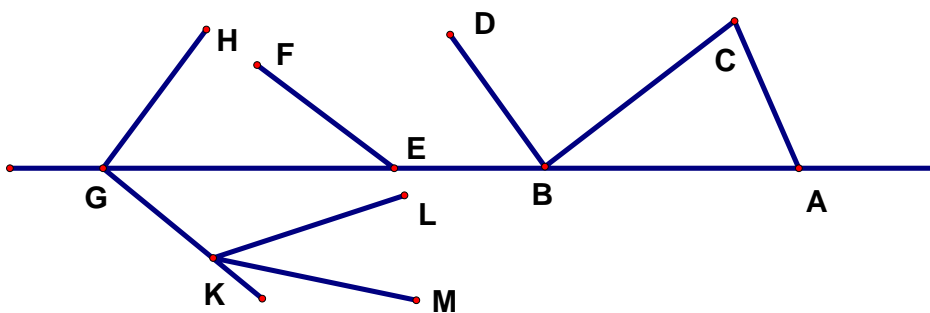
Geo 3.8 What's the Angle? What's the Shape?

(adapted from Connect to NCTM standards)

1) Classify each angle as acute, right, obtuse, or straight. Then measure each angle.



2) Measure each angle in the figure below. Classify each angle as acute, right, obtuse or straight.



- | | | | |
|-----------|-------|-----------|-------|
| ABC _____ | _____ | CBD _____ | _____ |
| DBE _____ | _____ | BEF _____ | _____ |
| FEG _____ | _____ | HGE _____ | _____ |
| HGK _____ | _____ | GKL _____ | _____ |
| GKM _____ | _____ | ACB _____ | _____ |

4) Work with a partner to create the following shapes. Use straws, cut them to given lengths and move them to create the shape. If it isn't possible, then write not possible and explain why. If it is possible, then draw the figure.

- a) A triangle with sides of 12 cm and 7 cm. The third side can be a length so that the angle opposite the 7 cm side measures 30 degrees.

- b) A triangle that fits the same description as above but looks different. The angle opposite the 4 cm side measure 30 degrees.
- c) A triangle with sides of 12 cm and 4 cm. The third side can be a length so that the degrees.
- d) A triangle with three angles that each measure 60 degrees and all sides equivalent.
- e) A quadrilateral with angles that measure 70, 80, 90 and 100 degrees.
- f) A quadrilateral with sides that measure 4,8,9 and 15 meters.
- g) A triangle with angles that measure 20, 70 and 90 degrees.
- h) A triangle with sides that measure 5, 12, and 13 cm.
- i) A triangle with sides that measure 4, 6, and 11 cm.
- j) A quadrilateral with sides that measure 3, 4, 5, and 15 cm.
- k) A closed shape with no angles.
- l) A quadrilateral with three angles each measuring 120 degrees.
- m) A triangle with two angles measuring measuring more than 85 degrees.
- n) Paul lives 2 miles from Rita, and Rita lives 3 miles from the shopping mall.

What are the shortest and longest Distances Paul could live from the mall?
- o) Sharon has some boards that measure 3, 4, and 8 feet. Without cutting any of the boards, can Sharon wall off an area in her yard to use as an herb garden? Draw and explain.