Marietta City Schools
District Unit 5 Planner

Fourth Grade

Unit Name	***Unit 5:*** *Building Conceptual Understanding of Angle Measurement*	**Unit duration (Days)**	***4 weeks***

GA K-12 Standards

Previously students have partitioned shapes into halves, thirds, quarters (fourths), determined equivalences for simple fractions, and identifying and comparing fractional parts. In this unit, students will be building on this understanding to compare fractions less than 1, add and subtract fractions with like denominators, and measure to the nearest 1/8 of an inch.

4.GSR.7 Investigate the concepts of angles and angle measurement. Estimate and measure angles.

- **4.GSR.7.1** Recognize angles as geometric shapes formed when two rays share a common endpoint. Draw right, acute, and obtuse angles.
- **4.GSR.7.2** Measure angles in reference to a circle with the center at the common endpoint of two rays. Determine an angle's measure in relation to the 360 degrees in a circle through division or as a missing factor problem.

4.MP.1-8 Display perseverance and patience in problem-solving. Demonstrate skills and strategies needed to succeed in mathematics, including critical thinking, reasoning, and effective collaboration and expression. Seek help and apply feedback. Set and monitor goals. *(It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.)*

- **MP.1** Make sense of problems and persevere in solving them.
- **MP.2** Reason abstractly and quantitatively.
- **MP.3** Construct viable arguments and critique the reasoning of others.
- **MP.4** Model with mathematics.
- **MP.5** Use appropriate tools strategically.
- **MP.6** Attend to precision.
- **MP.7** Look for and make use of structure.
- **MP.8** Look for and express regularity in repeated reasoning.

The Framework for Statistical Reasoning and the Mathematical Modeling Framework should be taught throughout the units. The K-12 Mathematical Practices should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

I Can Statements

- I can determine whether an angle is acute, obtuse, or right using a known right angle.
- I can identify an angle within a geometric figure.

- I can measure and classify an angle using a known right angle.
- I can use a variety of tools to create right, acute, and obtuse angles.
- I can draw right, acute, and obtuse angles based on my understanding of a right angle.
- I can measure and classify an angle using non standard units.
- I can measure angles using non- standard units of measurement, such as wedges.
- I can determine whether an angle is acute, obtuse or right using a known right angle.
- I can use different pattern blocks to create angle measurements within a 360-degree measure as it relates to the circle.
- I can determine a missing factor in relation to the 360-degrees in a circle.
- I can use missing factors or division to determine the angle measurement of different pattern blocks or angles in the real-world within a 360-degree measurement.
- I can approximate an angle's measure in relation to the 360 degrees in a circle (specifically a clock) through division or as a missing factor problem.
- I can measure angles on a circle.
- I can measure angles (in reference to a circle) with the center at the common endpoint of two rays.
- I can determine an angle's measure in relation to the 360 degrees in a circle through division or as a missing factor problem.

Tier II Vocabulary Words- High Frequency Multiple Meaning	**Tier III Vocabulary Words-** Subject/ Content Related Words
wedge, degree, point	angle, ray, right angle, center, obtuse angle, acute angle, iteration, protractor K-12 Mathematics Glossary

Assessments	
Formative Assessment(s): ● MCS K-5 Activity & Assessment Collection ● MIP Formative Assessment p. 304 (lines and angles) ● MIP Formative Assessment p. 303 (draw and label angles) ● 4.GSR.7 MCS Mini Assessment	**Summative Assessment** Unit 5 Summative Assessment Unit 5 Blueprint

It is the responsibility of each schools' grade level PLC to identify appropriate instructional lessons and resources, based on data and student needs, using the suggested pacing duration*. The following learning tasks have been vetted to align to the standards included in this unit. The GA Dept. of Education strongly recommends that any additional tasks, resources, and/or assessments used for instruction should be vetted using the Quality Assurance Rubric, to ensure alignment to the state standards.*

Objective or Content	**Learning Experiences**		**Differentiation Considerations**
4.GSR.7 Investigate the concepts of angles and angle measurement.	**GA DOE Learning Plans** **What's your Angle?** **4.GSR.7.1** *In this learning plan, students will classify and draw*	**MCS Curriculum Resources** **SAVVAS enVision Topic 15 : Geometric Measurement: Understand Concepts of Angles and Angle Measurement** *Students develop an understanding of angle concepts including*	**GADOE Intervention Tasks** Angle Sort: Identify, classify, and compare angles and identify the angles in two dimensional figures.

Estimate and measure angles.	*angles using a variety of tools. They will determine if the angles are acute, right or obtuse based on the understanding that a paper corner is a right angle. (Suggested Time Frame: 1-2 days)* ● Teacher Guidance ● Student Reproducibles **Measuring Angles Using Non-Standard Units** **4.GSR.7.1 and 4.GSR.7.2** *In this learning plan, students will learn about wedges as a nonstandard unit to measure angles. Students will use common-sized wedges to measure and explore angles. (Suggested Time Frame: 1 -2 Days)* ● Teacher Guidance ● Student Reproducibles **More Measuring** *In this learning plan, students will use common-sized wedges to measure and explore angles. (Suggested Time Frame: 1-2 days)* ● Teacher Guidance ● Student Reproducibles **Discovering Degrees** **4.GSR.7.2** *In this learning plan, students will determine an angle's measurement using pattern block angles as it relates to 360-degrees in a circle. (Suggested Time Frame: 2-3 days)* ● Teacher Guidance ● Student Reproducibles **Clock Angles** **4.GSR.7.2** *In this learning plan, students begin to explore the angle measurements that the clock hands make, understanding that the clock is a circle with 30° angles when the hands are directly over two of the numbers. (Suggested Time Frame: 1-2 days)*	*angle measurement.* ● Lesson 15-1: Lines, Rays, and Angles ● Lesson 15-2: Understanding Angles and Unit Angles ● Lesson 15-3: Measure with Unit Angles ● Lesson 15-4: Measure and Draw Angles **MIP Module 14-Exploring Geometry and Geometric Measures** *Students explore the meanings of these through investigations and examples and develop definitions for types of lines and angles.* ● Points, Lines, Line Segments, and Rays p. 294-296 ● Geoboards p. 297-299 ● Measuring Angles p. 299-303 ● Comparing Angles with Geoboards p. 304-307 ● Introducing the Protractor p. 307-308 ● Drawing Angles with a Protractor p. 309- 310 ● Introducing the Protractor p. 307-308 ● Drawing Angles with a Protractor p. 309-310 ● Talk About It! Write About It! P. 311 ● Making Angles p. 311-312 ● Angle Puzzle p. 312 ● Estimating Degree Measurements with Angle Plates p. 312 ● Exploring Adjacent Angles p. 313-314	

	• Teacher Guidance • Student Reproducibles **Creating a 360° Protractor** **4.GSR.7.2** *In this learning plan, students will begin to explore using a 360° protractor that they have created. They will look at other angles in addition to the ones that they have been exploring in the previous plans. (Suggested Time Frame: 3-4 days)* • Teacher Guidance • Student Reproducibles		

Content Resources	
MCS Links: • MCS Math Curriculum Map • MCS Math Instructional Framework **GA DOE Links:** *Access all GADOE Curriculum Resources at the following site: GaDOE Inspire.*	**Additional Resources:** • Estimation Activities/Estimation 180 • Which One Doesn't Belong? • Same or Different? • Splat! • Numberock - Classifying Triangles • Splat Math: Angles and Triangles • Estimating Angles Challenge • Clocks and Angles