Unit 1, Lesson 2

A Triangle's Sides

Let's write a conjecture about side lengths in a triangle.

2.1 Do Any Three Lengths Make a Triangle?

Find 3 side lengths that would not form a triangle. Be prepared to explain your reasoning.

2.2 Make a Conjecture

1. What do you notice about the lengths that made triangles?

2. What do you notice about the lengths that did not create triangles?

3. A conjecture is a reasonable guess that you are trying to prove or disprove. You have investigated the side lengths of triangles. Draft a conjecture about how you can determine if lengths will form a triangle.

Are you ready for more?

Suppose we were investigating quadrilaterals. Draft a conjecture about what conditions must be necessary for lengths to form a quadrilateral.

Lesson 2 Summary

To make a conjecture, or educated guess, about an idea in mathematics, we can start by experimenting with different values to find out what is true in a given situation. By trying out different side lengths, we were able to figure out that the length of one side of a triangle must be less than the sum of the lengths of the other two sides. This conjecture turns out to be true in all situations, but we will convince ourselves of this fact in another lesson.

Consider this progression of conjectures about the side lengths of a triangle:

- One side can't be too long.
- Any one side must be shorter than the other two sides together.
- Any one side's length must be less than the sum of the other two sides' lengths.

Which conjecture is the most clear? These statements may look like a progression of ideas used when developing a conjecture. It is helpful to have a partner to share our thoughts with so that we can refine our ideas into stronger and clearer statements.