## Lesson 8: Sort Triangles

* Let’s sort triangles.

### Warm-up: Estimation Exploration: Angle Measure

What is the measure of the angle?



Record an estimate that is:

|  |  |  |
| --- | --- | --- |
| too low | about right | too high |
| $$ | $$ | $$ |

### 8.1: The Right Fit

1. Find a triangle card that fits in each space on the grid.
2. If you don’t think it is possible to find a triangle that fits certain criteria, explain why not.

|  | all three side lengths are different | exactly two of the side lengths are the same | all three side lengths are the same |
| --- | --- | --- | --- |
| has a 90 degree angle |  |  |  |
| has an angle that is greater than 90 degrees |  |  |  |
| all three angles are less than 90 degrees |  |  |  |

Explanations:

### 8.2: All, Some, None

1. Sort the triangle cards from the previous activity in a way that makes sense to you. Describe how you sorted the cards.
2. Now sort out the triangles with a 90 degree angle. For these triangles, write statements about each category.
* All of the triangles with a 90 degree angle...
* Some of the triangles with a 90 degree angle...
* None of the triangles with a 90 degree angle...

### Section Summary

Section Summary

In this section we sorted and analyzed different kinds of quadrilaterals and triangles. We described their properties. For example:

* A rectangle is a quadrilateral with 4 right angles.
* A rhombus is a quadrilateral with 4 equal sides.
* A square is a quadrilateral with 4 right angles and 4 equal sides.

We also described how the shapes are related to each other. For example, we can see that a square is always a rhombus because it has the properties of a rhombus. A square is also always a rectangle because it has the properties of a rectangle. On the other hand, a rectangle does not need to be a square because its side lengths don't have to all be the same. And a rhombus does not need to be a square because its angles do not have to be right angles.



© CC BY 2021 Illustrative Mathematics®