Sum of the Angles of a Triangle

Activity 3. Triangular Tiles

Now we will use triangular tiles for another method to arrive at the same result.

1) Paste the triangular tiles grid given at the end of this section on cardboard and cut out the triangles.

2) Observe that all the triangles are congruent to each other. Corresponding sides have the same length, and corresponding angles are equal. Observe also that angles that are equal have been marked with the same color.

3) Use the triangular tiles to form a straight path, with edges parallel to each other. There are different ways to form a straight path, here we show one in Figure 5.
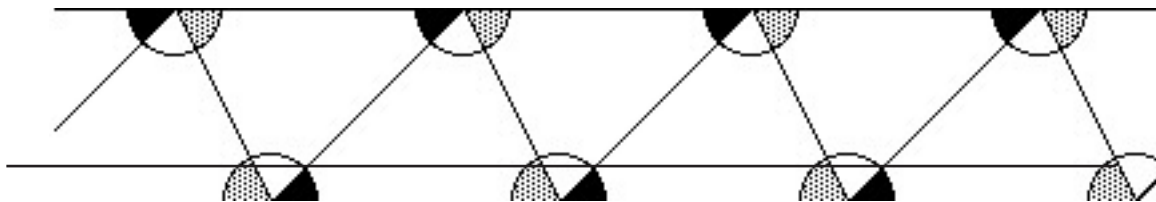

Figure 5. A straight path formed by congruent triangles.

4) Look at the angles that are together at one of the sides of the straight path. Notice that you have one of each color.
What is the sum of these three angles?

5) Now look at one of the triangles. See Figure 6. You will notice that it has angles that are equal to the corresponding angles that form the straight line.
What can you say about the sum of the angles in the triangle compared to the sum of the three angles at the side of the path that form the straight line?
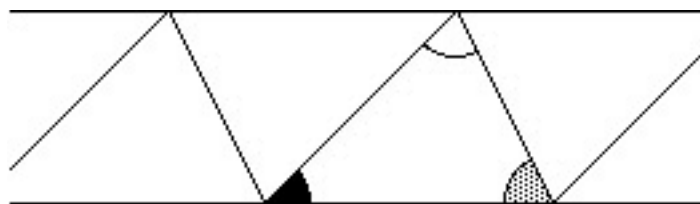

Figure 6. Three angles.