Title: What's Your Angle?

Brief Overview:

In order to understand the construction of angles, students should have prior knowledge of the basic geometric ideas of lines, rays and vertices as well as the four basic types of angles. This unit introduces the students to measuring different types of angles, such as acute, obtuse, right and straight. It will include how to use the protractor as a tool of measurement.

NCTM Content Standard/National Science Education Standard:

1. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.
    - Make and test conjectures about geometric properties and relationships and develop logical argument to justify conclusions.
    - Identify, compare, and analyze attributes of two- and three-dimensional shapes and develop vocabulary to describe attributes.
2. Use visualization, spatial reasoning, and geometric modeling to solve problems.
    - Build and draw geometric objects.
    - Recognize geometric ideas and relationships and apply them to other disciplines and to problems that arise in the classroom or in everyday life.
3. Understand measurable attributes of objects and the units, systems, and processes of measurement.
    - Understand such attributes as length and the size of angles and select the appropriate type of unit for measuring each attribute.
4. Apply appropriate techniques, tools, and formulas to determine measurements.
    - Select and apply appropriate standard units and tools to measure length and the size of angles.

Grade/Level:

Grades 4-5

Duration/Length:

3-4 days (of class periods consisting of 60 minutes per day), included in this time period is time for assessment on the last day of the unit.

Student Outcomes:

Students will be able to:

- Identify the components of different types of angles.
- Classify angles according to their measures.

- Identify angles using estimation.
- Measure and draw angles.
- Use a protractor to construct angles whose measures range from 0 to 180 degrees.
- Determine angle relationships: congruent, complementary and supplementary angles.
- Identify the 6 classifications of triangles.

Materials and Resources:

General materials-

- White paper (hole-punched)
- Pencils
- Protractors
- Overhead projector
- Rubber bands
- Scissors
- Rulers
- Colored pencils or markers

Teacher-Created materials

- Flexi-Straws or coffee stirrers (choose one)
- Pipe cleaners

Development/Procedures:
Lesson 1: To Construct and measure angles using the protractor

Students will be able to:

- Identify the components of an angle.
- Identify the components of a protractor and demonstrate its use.
- Use a protractor to construct angles that represent 0 to 180 degrees from left and right orientation.
- Construct angles with varying measures.
- Name angles using one of three different formats.
- Compare angles.

Pre-assessment:

- Distribute a ruler and blank sheet of paper to each student.
- Instruct students to fold paper into quarters and label each box with the "Degree" names, straight angle, acute angle, right angle, and obtuse angle.
- Instruct students to use their ruler to draw a representation of each angle.

Launch

- Lead students through "Geo-Figures" for angles with measures of 180 degrees, 90 degrees, and 45 degrees: (Teacher Resource 1)
  - Students will work with a partner and use arms to form angles:
    - 180 Degree Angle: Students stand side by side with respective right and left arms extend and fisted. Fists touch to form 180 degrees.
    - 90 Degree Angle: Students touch respective fist to elbow.
    - 45 Degree Angle: Students touch respective fist to elbow and keeping hand open, they will angle arm from elbow out at a diagonal that approximates 45 degrees.

Teacher Facilitation

- Elicit responses from students using the following question:
  - What are the components or parts of an angle? (2 rays and a vertex or single point)
- Say: That is correct; two rays that have the same endpoint form an angle.
  The shared endpoint is called the vertex.

- Tell students they will make angles of greater accuracy using manipulatives.

- Say: Yesterday we sorted or classified angles into groups.

- "How can we sort or categorize angles?" (Acute, straight, right, obtuse)
- "Who can tell what attribute you used to categorize the angles?" (The measure or distances between the two rays).

- "What measure did we use for the angle given?" (Use angle given by student: acute –less than 90 degrees, etc.)
- Continue until all four categories are identified.

- Dispense manipulatives (coffee stirrer with pipe cleaner inserts, flexi-straws, etc.) to each student. See Teacher Resource 2 for directions to make Geo-Flex straws and coffee stirrer manipulatives.
- Tell students to use the manipulatives to form the angles that they have identified.
- (Acute, straight, right, obtuse)
- Monitor for comprehension.
- Collect manipulatives.

Constructing Angles:

