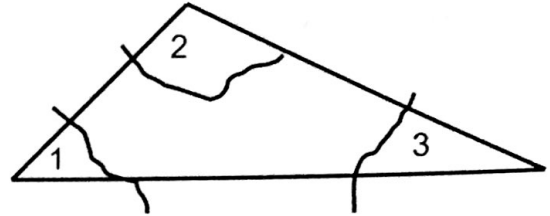


## TEAR IT UP EXPERIMENT

1. Start with **any** triangle.

2. **Tear** off all three angles.



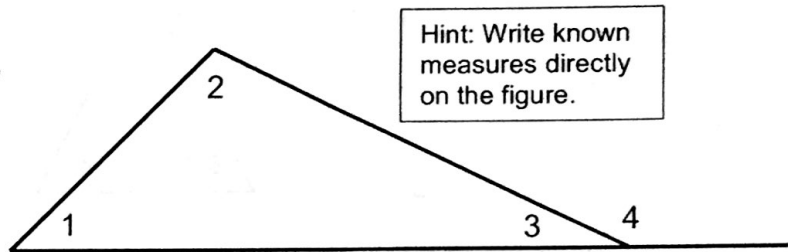
3. Place the “puzzle pieces” together so that the three angles form a straight angle. Sketch your results.

4. Compare your results with the results of your partners. Make a conjecture about the sum of the measures of the angles in a triangle, based on this experiment.

5. If  $|\angle 1| = 50^\circ$  and  $|\angle 2| = 100^\circ$ ,

Find  $|\angle 3|$  \_\_\_\_\_

Find  $|\angle 4|$  \_\_\_\_\_



6. What is the relationship between  $|\angle 1|$ ,  $|\angle 2|$ , and  $|\angle 4|$ ? Do you think this will always be true? Explain your reasoning.

An exterior angle of a triangle is an angle formed by a side of the triangle and an extension of its adjacent side.

7. Which angle in the triangle above is an exterior angle? \_\_\_\_\_

8. Extend sides of the triangle to identify five more exterior angles. Label them  $\angle 5$ ,  $\angle 6$ ,  $\angle 7$ ,  $\angle 8$ ,  $\angle 9$ .

9. Use appropriate notation to show which exterior angles have equal measures.