

Title: What's Your Angle?

Grade Ranges:

 K-4
 X 5-8
 9-12

Synopsis:

This lesson works well as a review of what students have learned about angles. Students will use protractors to construct angles on index cards. Students will also be responsible for measuring the angles, naming them, and identify their types. Then, the index cards will be circulated around the room for other students to identify and measure.

Keywords:

vertex, angles, acute, right, obtuse, straight, ray

Body:

In Class or As Homework:

1. Using your student roster, assign each student a number, which he or she will write on the horizontal top left corner of a large index card.
2. Ask each student to use a protractor to draw an angle on his or her index card. Each ray should include one point and the rays should meet at a vertex point. Each point should be named with a single letter.
3. On a separate sheet of paper (numbered from one to the total number of students participating in the activity), each student should write three things: his/her angle's name, the angle's type (acute, right, obtuse, straight), and the angle's measure in degrees. This, for example, could be Andy Applebee's response:
 1. angle ABC, obtuse, 130 degreesStudents should check their work carefully before completing the activity.
4. Collect the cards and create an answer key. If done in class, have other work available to keep students busy until you have completed the key.

In Class:

1. Give each student a card other than his or her original card. Tell students that they will pass the cards around the room silently until they have repeated Step 3 with each angle. (Students should not re-measure their own angles.) Remind students that they will be writing their answers out of order. If, for example, the first card a student receives is #12, then the student will answer beside #12 on his or her paper.
2. After work is complete, check it aloud by allowing each student to provide the answers for his or her own angle. Other students likely will challenge the information, so be prepared to arbitrate. You may want to tell students that you will allow a five-degree margin of error for each measure.
3. This lesson can be repeated regularly with different angles to keep students' skills sharp. As students become more precise, eliminate the margin-of-error allowance.

Related Links:**Math.com: Classifying Angles**

<http://www.math.com/school/subject3/lessons/S3U1L4GL.html>

This section of math.com provides an introduction to angles and protractors.

Features:

- ___ Contains special education tips
- ___ Quick Activity (less than 30 minutes; story starter)
- ___ Requires Internet access for students to complete

Objective:

Students will recognize the parts of an angle and understand how to use a protractor to construct and measure angles accurately.

Standards:

NY: 3.4 Students use mathematical modeling/multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships.

NYC: M2d. Uses many types of figures (angles, triangles, squares, rectangles, rhombi, parallelograms, quadrilaterals, polygons, prisms, pyramids, cubes, circles, and spheres) and identifies the figures by their properties, e.g., symmetry, number of faces, two- or three-dimensionality, no right angles.

CT: 6. Spatial Relationships and Geometry. Students will analyze and use spatial relationships and basic concepts of geometry to construct, draw, describe and compare geometric models and their transformations, and use geometric relationships and patterns to solve problems.

NJ: 4.16: All Students Will Demonstrate High Levels Of Mathematical Thought Through Experiences Which Extend Beyond Traditional Computation, Algebra, And Geometry.

Prerequisite Skills:

1. Students will need to be able to identify vertices, rays, and the four types of angles.
2. Students also will require basic protractor skills.

Time Required:

45-60 minutes

Technology and Materials Needed:

1. protractors (one for each student)
2. large index cards (one for each student)

Assessment Criteria:

1. Can students use protractors to make and measure angles correctly?
2. Can students correctly identify the parts of an angle?
3. Can students identify an angle according to its type?

Recommended Lesson Plan Review Date:

Review Comments: