

Davison Community Schools
ADVISORY CURRICULUM COUNCIL
Phase II, February 13, 2017
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7th grade CI - Math
Course Essential Questions (from Phase I report): <ul style="list-style-type: none"> ● How does mathematics help us in finding patterns and relationships in the real-world? ● How can we use mathematics to solve real-world problems?
Tier 3 Vocabulary Words are highlighted in yellow

Unit 1: Multiplication and Division	
Essential Questions: <ul style="list-style-type: none"> ● How is multiplication related to addition? ● How is division related to subtraction? 	Essential Understanding: <ul style="list-style-type: none"> ● Multiplication can be found by repeatedly adding groups of equal quantities. ● Division can be thought of as subtracting objects from a set and placing them into a set number of groups determined by the divisor.

Curriculum Standards- DOK noted where applicable with Standards
EE.7.NS.2.a: Solve multiplication problems with products to 100. (DOK I/II)
EE.7.NS.2.b: Solve division problems with divisors up to five and also with a divisor of 10 without remainders. (DOK I/II)

LEARNING TARGETS

Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> ● multiplication can be represented by creating repeated groups of equal number of objects. ● calculator key strokes for finding multiplication ● multiplication relates to skip counting ● double means to replicate twice the amount of a set ● division is related to repeated subtraction in a 1-to-1 correspondance. ● the division symbol means to create equal subsets of a set number of groups. ● when dividing, the divisor is the number of subsets a larger set is divided into. 	<ul style="list-style-type: none"> ● solve a simple multiplication problem (one factor times another) using concrete objects or a calculator. ● solve a simple multiplication problem (one factor times another) with products up to 30 using concrete objects and/or a calculator. ● identify double the amount of specified quantity (limited to 1, 2, 3 or 4). ● solve division problems with a divisor of 2, 5, or 10 or where the dividend is less than 30 using concrete objects or a calculator. ● solve division problems with a divisor of 2,

	<p>or 10 or where the dividend is less than 20 using concrete objects and/or a calculator.</p> <ul style="list-style-type: none">• identify a larger set of up to 10 that has been divided into 2 or 3 equal subsets.
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Unit 2: Adding fractions	
Essential Questions: <ul style="list-style-type: none"> How do you add fractions? 	Essential Understanding: <ul style="list-style-type: none"> To add fractions that have the same denominator, count the total number of equal subsets of the whole.
Curriculum Standards- DOK noted where applicable with Standards	
EE.7.NS.1: Add fractions with like denominators (halves, thirds, fourths, and tenths) with sums less than or equal to 1. (DOK I/II)	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> two halves make up one whole to add fractions with the same denominator, count the total number of equal subsets of the whole there are. 	<ul style="list-style-type: none"> add fractions with common denominators with sums less than or equal to 1. add fractions with common denominators with sums less than or equal to 1 and limited to halves, thirds, and fourths (fractions shown as models). identify that the sum of two halves is equal to 1 whole.

Unit 3: Fractions, decimals, and money	
Essential Questions: <ul style="list-style-type: none"> How do fractions, decimals and money relate to each other. 	Essential Understanding: <ul style="list-style-type: none"> Money is a great example of how fractions and decimals are used to make sense of number relationships.
Curriculum Standards- DOK noted where applicable with Standards	
<p>EE.7.NS.2.c-d: Express a fraction with a denominator of 10 as a decimal. (DOK I/II)</p> <p>EE.7.NS.3: Compare quantities represented as decimals in real-world examples to tenths. (DOK I/II)</p> <p>EE.7.EE.1: Use the properties of operations as strategies to demonstrate that expressions are equivalent. (DOK I/II)</p> <p>EE.7.EE.2: Identify an arithmetic sequence of whole numbers with a whole-number common difference. (DOK I/II)</p>	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> fractions and decimals can be equivalent. 50 cents is half of a dollar. 4 quarters is equivalent to a dollar. one-half is one of two equal subsets of a whole. one-fourth is one-half of one-half. what a \$1, \$5, and \$10 bill looks like. the difference the appearance between pennies, nickels, dimes, and quarters. equivalence means same. a decimal represents part of a whole. skip counting sequence using 2's, 5's, and 10's counting sequence by 1's to 100. 	<ul style="list-style-type: none"> express a fraction with a denominator of 10 as a decimal (functional skill is expressing money as a fraction/decimal of a dollar, limited to tenths of a dollar: \$0.10, \$0.20, etc.) identify that one-half equals .50 and one-fourth equals .25 with models as support. (e.g., model of .50 is the same as one-half of a dollar.) use models to identify the fractions one-half and one-fourth. compare quantities represented as decimals in real-world examples to tenths (e.g., a combination of bills and coins, a discount of 10 percent = .10). identify a combination of coins and bills up to \$5 using decimal notation. (e.g., \$2.50 is equal to two one-dollar bills and two quarters). differentiate coins and bills from each