- Say: "When we want to make a more exact representation or drawings of an angle we can use a special tool called a "protractor." It is used to construct angles by forming rays."
- Direct student's attention to graphic representation (overhead, drawing) of a protractor. (Teacher Resource 3)
- Have students note that the protractor is designed as a half circle with a number grid that increases in increments of 10 from left to right and right to left starting at "0".
- Emphasize that it has helper circles or circular cutouts at top and bottom that we use to align rays with points or endpoints forming a vertex to build angles.
- It also includes a ten-centimeter ruler along the bottom and a 6 inched ruler segment along the bottom edge.
- Distribute protractors.
- Model constructing an angle on the board while students perform steps at their desk.
- Tell students that they will modify their protractors to make them more "user friendly" by cutting a rubber band in half, threading it through the bottom circular cut-out on their protractors, and knotting it above 90 degrees.
- Ask: "When we start counting where do we usually start?" (1 or 0)
- "Take the end of your rubber band and place it at 0 degrees on the right-hand side of the protractor." (Comprehension Check - Have students hold protractors in the air to site for 0 degrees).
- "If you move your rubber band up what are the next numbers you will see or intersect?" (10/170).
- "Which number makes more sense to start with logically 10 or 170 since we started at zero?" (10)
- Now place your rubber band at 10 degrees, 20 degrees, etc. until all degrees have been demonstrated to 180 degrees.
- Now we are going to count off degrees using our rubber bands on the protractor starting from 0 degrees on the left, because we know that angles can rotate in any direction.
- Distribute a blank sheet of paper.
- Ask students to do the following:
    - Draw a point and label it V for vertex.
    - Place the rubber band at 0 degrees on the right side.
    - Line up the circle on the bottom of the protractor on top of the point labeled VS.
    - Place a point by the knot of the rubber band. This should correspond or line up with 0 degrees. Label the point E.
    - Now rotate the rubber band to 90 degrees. When you reach it, call out 90 degrees.
    - Place a point at the knot. It should correspond or line up with 90 degrees. Label the point A.

    - Use the straight edge of the protractor to draw a line segment to connect points V and E. Add an arrow at the end of the line segment to change it into a ray.
    - Use straight edge again to draw a line segment to connect points V and A. Add an arrow at the end of the line segment to change it into a ray.
- Say: "Congratulation you have just constructed an angle!"
- "Now we have to take the next step and label the measure of the angle. The measure of an angle tells how far one ray rotated away from the other ray.
- Ask students how many of them think they know the measure already. (Students should all raise hands to respond)
- Tell students to write the measure on their paper with the number followed by the degree sign – 90 degrees. On the count of 3 hold up your answer.
- "Tell students they will use three symbols to identify the measure of an angle." (Teacher Resource 4)
- A small square for "Right or 90 degree" angles only
- "Arc" It resembles part of a circle.
- A number inside the angle.
- The square and arc connect the two rays to show the distance being measured. Place the measure beside the symbol.

Student Application

- Distribute white paper and have students fold it into fourths.

- Instruct students to draw an angle with a measure of 180 degrees as you monitor individually.

- Ask students to work with one other tablemate and draw 3 more angles as determined by peer. Have peer check the finished product for construction of angles based on given measure (measures have to be between 0 and 180). Labeling of points is required in the construction.

- Inform students that they have to name the wonderful angles they have formed. Instruct students that they name an angle in one of three ways.

    1. Use three letters or point—a point on one ray, the vertex, and a point on the other ray. The letter for the vertex is always in the middle.
    $\angle AVE$ or $\angle EVA$. Say, "Angle AVE or Angle EVA".

    2. Use the vertex letter. $\angle V$ Say, "Angle V."

3. Use a number written inside the rays of the angle. ∠1, Say "Angle 1."

- Have students draw three angles and name each angle using the three formats.

Embedded Assessment

- Students use the manipulatives to form the angles that have been identified including acute, straight, right, obtuse.
- Assign angles to categories (Acute, straight, right, obtuse).
- Student's responses that angles are determined by the measure or distance between the two rays.
- Student responses to questioning that angles measures are based on 90 and 180 degrees.
- Identification of angles based on measures.
- Use of protractor to form angles- acute, straight, right, and obtuse.

Reteaching:

- Review angle types/classifications: acute, straight, right, obtuse. Review steps for use of protractor.

Extension:

- Provide students with sheet containing a variety of angles.
- Have students label angles and use protractors to measure angles.
- Have students record measure on angles.
- Have students name angles and record measures as ∠ABC = 45°.

Development/Procedures:

Lesson 2: Students will investigate the relationship between angles and identify congruent, complementary, and supplementary angles.

Pre-assessment

- Give students protractors and sheets of paper.
- Have students fold the paper in half vertically and thirds horizontally.
- Tell students to use their protractors to form the following angles: 0°, 90°, 45°, 135°, 180°, and an angle of their choice.
- Name angles and include measures (Example ∠BAT = 120°).

Launch

Say: "Today we are going to investigate the relationship between angles. Those angle relationships have special names called, "Congruent, Complementary, and Supplementary."

- Give each student manipulatives that allow for the construction of angles from 0° to 180° degrees (Manipulatives can be made from small coffee stirrers and pipe cleaner inserts cut into approximately 1 inch lengths). See Teacher Resource 5 and 6.
- Pair students and have them form four separate angles that range from zero degrees to 180 degrees.

Teacher Facilitation

- Place a large square of paper on the board or a large square on the overhead.
- Draw a 180-degree angle across the mid-section of the square.
- Ask students "If you have constructed a 180 degree angle, hold it up."
- Draw a bisecting ray in the square that forms a 90-degree angle.
- Ask students: "If you have constructed a 90 degree angle, hold it up".
- Place a ray at a 45-degree angle on the figure.
- Ask students: "If you have constructed a 45 degree angle hold it up".
- Place a ray on the figure between 130 and 140 degrees.
- Ask students: "If you have constructed an angle that falls between 130 and 140 degrees hold it up".
- Tell students: "I'm interested to know what other angles you constructed. Who would like to share?"
- Turn the square upside down and add rays to the figure based on students' angle constructions (A single ray can represent angles that are close in measurement value).
- Say: "We have classified these angles based on their relationship with the 90 degree angle or the 180 degree angle."
- Ask students: "Who can identify one classification?" Then ask for subsequent classifications. (Acute, obtuse, straight, right, reflex, or zero degree).
- Tell students: "Angles can have relationships based on their sum which is the combination of their measures."
- Turn the square right side up.
- Cover the figure until the angles based on 90 degrees are exposed only.
- "We have a section of your angle construction. Let's name the 90 degree angle."
- "Who can tell me how many points we need to name an angle? (3 points).
- Place three points on the 90-degree angle and label it BAT.
- "Now let's look at the 45 degree angle. How many points do we need to label it? That is correct 1 because we already have two of the points labeled. Let's name the angle ∠CAT."
- "I have a question. If ∠BAT is 90 degrees and ∠CAT is 45 degrees, who can tell me the measure of ∠BAC?" (45 degrees)

- "There is a special relationship between angles that have the same measure. They are said to be congruent. This means that you can take either angle and fit it exactly over the other angle. The two 45 degree angles are congruent." Place a vocabulary list with graphics in an area easily seen by students. Reveal the definition of Congruent: (Teacher Resource 7)
  Congruent Angles: Two angles that have the same angle measure.
- "We have another relationship between the angles. They are called complementary angles because if we add their measures the sum will equal 90 degrees."
  Reveal the definition of complimentary angles: (Teacher Resource 7)
  Complementary Angles: The sum of two angle measures that equal 90 degrees.
- Uncover the figure completely.
- "Lets label the ray that was between a 130 and 140 degree angle by identifying a point and calling it H. So this will become ∠BAH."
- Question: "If ∠BAH has a measure of 45 degrees, could we say that it has a relationship with any other angles on this figure?" (Yes. Congruent with ∠CAT or ∠BAT and/or complementary with ∠CAT or ∠BAT).

- "There is another 90 degree angle. Who can come to the board and identify it? Can you also label a point so that we can name the angle?" (The angle will be designated ∠SAB)
- "There is one more important relationship we will explore. When two angles have measures that have a sum of 180 degrees, these angles are said to be supplementary.
- Reveal definition for Supplementary Angles: (Teacher Resource 7)
  Supplementary Angles: Two angles whose measure equals180 degrees when added together.

- "So when we look at our figure, we have already noted two 90 degree angles, ∠BAT and ∠BAH. Together their measures equal 180 degrees. Therefore, they are supplementary."
- Outline the two 'Ps' in the word 'supplementary' using a colored marker.
- Say: "Something that is a help to remember supplementary angles is the two 'Ps'. If you imagine the 8 in180 degrees laid on its side."
- Write the '8' horizontally over the two 'Ps'
- Say: "Now the circular part of the 'Ps' look like an eight and that is a reminder that supplementary describes the relationships between two angles as 180 degrees."
- We know if supplementary angles are two angles with measures of 180 degrees then complementary angles have to be two angles with measures of 90 degrees. When we know one, then we will automatically know the other. We also know that congruent means 'same', so we look for angles with the 'same' measures."
- Look back at the figure and select a 45-degree angle.

- Say: "So let's think! If ∠CAT is 45 degrees then a congruent angle would have to be…" (45 degrees).
- "If ∠CAT is 45 degrees then a complementary angle would be…?"(45 degrees).
- "If ∠CAT is 45 degrees then a supplementary angle would be?" (135 degrees).
- "Who can explain why the supplementary angle would have to be 135 degrees?" (If supplementary angles have to be 180 degrees then all you have to do is subtract 45 degrees from 180 degrees and you will get the measure or degree of the other needed angle).
- "Who can write that as a number sentence?" (180 – 45 = 135).
- Label supplementary angle = 135.
- Ask: "Can someone demonstrate another number sentence we could use to find an angle to form supplementary angles?' (If supplementary angles have to be 180 degrees, then you can use addition thinking: 45 degrees plus what number will equal 180 degrees? You will get the measure or degree of the other angle).
- "Who can write a number sentence to represent this thinking?"
- Student writes on board or overhead 45 + ___ = 180
  45 + 135 = 180
- Label angle. Supplementary angle = 135.

- Say: "So, let us review. You have demonstrated that if you know the measure of one angle, you can use addition or subtraction, to find the measures of the other angle?"

Student Application

- Say: "Look again at the angles you made earlier. You are going to combine angles to demonstrate the following angle relationships."
- On the board or overhead, place a grid that is broken into three sections and labeled Supplementary, Congruent, and Complementary. (Teacher Resource 8)
- Allow students to perform constructions.
- Ask teams to record the measures used to form one relationship.
- Rotate through teams until there are two or more angle combinations to represent each relationship category.

