

Davison Community Schools
ADVISORY CURRICULUM COUNCIL
Phase II, February 13, 2017
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8th 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: Subtract like fractions	
Essential Questions: <ul style="list-style-type: none"> • How do you subtract like denominator fractions? 	Essential Understanding: <ul style="list-style-type: none"> • To subtract like denominator fractions, subtract the numerators.
Curriculum Standards- DOK noted where applicable with Standards	
EE.8.NS.1: Subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one. (DOK I/II)	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> • two halves make a whole and therefore subtracting one half from a whole is one half. • when subtracting fractions with common denominators, count the number of equal shaded partitions left after removing the desired minuend. • the numerator is the top number of a fraction • the denominator is the bottom number of a fraction. 	<ul style="list-style-type: none"> • add and subtract fractions with common denominators (limited to halves, thirds, fourths and tenths) with sums and differences less than or equal to one. • add and subtract fractions with common denominators with sums or differences less than or equal to one and limited to halves, thirds, and fourths (fractions shown as models). • can recognize that subtracting one half from one whole is one half.

Unit 2: Converting Fractions to Decimals	
Essential Questions: <ul style="list-style-type: none"> How can money help us understand the relationship between fractions and decimals? 	Essential Understanding: <ul style="list-style-type: none"> Money's base unit is the penny, or 1 cent, which is 1/100th of a dollar.
Curriculum Standards- DOK noted where applicable with Standards	
EE.8.NS.2.a: Express a fraction with a denominator of 100 as a decimal. (DOK I/II)	
EE.8.NS.2.b: Compare quantities represented as decimals in real-world examples to hundredths. (DOK I/II)	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> that \$1.00 is equivalent to 100 pennies. the difference in appearance of the \$1, \$5, \$10, and \$20 bills. examples of exchanges that can be made between denominations of coins and bills. to compare decimals, compare the place values of the numerals. equivalence means same. a decimal represents part of a whole. fractions and decimals can be equivalent. 	<ul style="list-style-type: none"> express a fraction with a denominator of 100 as a decimal. (Functional skill is expressing money as a fraction/decimal of a dollar (e.g. 23/100 of a dollar = \$0.23, etc.) 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 other and from other similar objects. compare quantities represented as decimals in real-world examples to hundredths.

Unit 3: Number Sense	
Essential Questions: <ul style="list-style-type: none"> How are numbers made up? 	Essential Understanding: <ul style="list-style-type: none"> In our number system of base-ten, place values are made up of powers of 10.
Curriculum Standards- DOK noted where applicable with Standards	
EE.8.EE.3-4: Compose and decompose whole numbers up to 999. (DOK I/II)	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> A flat is 100 units, a rod is 10 units, and a unit cube is 1. 10 unit cubes can be exchanged for 1 rod. place values. 	<ul style="list-style-type: none"> compose and decompose whole numbers. compose and decompose two-digit whole numbers with base 10 blocks. differentiate between a single unit or a few single blocks and a group of 10.

Unit 4: Geometry - Orientation and Congruency

<p>Essential Questions:</p> <ul style="list-style-type: none"> • What is the difference between similarity and congruence of shapes. 	<p>Essential Understanding:</p> <ul style="list-style-type: none"> • Similar shapes are proportional, looking the same, but not necessarily the same size. • Congruent shapes are exactly the same size and shape. • Orientation doesn't affect shapes being similar or congruent.
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Curriculum Standards- DOK noted where applicable with Standards

EE.8.G.1: Recognize translations, rotations, and reflections of shapes. (DOK I/II)

EE.8.G.2: Identify shapes that are congruent. (DOK I/II)

EE.8.G.4: Identify similar shapes with and without rotation. (DOK I/II)

LEARNING TARGETS

<p>Knowledge/Content I Know ...</p>	<p>Skills/Processes I Can ...</p>
<ul style="list-style-type: none"> • similar means that shapes look the same, but aren't necessarily the same size. • congruent means that shapes are exactly the same. • shapes can be congruent or similar regardless of orientation. • translations consist of moving an object or changing its size. • rotations are when an object is turned a specific amount. • reflections are mirror images. 	<ul style="list-style-type: none"> • recognize translations, rotations, and reflections of shapes. • identify shapes that are congruent. • identify similar shapes without rotation. • match similar two-dimensional shapes, limited to circle, square, rectangle and triangle when presented without rotation. • identify similar shapes and/or letters with and without rotation. • identify similar shapes and/or letters with and without rotation (limited to quarter- and half-turns). • match similar two-dimensional shapes, limited to circle, square, star, and triangle with the same shape highlighted with a functional context (e.g., a rectangle and rectangle window frame).

