Unit 1, Lesson 15

Adding the Angles in a Triangle

Let's explore angles in triangles.

15.1 Can You Draw It?

Draw 3 different types of triangles.

15.2 Find All Three

Your teacher will give you a card with a picture of a triangle.

1. The measurement of one of the angles is labeled. Mentally estimate the measures of the other two angles.
2. Find two other students with triangles congruent to yours but with a different angle labeled. Confirm that the triangles are congruent, that each card has a different angle labeled, and that the angle measures make sense.
3. Enter the three angle measures for your triangle on the table your teacher has posted.

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15.3 Tear It Up

Your teacher will give you a page with three sets of angles and a blank space. Cut out each set of three angles. Can you make a triangle from each set that has these same three angles?

Are you ready for more?

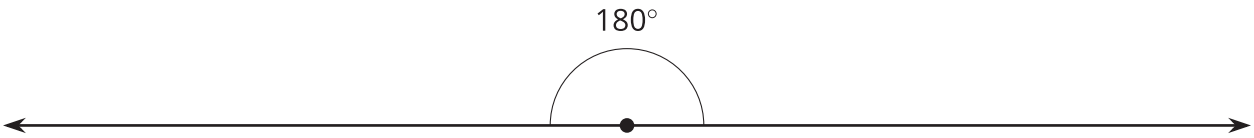
1. Draw a quadrilateral. Cut it out, tear off its angles, and line them up. What do you notice?

2. Repeat this for several more quadrilaterals. Do you have a conjecture about the angles?

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Lesson 15 Summary

A 180° angle is called a straight angle because when it is made with two rays, they point in opposite directions and form a straight line.



If we experiment with angles in a triangle, we find that the sum of the measures of the three angles in each triangle is 180° — the same as a straight angle!

Through experimentation we find:

- If we add the three angles of a triangle physically by cutting them off and lining up the vertices and sides, then the three angles form a straight angle.
- If we have a line and two rays that form three angles added to make a straight angle, then there is a triangle with these three angles.