Supplementary	Congruent	Complementary
90° and 90° 45° and 135° 120° and 60°	90° and 90° 45° and 45°	45° and 45° 30° and 60° 80° and 10°

- Distribute the worksheet with the large square on it and a protractor (Student Resource 1 and Teacher Resource 6).
- Say: "Inside the square I want you to draw a figure that demonstrates the angle relationships we discussed today, based on the following criteria:"
  - At least two supplementary angles
  - At least four complementary angles
  - At least two congruent angles

Embedded Assessment

- Identify angle classification -- Acute, obtuse, straight, 90 degree, reflex, or zero degree.
- Questioning of students on congruent, supplementary, and complementary angle relationships.
- Construction of congruent, supplementary, and complementary angles using manipulatives to demonstrate relationships.
- Recording of measures on Congruent, Supplementary, and Complementary chart.
- Construction of figure to reflect Congruent, Supplementary, and Complementary angle relationships.

Reteaching/Extension:

Have students take the figure drawn and duplicate it on another sheet. Provide students with the following colors: yellow, red, green, and orange. Instruct students to color the angles based on their relationships, starting with "Color supplementary angles yellow." All other color combinations are to be determined by students. Using their completed figure as a guide, students are directed to place a key at the bottom of their figure that will provide directives to others to duplicate their color combinations based on angle relationships.

Development/Procedures:

Lesson 3: To identify the different classifications of triangles that have varying sides and angles.

- Students will be able to:
  - Compare angles to identify different types of triangles.
  - Identify triangles based on the measure of its angles.
  - Identify the components of an angle.

Pre-assessment:

- Students will sort angle picture cards into the 4 common categories based on observations and what they have learned in previous lessons. (Student Resource 2)
- Distribute protractors for students to check their answers.
- Circulate throughout the room to monitor progress.

- Show answer key on the overhead projector. (Teacher Resource 9)
- Have students explain their answers.

Launch

- Pass out plain white paper, scissors and rulers.
- Fold paper in half (lengthwise)
- Use a ruler and the protractor to make 2 right angles, one on each half of the paper. (Rays should be approximately 4 inches in length).
- Connect the 2 rays by a line segment. You have now made a triangle.
- Repeat with the second triangle.
- Cut both triangles out.
- On one of the triangles tear off each of the angles (at each vertex).
- Line up the vertices of the torn pieces so that they are touching. (Students should see that the pieces fit to make a straight angle, equaling 180 degrees) Question students about results.
- What happened when you matched the points from the torn pieces? (They made a straight angle.)
- Use the protractor to measure the angles in the second triangle that was cut out.
- Ask students the following questions about what they observed:
  - "How many degrees are in a straight angle/line?" (180)
  - "Does that help us to find out how many degrees there might be in a triangle" (180, because we used all of the pieces)
  - "How could we check to see if our hypothesis is correct?" (Use a protractor; try another model and see if it still will work; other answers may follow but direct students toward using what they already know from previous lessons).
- Elicit responses for the following questions:
  - What do you think would happen if we started out with an angle of a different measurement? (Get different numbers, the answers would change. Take several responses. Try not to offer any clear answer, as they will be asked to explore their hypothesis).
  - "How could we find out if any of our hypotheses are correct? What could we try?" (Use a protractor, make another type of triangle, measure different triangles).
- Say: "Let's try a few of our ideas."
- Distribute additional paper to students.
- Separate students into groups to try out the different strategies. (Use protractors to measure triangles of different sizes and shapes; draw different types of triangles; and any other ideas the students came up with).
- Have each group briefly discuss their results with the class.

Teacher Facilitation

- Say: "Today we are going learn how to identify the different types of triangles by looking at their angles."
- Angles are constructed from two rays that are connected at the vertex.
- "Triangles as we all know have 3 sides. All of the sides are made up of line segments that form angles."
- "Triangles can be different sizes; different shapes and their angles can measure differently."
- "During your warm-up you sorted angles into 4 categories. "Who can refresh my memory, what were the 4 types of angles that we identified? Be sure to describe each type." (Acute=less than 90 degrees, obtuse=more than 90 degrees, right=90 degrees, straight=180degrees).
- Place examples of each type of triangle on the overhead projector. (Teacher Resource 10)
- Choose students to come to the front and trace any right angles in red.
- Continue having students come forward and trace the rest of the angles. (Acute-green and obtuse-purple). (Straight angles will not be part of this activity, since that characteristic is not considered in classifying triangles).
- Ask:
  - "What do you see about the 3 triangles on the left? The right? Be sure to look at the similarities and the differences of the two groups." (The group on the left all has different types of angles while the group on the right all has different angles).
  - What attribute could be used to classify the three triangles on the right? (Guide answers toward the length of the sides by pointing out the differences and similarities if the students were not able to come up with them).
- Say: "Great! Triangles are special polygons. Sides and angles can be used to classify them."
- One triangle can have two names!