	<p>other and from other similar objects.</p> <ul style="list-style-type: none">● use the properties of operations as strategies to demonstrate that expressions are equivalent.● recognize an arithmetic sequence of numbers with and without decimals (e.g., 2, 4, 6; 2.5, 4.5, 6.5) with a whole-number common difference.● recognize an arithmetic sequence of whole numbers with and without a model and limited to 2s, 5s, and 10s.● recognize the number that comes next in a sequence of numbers to 10 in sequential order with a difference of 1.
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Unit 4: Geometry	
<p>Essential Questions:</p> <ul style="list-style-type: none"> • How do we classify 2D and 3D shapes? • What is perimeter? • What is area? 	<p>Essential Understanding:</p> <ul style="list-style-type: none"> • Shapes, both 2D and 3D are classified by their shape, number of sides, and number of angles. • Perimeter is the sum of all of a shapes sides. • Area is the space inside a shape and is measured by the number of unit squares that fit inside a shape.
Curriculum Standards- DOK noted where applicable with Standards	
<p>EE.7.G.1: Match two similar geometric shapes that are proportional in size and in the same orientation. (DOK I/II)</p> <p>EE.7.G.2: Recognize geometric shapes with given conditions. (DOK I)</p> <p>EE.7.G.3: Match a two-dimensional shape with a three-dimensional shape that shares an attribute. (DOK I)</p> <p>EE.7.G.4: Determine the perimeter of a rectangle by adding the measures of the sides. (DOK I/II)</p> <p>EE.7.G.6: Determine the area of a rectangle using the formula for length \times width, and confirm the result using tiling or partitioning into unit squares. (DOK I/II)</p>	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> • 2D shapes are flat • 3D shapes are solids • examples of objects in real-life that are like 2D shapes • examples of objects in real-life that are like 3D shapes • what squares, circles, triangles, and stars look like. • different shapes have different attributes • shapes are identified based on their attributes. • perimeter is the sum of the lengths of all of the sides of a 2D shape. • area is the space inside a 2D shape. • area is measured by the number of unit squares that fit inside the space. • area can be found by tiling or partitioning a shape into unit squares and counting the number of unit squares. • area of a rectangle can be found by multiplying its length by its width. • length is typically the longer dimension • width is typically the shorter dimension 	<ul style="list-style-type: none"> • identify two similar two- and three-dimensional shapes that are proportional in size and in the same orientation. • identify two similar two-dimensional shapes or objects that are proportional in size and in the same orientation; limited to square, circle, and triangle. (e.g., a postage stamp and a picture frame). • match a similar two-dimensional shape with an object that is proportional in size and in the same orientation; limited to round and square (e.g., an analog clock and a coin). • recognize geometric shapes with specified attributes. • identify common two-dimensional shapes (e.g., square, circle, triangle, and star). • differentiate between round/circle and square or sphere and cube. • match a two-dimensional shape with a

three-dimensional shape that shares an attribute.

- determine the perimeter of a rectangle by adding the measures of the sides.
- use a model to determine the perimeter of a rectangle by adding the side lengths; lengths limited to 1, 2, or 3.
- match objects to their outlines
- find the area of a rectangle when given the formula of length x width, a model, and the dimensions of the rectangle up to 40 square units.
- use unit squares to determine the area of a model of a rectangle up to 20 square units.
- count unit squares to find the area of a model of a rectangle up to 6 square units.

