Triangle Angle Sum Investigation

Teacher Notes:

Materials:

Student page

Triangle patterns

Protractor

Pencil

Glue sticks

Class data sheet to compile data

Procedures:

1. Give each student a copy of the student page, a protractor, glue stick, and a triangle (either cut out or have students cut out).
2. Have students complete steps 1-5 on student page.
3. When students are finished use the class data sheet to compile class data on the sum of the angles of the triangles. Hopefully most students will find a sum at or near 180°.
4. Before making a final conclusion about the sum of the interior angles of a triangle discuss student’s findings from step 5. Hopefully students found that the angles line up to form a straight angle which measures 180°.
5. As a class complete the final statement on the student page. The sum of the interior angles of any triangle is 180°.
6. When finished with class discussion allow students to complete practice problems or assign for homework.

**Triangle Angle Sum Investigation**

**Step 1**: Draw and label the interior angles of a triangle *A*, *B*, and *C* as shown below on the triangle you were given *(your triangle may look different from the one below)*.

B

C

A

**Step 2**: Use a protractor to measure each angle. Find the sum of the three angles. List your measurements in the table:

|  |  |  |  |
| --- | --- | --- | --- |
| Measure of Angle A | Measure of Angle B | Measure of Angle C | Sum of Angle A, B & C |
|  |  |  |  |

**Step 3**: Rotate the angles so all vertices line up. Glue your connected angles on the back of this sheet or on a separate piece of paper. What do you notice? List your thoughts below:

As a class complete the following statement.

**Angle Sum Theorem: The sum of the interior angles of any triangle is \_\_\_\_\_\_\_\_**

Find each missing angle measure.

|  |  |
| --- | --- |
| 1.  | 2. In a triangle the measure of two of the angles is 35° and 65°. Find the measure of the third angle. |
| 3. In triangle *DEF* the measure of angle *D* is 33 and the measure of angle *E* is 97. Find the measure of angle *F*. | 4.  |
| 5. Triangle *ABC* is a right triangle. The measure of angle *A* is *37*°. Find the measures of angle *B* and *C*. | 6. Four isosceles triangles cap the Smith Tower in Seattle. If one of the base angles measures 65°, what are the measures of the other two angles? |