- Discuss the correct names of each of the types of triangles. (Equilateral= all sides the same length, Isosceles= 2 sides the same, Scalene= no sides the same length).
- Practice saying the names of the new classifications and have the class repeat them.
- Draw an acute equilateral triangle on the overhead projector.
- Ask the students what two names could be given to the triangle? How do they know? (Acute equilateral triangle, because the sides are all the same length and it has all acute angles).

Student Application

- Say: "Now you are going to make your own guide to the triangles."

- Write the names of each of the types of classifications on the overhead or chalkboard in no particular order. Leave them up so that students can use it as a word bank for the activity.
- Distribute a new sheet of plain white paper.
- Say: "Fold the paper in half, and in half again, (both lengthwise) making 4 sections. Unfold the paper and flatten. Then fold in half widthwise. This should now make eight sections."(Have a sample available for the students to reference). See Teacher Resource 11.
- "Label the top of the left column "angles" and the top of the right column "sides."
- "Use your compass and ruler to draw an example of each of the classifications of triangles. In the left column draw examples of triangles classified by their angles, in the right, triangles that are classified by the length of their sides." (Encourage students to try their best, but not to focus on perfection).
- "Do not label the types."
- "Switch with your partner and see if they can correctly label your drawings. You may want to have an answer key written down in a notebook or on a separate sheet of paper."
- "Switch your papers back and check your partner's work."
- "You should now have a great study guide to keep with your notes."

Embedded Assessment

- Monitor students when sorting the angle cards. Be sure that they are correctly identifying the categories.
- Questioning within the lesson: Asking students what qualifying characteristics triangles fit into.
- Formation of hypotheses, and monitoring processes to prove or disprove their ideas.
- Monitor the correct usage of the protractor and ruler as math tools.
- Circulate while students work with partners to be sure their illustrations are accurate.

Reteaching: Using the angle cards from the angle sort in the launch, have students match the cards into four angle categories. They can also trace and label each angle within the triangles so they can see the parts that make up the triangle.

Extension: Calculate the missing measure of angles in a triangle when the other two angles are given. If the students are able to understand that triangles are made up of 180 degrees, then they could learn how to subtract what is known from the total to determine the measure of the unknown angle.

Summative Assessment:

The students will be asked to complete an assessment that includes both angles and triangles. The students will be asked to look at an illustration of a large triangle. They will need to identify given angles and color particular classes of

triangles. This will be turned in to check for understanding of the concepts (Student Resource 3, Refer to Teacher Resource 12 for the answer key).....

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Geo-Figures:

This activity is to be performed by pairs of students. Students form geometric angles by connecting and touching arms and hands at varying locations.

- 180 Degree Angle:
  Students stand side by side with respective right and left arms extended and hands fisted. Fists touch to form 180 degrees.

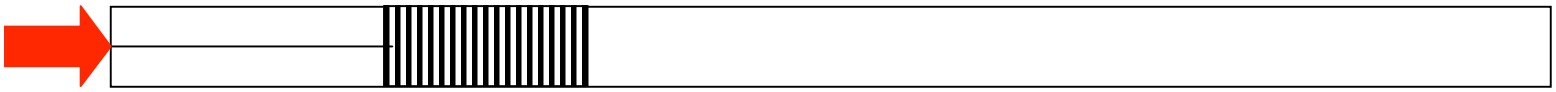
- 90 Degree Angle:
  Students touch respective fist to elbow.

- 45 or 135 Degree Angle:
  Students touch respective fist to elbow and keeping hand open, they will angle arm from elbow out at a diagonal that approximates 45 or 135 degrees.

Making Geo-Flex Straws

Teacher Resource 2

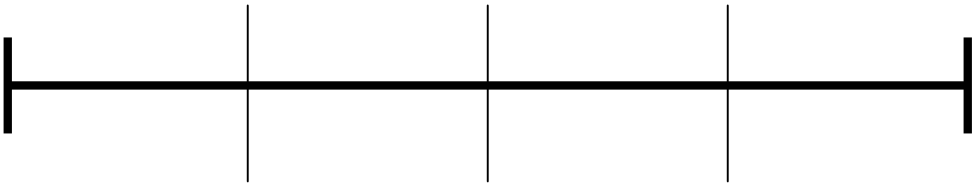
cut



(measured length)

Name the 3 classifications of triangles when classified by its sides:

Equilateral, Isosceles, Scalene.