Unit 5: Angles - Identify and compare	
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.8.G.5: Compare any angle to a right angle, and describe the angle as greater than, less than, or congruent to a right angle. (DOK I/II)	
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, less than, or equal to a right angle when given a model of a right angle. recognize a right angle. identify a corner when compared with another attribute or shape without a corner.

Unit 6: Applications of perimeter and area	
Essential Questions: <ul style="list-style-type: none"> • What is perimeter? • What is area? 	Essential Understanding: <ul style="list-style-type: none"> • 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	
EE.8.G.9: Use the formulas for perimeter, area, and volume to solve real-world and mathematical problems (limited to perimeter and area of rectangles and volume of rectangular prisms). (DOK I/II)	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> • 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"> • ,when given the formulas for perimeter, area, and volume, the student can use the formulas to solve real world and mathematical problems, limited to rectangles and rectangular prisms. • identify the area or perimeter using models and dimensions of rectangles, limited to single digit numbers (e.g., 2 + 3 + 2 + 3) with a shape that also contains unit squares. • use informal units to determine the perimeter of a rectangle of 8 units or less without using the word perimeter(e.g., how many steps, blocks, etc.).

Unit 7: 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	
EE.8.SP.4: Construct a graph or table from given categorical data, and compare data categorized in the graph or table. (DOK I/II)	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> that groups have similarities and differences. key pieces of information that graphs and tables can provide us. key features of graphs and tables. where to get information on graphs and tables. categories are represented on the horizontal axis of a graph. frequency is represented on the vertical axis of a graph. 	<ul style="list-style-type: none"> match given data with a graph or table that shows this data and compare data categorized in a graph or table. identify a graph or table that matches given information, limited to 3 data entries. sort given data into two groups.

Unit 8: Algebraic Equations	
Essential Questions: <ul style="list-style-type: none"> What does it mean to solve an equation? 	Essential Understanding: <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.
Curriculum Standards- DOK noted where applicable with Standards	
EE.8.EE.7: Solve simple algebraic equations with one variable using addition and subtraction. (DOK I/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. 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 algebraic equations with one variable using addition and subtraction. select appropriate numbers in order to solve addition and subtraction problems and solve as appropriate. identify which of two choices is needed to answer a question or solve a problem.

Unit 9: Patterns	
Essential Questions: <ul style="list-style-type: none"> How are functions and their graphs related? 	Essential Understanding: <ul style="list-style-type: none"> A function rule can be used to create a function table. Ordered points from the table can be graphed and interpreted on a coordinate plane.
Curriculum Standards- DOK noted where applicable with Standards	
<p>EE.8.F.1-3: Given a function table containing at least 2 complete ordered pairs, identify a missing number that completes another ordered pair (limited to linear functions). (DOK I/II)</p> <p>EE.8.F.4: Determine the values or rule of a function using a graph or a table. (DOK I/II)</p> <p>EE.8.F.5: Describe how a graph represents a relationship between two quantities. (DOK I/II)</p>	
LEARNING TARGETS	
Knowledge/Content I Know ...	Skills/Processes I Can ...
<ul style="list-style-type: none"> where to locate important information on graphs and tables. when a graph is going up, it is said to be increasing. when a graph is going down, it is said to be decreasing. when a graph is flat, it is not changing or maintaining. the first number in an ordered pair is the number evaluated in a function rule. the second number in an ordered pair is the resulting number. the numbers on the left side of a function table are the numbers evaluated in a function rule. the numbers on the right side of a function table are the resulting numbers. 	<ul style="list-style-type: none"> identify the missing number that completes an ordered pair in a function table. recognize a growing or shrinking pattern in a data table that contains at least 3 data points. extend or describe patterns involving objects or symbols. determine the values or rule of a function using a graph or a table. describe a relationship between two quantities shown on a graph using increasing, decreasing, or maintaining. identify a relationship between two quantities shown in a graph as more than or less than. identify the topic of information presented in a picture graph or bar graph (e.g., use a model of a graph to identify the topic of favorite pizza toppings.).