### Math - Angles Unit Organizer

**6th Grade Core Knowledge - Huey/Jurgens/ Allen**

**Summary**

Students will review angle properties of triangles and quadrilaterals as well as learn new properties of angles. Students are highly encouraged to memorize these properties. Students will apply previous and new knowledge of angle properties to find unknown angles in problems which involve triangles and quadrilaterals.

**The Big Idea**

Angle properties can be used and combined to find the measurement of unknown angles. Angle problems are like puzzles and can be solved logically.

**Common Core Standards**

*(Common Core identifier listed in parentheses)*

**Colorado State Standards**

**MA 6.P.2.1.4.iv**: Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).(CCSS: 6.EE.2c)

**MA 7.GB.a**: Use facts about supplementary, complementary, vertical, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure. (CCSS: 7.G.B.5)

**MA 6.NS.1.2.a**: Fluently divide multi-digit numbers using standard algorithms. (CCSS: 6.NS.2)

**MA 6.NS.1.2.b:** Fluently add, subtract, multiply, and divide multidigit decimals using standard algorithms for each operation. (CCSS: 6.NS.3)

**MA 6.NS.1.2.c:** Find the greatest common factor of two whole numbers less than or equal to 100. (CCSS:6.NS.4)

**MA 6.NS.1.2.d:** Find the least common multiple of two whole numbers less than or equal to 12. (CCSS: 6.NS.4)

**MA 6.G.4.1.a.i** Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes. (CCSS: 6.G.1)

**MA 6.G.4.1.a.ii** Apply these techniques in the context of solving real-world and mathematical problems. (CCSS: 6.G.1)

**Core Knowledge Unit**

Geometry

* Angles:

-Identify and measure the degrees in angles (review terms: right, acute, obtuse, straight).

-Bisect an angle.

-Construct an angle congruent to given angle.

-Construct a figure congruent to a given figure, using reflection over a line of symmetry, and identify corresponding parts.

-Show how congruent plane figures can be made to correspond through reflection, rotation, and translation

**Core Knowledge Language Arts**

• Participate civilly and productively in group discussions.

**Previous Unit:** Volume

**Prior Knowledge**

**Grade 3**

•Identify angles by letter names; identify a right angle; know that there are four right angles in a square or rectangle.

• Recognize and draw congruent figures; identify a line of symmetry, and create symmetric figures.

**Grade 4**

• Recognize similar and congruent figures.

• Identify angles; identify angles as right, acute, or obtuse.

**Grade 5**

• Measure the degrees in angles, and know that: right angle =90◦, acute angle: less than 90◦, obtuse angle: greater than 90◦, straight angle=180◦.

• Know what it means for triangles to be congruent.

**Next Unit:** N/A

**What Students will Learn in Future Grades**

**Grade 7 and 8**

• Construct parallel lines and transversal using a compass and straight edge.

• Understand congruent angles, vertical angles, complementary angles, supplementary angles, adjacent angles, corresponding angles, and alternate interior and alternate exterior angles.

• Know that the shape of a triangle is determined by two (hence all three) of its angles (triangle similarity) and solve related problems.

• Know the similar triangles connection (AA Similarity) with slope and that this is the

tangent of the angle the line makes with the x-axis.

**Cross Curricular Links**

**N/A**

**Additional Resources**

*For Teachers:*

* *6b Primary Mathematics Textbook: Standards Edition,* Marshall Cavendish Education
* *Extra Practice for Primary Mathematics*, Marshall Cavendish Education