Whole

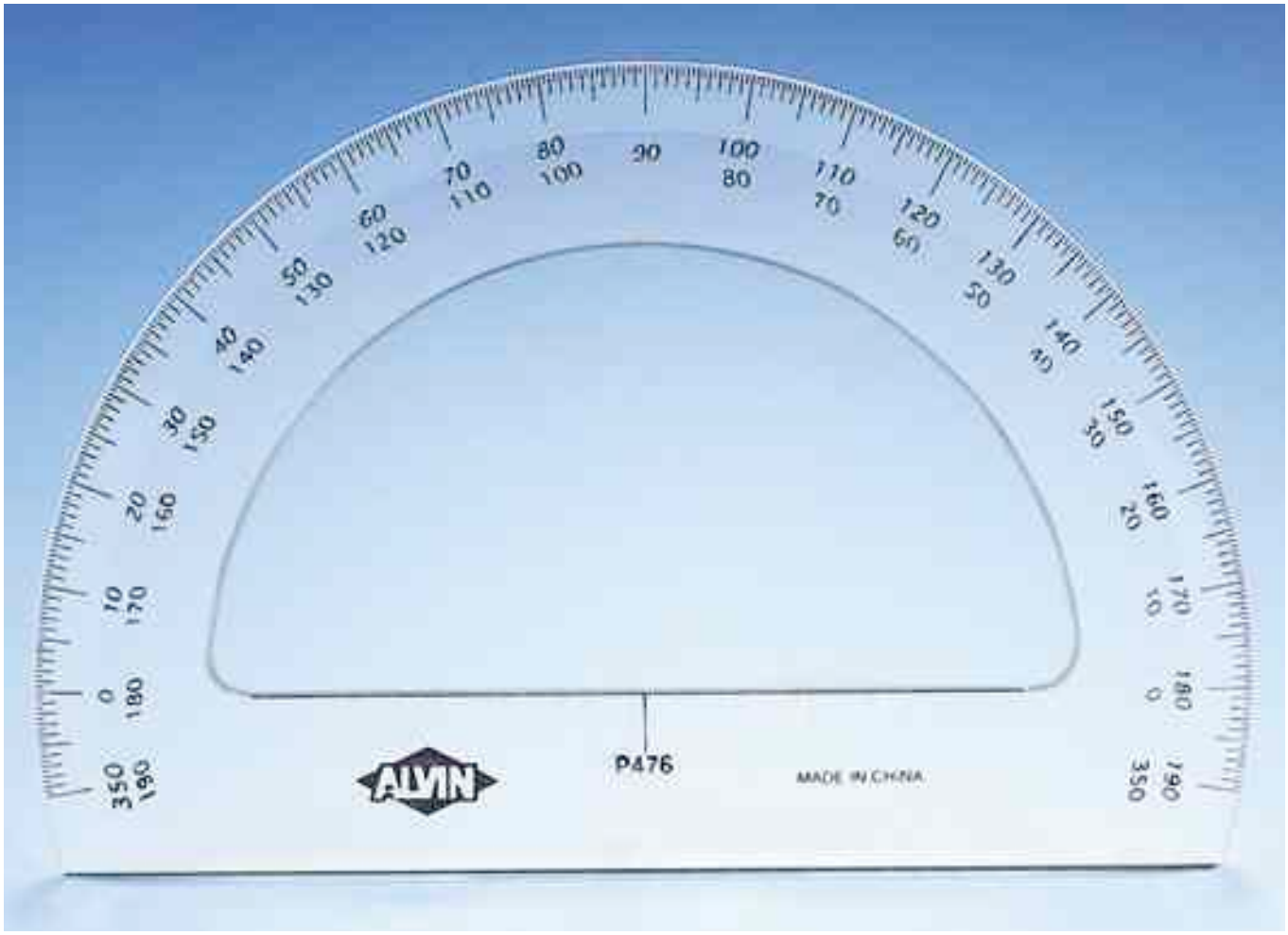
Three-fourth

Half

One-fourth

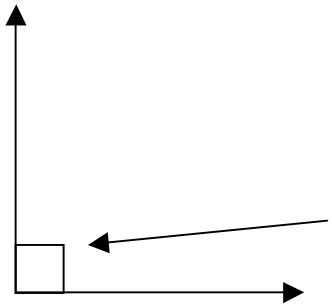
(Make 15 of each size for each set.)

Teacher Resource 3
Protractor



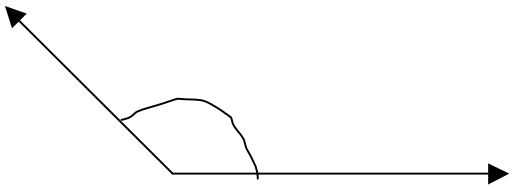
Symbols to Identify the Measure of Angles

- Right Angle Measure Symbol

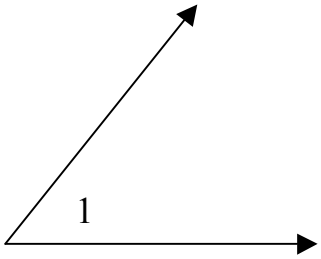


(Form square inside the right angle.)