Unit 5: Angles	
Essential Questions: <ul style="list-style-type: none"> How can we identify different angles? 	Essential Understanding: <ul style="list-style-type: none"> Angles are identified as being acute, obtuse, or right, depending on if they have measures less, greater, or equal to a right angle.
Curriculum Standards- DOK noted where applicable with Standards	
EE.7.G.5: Recognize angles that are acute, obtuse, and right. (DOK I)	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> what a corner is and can list some shapes that have them a right angle makes a 90 degree corner. obtuse angles have a measure greater than a right angle acute angles have a measure less than a right angle 	<ul style="list-style-type: none"> recognize an angle as being greater than or less than a right angle when given a model of a right angle. match an angle to a shape that has the same angle. differentiate between a shape that has corners and one that does not.

Unit 6: Data - Graphs, tables, and relationships	
Essential Questions: <ul style="list-style-type: none"> How can looking at data graphs help us make decisions? 	Essential Understanding: <ul style="list-style-type: none"> Graphs provide us with a picture of what the data is saying and helps us see what is going on.
Curriculum Standards- DOK noted where applicable with Standards	
<p>EE.7.SP.1-2: Answer a question related to the collected data from an experiment, given a model of data, or from data collected by the student. (DOK I/II)</p> <p>EE.7.SP.3: Compare two sets of data within a single data display such as a picture graph, line plot, or bar graph. (DOK I/II)</p> <p>EE.7.SP.5-7: Describe the probability of events occurring as possible or impossible. (DOK I)</p>	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> the taller the picture graph the larger the quantity for that category. the higher the line plot, the larger the quantity for that category. the taller the bar graph, the larger the quantity for that category. examples of activities that are likely to happen. examples of possible events that occur in the natural environment. probability of events occurring can be identified as possible or impossible. probablility is a measure describing the certainty of an event occurring. 	<ul style="list-style-type: none"> answer a question related to the collected data from an experiment, given a model of data, or from data collected by the student. solve problems using data presented within a single data display: tables, bar graphs, circle graphs, tallies, and pictographs, including graphs and charts that have more than one set of data. compare sets of data within two similar data displays (2 bar graphs or 2 picture graphs) to determine whether two quantities are the same, more than, or less than. identify the quantity of data, limited to 1, 2, or 3 on a pictograph. describe the probability of events occurring as possible or impossible. identify possible events that occur in the natural environment (e.g., possible: sun produces warmth; rain results in wet). identify when activities are likely to happen (e.g., go to school in the morning, eat lunch)

	at noon).
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Unit 7: Data - Function Tables

<p>Essential Questions:</p> <ul style="list-style-type: none"> • What does it mean to solve an equation? 	<p>Essential Understanding:</p> <ul style="list-style-type: none"> • Solving an equation means using strategies to determine the value(s) for the variable that would make it true.
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Curriculum Standards- DOK noted where applicable with Standards

EE.7.EE.4: Use the concept of equality with models to solve one-step addition and subtraction equations. (DOK II)

LEARNING TARGETS

Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> • a variable (box) represents an unknown value. • an equation is a mathematical sentence that uses symbols and numbers to show equality. • count sequence within 5 • strategies for solving one-step addition equations with the start unknown. • strategies for solving one-step subtraction equations with the start unknown. • strategies for solving one-step addition equations with the result unknown. • strategies for solving one-step subtraction equations with the result unknown. 	<ul style="list-style-type: none"> • solve one-step addition and subtraction equations with an unknown represented with a box. (e.g., $\text{box} + 5 = 10$; $\text{box} - 2 = 3$). • solve one-step addition and subtraction equations, where the unknown is the sum or difference. paired with pictures or objects. (e.g., $5 + 5 = \text{box}$; $5 - 2 = \text{box}$) • identify how much is “one more” or when one is “taken away” from a quantity up to 5 with a model.

Unit 8: Ratios	
Essential Questions: <ul style="list-style-type: none"> How are ratios used to create a model of a life sized object? 	Essential Understanding: <ul style="list-style-type: none"> Ratios are a comparison of similar attributes of a model to a life-size object.
Curriculum Standards- DOK noted where applicable with Standards	
EE.7.RP.1-3: Use a ratio to model or describe a relationship. (DOK I/II)	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> how a ratio can be used to compare objects of different size. life size vs. model size models can be larger or smaller than an object's life size. a ratio is a comparison of two numbers using a fraction or colon. 	<ul style="list-style-type: none"> complete a ratio using numbers to describe a relationship. use a simple ratio to describe a relationship. recognize a 1:1 relationship of a given modeled ratio.