**Lesson Cycle**

**Lesson Title/Topic:** “Looking at All Angles”

**Concept:** Right, Acute, and Obtuse Angles

**Standards/Rationale:** 4th Grade TEKS 111.6 (b) (6) (A) – Identify points, lines, line segments, rays, angles, and perpendicular and parallel lines;

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| **Learning Target:**  | **Assessment:**  |
| Students will construct and label 3 types of angles, using popsicle sticks, with 90% accuracy. | Completed popsicle angle project.  |

**Materials:** Individual dry erase boards with markers, projector, projector image of acute/obtuse cartoon, protractors, popsicle sticks, large multi-color construction paper, glue, colored markers

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| **Lesson Cycle:** **(Direct instruction)**  |

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| **The teacher will:** | **The student will:** |
| **Focus/Mental Set:** Place dry erase boards and marker at each seat. Ask students to think about lesson day before. (Students previously learned about protractor tool, parts of angle and 90° right angle only.)* Have students draw a right angle on their boards. Ask student to see if their angle matches all table friends. If not, discuss why. What qualifies your angle as a right angle? What does 90° mean?
* Ask students to circle the vertex of their right angle. Ask student if they circled the same part as their table friends. If not, discuss why.
* Ask students to circle the rays of their angle. Ask student if they circled the same part as their table friends. If not, discuss why.
* Ask students to walk around the classroom and locate 2 examples of a right angle. Ex. corner of door frame or window, corner of book.
* Ask students what they discovered inside the classroom that had right angles.
* Teacher to explain we will learn about 2 additional angles today. An acute angle and an obtuse angle. Ask students to right this on sheet of paper:

-A right angle is a 90°angle.-An acute angle is less than 90°. -An obtuse angle is more than 90° and less than 180°. | * Students to sit at seat with dry erase board and wait for instruction.

Reflect and think about previous lesson. * Draw right angle and discuss.
* Circle vertex of angle and discuss.
* Circle rays of angle and discuss.
* Walk around room. Find examples and discuss.
* Students to listen and note definitions of right, acute and obtuse angle definitions.
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| **Teacher Input:*** Show cartoon image on projector “I’m not being obtuse but, you’re a cute girl.” Leave image up during lesson. Throughout lesson, students will comprehend if they don’t at first. (Teacher may need to define 2nd meaning of obtuse-annoying or insensitive.)
* Give students a few minutes to think of something small and cute. Ask them to draw it on their dry erase board. Ex. a ladybug, a puppy, a flower, etc.
* Let students share their drawings with one another.
* Explain that A CUTE, SMALL things are like ACUTE, SMALL angles. With show of fingers, make tiny gesture.
* Define acute angle as less than 90° and illustrate examples on the board.
* Ask student to stand up and spread out. Tell them we are going to demonstrate acute angles using our arms. Our bodies will be the vertex and arms will the rays. Have them all demonstrate by placing arms out in small acute position.
* Make sure all students have correct positioning and then sit back down.
* Have students draw an acute angle next to their cute drawing on their dry erase boards. Observe accuracy.
* Have students speak the word “OBTUSE” out loud. Tell students to open their mouths as wide as they can when saying OOOOObtuse. Show them, their mouths are wide, just like the obtuse angle
* Explain that our mouths open WIDE just like an obtuse angle opens WIDE.
* Define obtuse angle as greater than 90° and let than 180°.
* Have students draw an obtuse angle on their dry erase board.
* Ask student to stand up again and spread out. Tell them we are going to demonstrate obtuse angles using our arms. Have them all demonstrate by placing arms out in small acute position.
* Make sure all students have correct positioning and then sit back down.
* Show more complex movement/angle demonstration by making angles downward. Ask student if it matters which way the angle faces? Can it face upward, downward, left, right?
* Ask students to stand up one last time, this time closing their eyes. Call out ACUTE and OBTUSE and have students make arm placements accordingly. Also, call out RIGHT and STRAIGHT as practice from prior lesson. Continue this practice, going faster and faster as observing that each student is catching on.
* Refer to cartoon image on projector to see if students “get it”.
* Remove cartoon image and play music video:

<https://www.youtube.com/watch?v=NVuMULQjb3o> . (Video is 1 min 46 secs and ties together all 3 angles, vertex and protractor.) | * Observe cartoon.
* Student think and draw picture.
* Put marker down when complete.
* Share drawings.
* Stand and demonstrate acute angle with arms.

 * Draw acute angle and put marker down.
* Participate in OPEN mouth demonstration.
* Draw obtuse angle and put marker down.
* Stand up and demonstrate obtuse angle with arms.
* Stand up and demonstrate all angles with arms.

 * Watch short music video.
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| **Guided Practice:*** Hand out supplies to each table, including construction paper, glue, popsicle sticks and markers.
* Tell students to wait for instruction before touching materials.
* Show example for students to reference.
* Explain assignment is to glue popsicle sticks on construction paper forming 1 right angle, 1 acute angle and 1 obtuse angle. Using markers, label each accordingly. Title should be added to the top of their projects and names on back.
* As students begin working, observe their progress and understanding.
* Encourage students to work neatly and to have fun with creative color choices. They may interact with one another about their projects. However, focus on accuracy of assignment. Is their work correct? Provide verbal feedback.
 | * Put paper with written definitions in desk.
* Wait for instruction while teacher is handing out materials.
* Students to work on popsicle angle project, using precise angle examples. Students should work, neatly and creatively with colors and supplies provided. Write with different color markers, cut out multiple colors of construction paper to frame labels, color popcicle sticks with markers, etc.
* Students to raise hand and ask for help as needed.
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| **Independent Practice:*** Provide protractor for each student.
* Ask student to use the protractor and measure each angle. Tell them to be sure and line up hole in protractor with vertex.
* Write the specific degree measured with protractor inside the angle with marker.
* Reiterate neatness and creativity with color choices. Projects to be displayed on “Looking At All Angles” discussion board.
 | * Student will use protractor to measure their angles. Be sure hole in protractor is aligned up with vertex.
* Determine degree and write answer inside of each angle.
* Student to remember neatness and color choice as well.
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| **Closure:*** Ask students to turn to their shoulder buddy.
* Ask student to tell their shoulder buddy what their favorite angle is and why? Right, Acute or Obtuse
 | * Face shoulder buddy
* Tell them what your favorite angle is?
* Why is this your favorite angle?
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| **Options:** |   |
| ***Enrichment:*** | ***Reteach:*** |

**Modifications/Correctives:**

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| **Special Education – Hearing Impairment**Accommodations * Student will sit near teacher. Lesson will be spoken loud, slow, and clear.
* Student may work with a partner.
* Teacher will work directly with student on closure question/answer.

Modifications* Student will be provided extra time to complete assignment.
* Student will be provided with visual handouts to reference during lesson.

**504 Plan – ADHD**Accommodations * Classroom will have flexible seating (ex. fidget bands on chair).
* Assignment will be broken down into numbered steps, student will be given extra time to complete assignment.

**504 Plan – Low Self-esteem**Accommodations * Positivity will be accentuated criticism will be avoided.
* If work is done well on dry erase board, compliment work and share with class.
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**References:**