- Arc Symbol



- Number Symbol



- Coffee stirrers come in different sizes. Locate one with a small diameter that will accept the insertion of 1 to 3 pipe cleaner pieces.
- Coffee stirrers come in units up to 1000. Cost is generally under five dollars.
- Coffee stirrers should be cut in varying lengths.
    - Whole

    - Three fourths

    - One half

    - One fourth

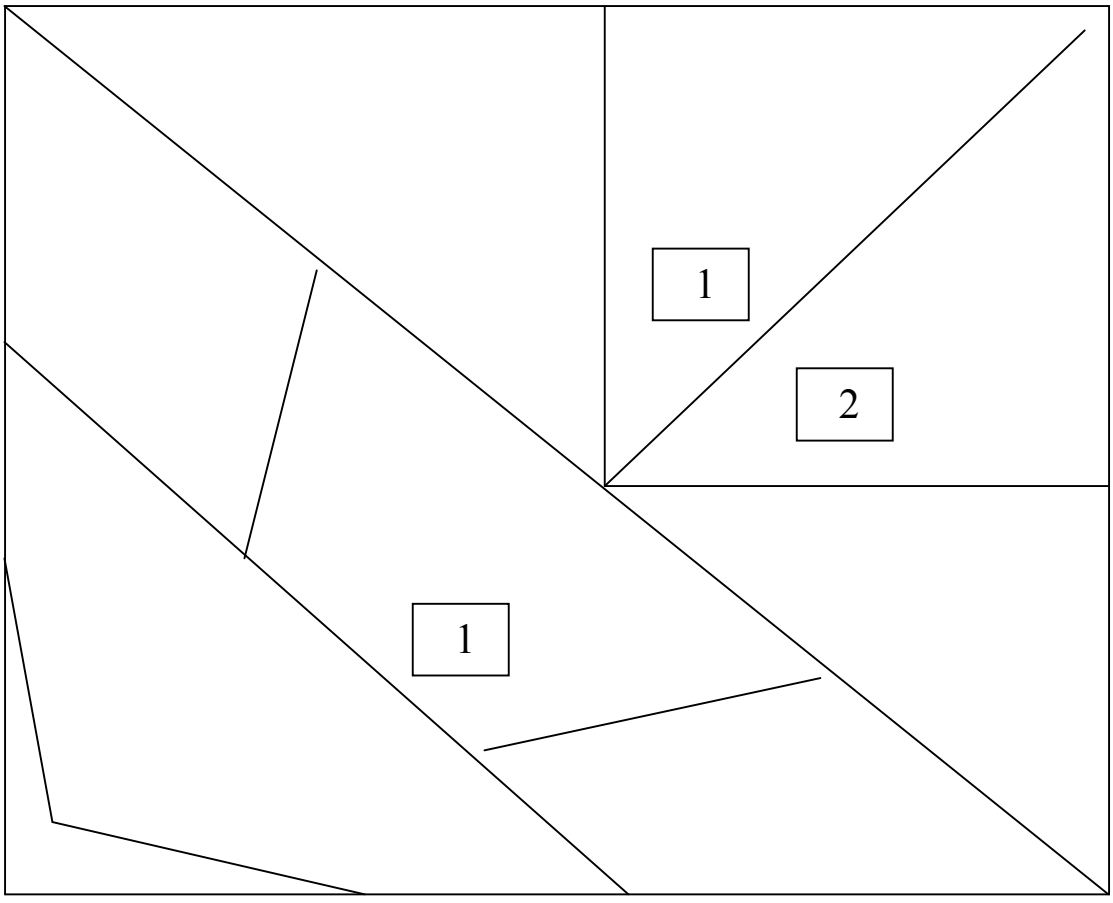
Operations:

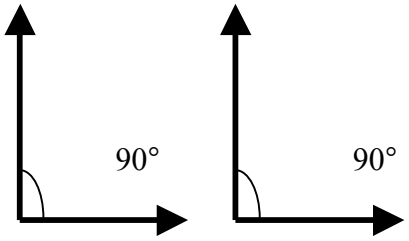
- Cut pipe cleaners into half-inch segments.
- Insert one to three pipe cleaner inserts into ends of coffee stirrers.
- Connect coffee stirrers by pipe cleaners to create geometric figures.

Teacher Resource 6
Sample Students
Responses for
Completion of Stain Glass Window

Draw a figure that demonstrates the angle relationships we discussed today, based on the following criteria:

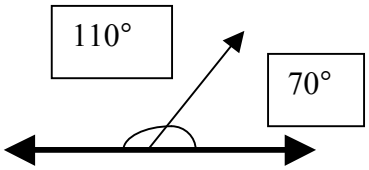
- At least two supplementary angles
- At least four complementary angles
- At least two congruent angles





Congruent Angles:

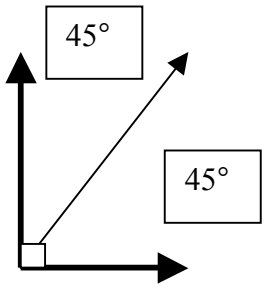
Two angles that have the same angle measure.



Supplementary Angles:

The sum of two angle measures that equal 180 degrees.

110° + 70° = 180°



Complementary Angles:

The sum of two angle measures that equal 90 degrees.

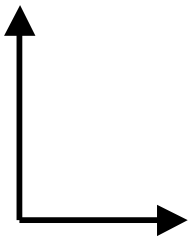
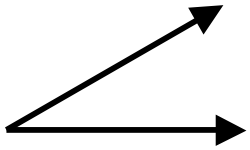
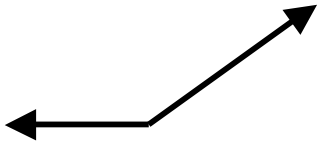
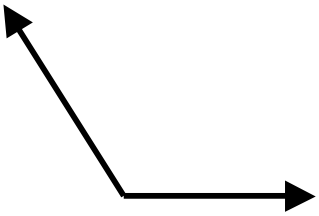
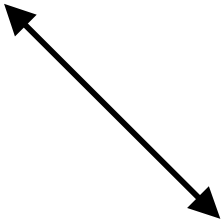
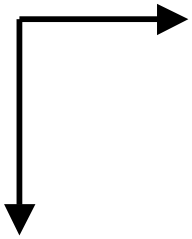
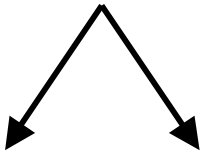
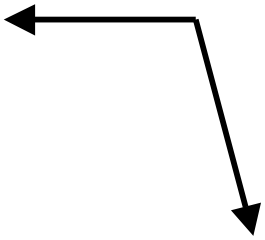
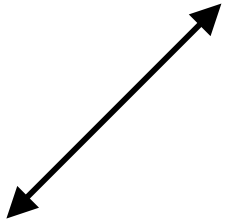
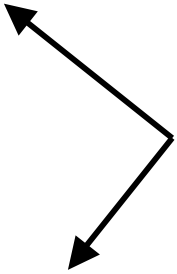
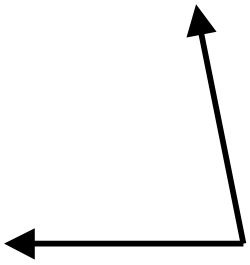
45° + 45° = 90°

Teacher Resource 8
Grid for Congruent,
Complementary and
Supplementary

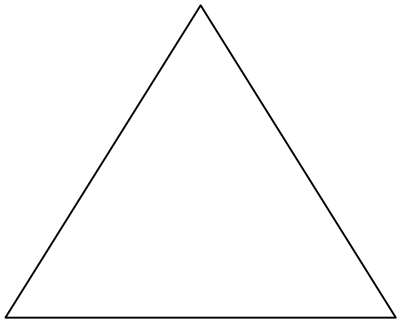
Supplementary	Congruent	Complementary

Teacher Resource 9

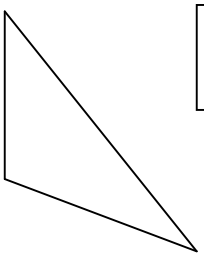
Angle Sort Cards

Right 	**Acute** 	**Obtuse** 
Obtuse 	**Straight** 	**Right** 
Acute 	**Obtuse** 	**Straight** 
Straight 	**Right** 	**Acute** 

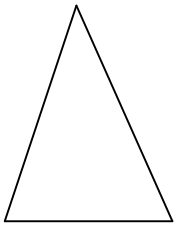
Teacher Resource 10
Six Classifications of Triangles



Equilateral Triangle

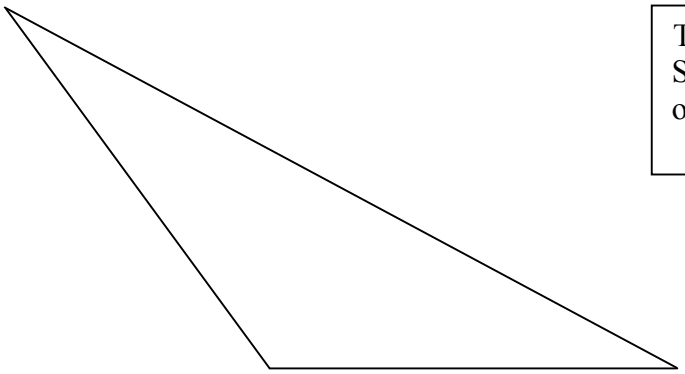


Scalene Triangle

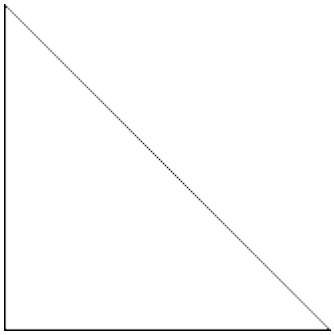


Isosceles Triangle

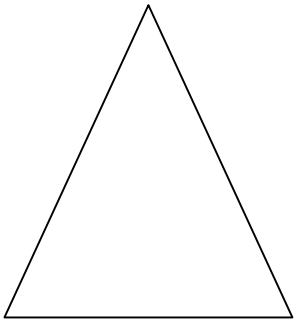
Teacher Resource 10
Six Classifications
of Triangles



Obtuse Triangle



Right
Triangle



Acute
Triangle

Triangle Classification Chart Sample

ANGLES	**SIDES**