Davison Community Schools
ADVISORY CURRICULUM COUNCIL
Phase II, February 13, 2017
Bob Konzman, Matt Lobban

6th grade CI - Math	
Course Essential Questions: ● How does mathematics help us in finding patterns and relationships in the real-world? ● How can we use mathematics to solve real-world problems?	
Unit 1: Counting/Place Value	
Essential Questions: ● How can ratios be used to describe relationships? ● Where and how are positive and negative numbers used in the real-world.	**Essential Understanding:** ● Ratios can be used to show the relationship of different quantities of numbers and objects. ● Positive and negative numbers are used in temperature, money, graphs.
Curriculum Standards- DOK noted where applicable with Standards	
EE.6.RP.1: Demonstrate a simple ratio relationship. (DOK 1) **EE.6.NS.5-8:** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero). (DOK 1)	
LEARNING TARGETS	
Knowledge/Content **I Know …**	**Skills/Processes** **I Can …**
● we use a ratio (written as a fraction) to describe the relationship in quantities of numbers and objects. ● that a 1 to 1 correspondence is matching one object to another object ● that a thermometer is like a number line and it measures temperature. ● positive means more than zero and negative mean less than zero. ● positive numbers are to the right of zero and negative numbers are to the left of zero on the number line..	● use a ratio to describe a relationship using numbers and objects. ● complete a pattern given a simple ratio. ● identify a one-to-one relationship. ● read a thermometer to find positive and negative temperatures. ● balance a monatary transaction to show savings or debt. ● recognize that positive and negative numbers are used together to describe real-world situations (temperature above/below zero). ● identify that positive numbers are more than zero and negative numbers are less than zero. ● use manipulatives to demonstrate understanding of “more than” a given number; and “take away” from a given number so there are zero remaining.

Unit 2: Measurement	
Essential Questions: ● How can we use data shown on graphs to make decisions?	**Essential Understanding:** ● Graphs help us determine how quantities compare.
Curriculum Standards- DOK noted where applicable with Standards	
EE.6.SP.1-2: Display data on a graph or table that shows variability in the data. (DOK 2) **EE.6.SP.5:** Summarize data distributions shown in graphs or tables. (DOK 2)	
LEARNING TARGETS	
Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● variability is how much different the smallest quantity is from the greatest quantity. ● on a bar graph, the tallest bar represents the largest quantity. ● on a circle graph, the pie piece that is largest represents the quantity that is greatest. ● increasing means going higher/going up ● decreasing means going lower/going down ● same means no change. ● on a bar graph, the shortest bar represents the smallest quantity. ● the group with the highest number of objects has the most. ● the group with the least number of objects has the fewest. ● the last number said when counting is the number of objects in the group.	● display data on a graph or table that shows variability in the data. ● identify which quantity is greatest when three quantities are represented on a bar or circle graph. ● identify a set that has objects that are the same or different. ● describe the trend lines of data using informal language (e.g., increasing, decreasing, stays the same). ● identify which quantity is smallest or least when three quantities are represented on a bar or circle graph. ● identify which object or symbol appears most frequently when presented with objects or symbols that are unsorted in a row.

Unit 3: Area/Shape	
Essential Questions: ● How do we find area? ● How do we find volume? ● What is the difference between area and volume?	**Essential Understanding:** ● Area is the space inside a flat object. ● Space can be broken up, rearranged, and the area/volume remains the same.
Curriculum Standards- DOK noted where applicable with Standards	
EE.6.G.1: Solve real-world and mathematical problems about area using unit squares. (DOK 1/2) **EE.6.G.2:** Solve real-world and mathematical problems about volume using unit cubes. (DOK 1/2)	
LEARNING TARGETS	
Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● the last number said when counting the unit squares that fit into the space of a flat object is the area of the rectangle. ● area measures the number of unit squares that fit into the space of a flat object. ● when comparing objects' area, look for which covers the most space. ● how to compare big vs. small; more vs. less ● volume can be computed by repeated addition of the number of cubes seen on the face through its depth. ● volume measure is the number of unit cubes that fit inside the space of a 3D object. ● volume is the amount of space inside an object. ● the object with the most space inside a 3D object has the most volume. ● 2D is a flat picture with 2 dimensions (L and W) and 3D has 3 dimensions (L, W and added depth).	● solve real-world and mathematical problems involving area using unit squares. ● determine the area of a rectangle by counting unit squares. ● identify which of two objects has a larger/bigger area. ● solve real-world and mathematical problems involving volume using unit cubes. ● determine which of 2 objects has a larger volume. ● differentiate between an object that has volume (three-dimensional) and an object that does not.

Unit 4: Equations	
Essential Questions: ● How do equations help us solve real-world problems.	**Essential Understanding:** ● Equations are created and solve to make sense of patterns and relationships that exist in the real-world.
Curriculum Standards- DOK noted where applicable with Standards	
EE.6.EE.1-2: Identify equivalent number sentences. (DOK 1/2) **EE.6.EE.3**: Apply the properties of addition to identify equivalent numerical expressions. (DOK 1/2) **EE.6.EE.5-7:** Match an equation to a real-world problem in which variables are used to represent numbers. (DOK 1/2)	
LEARNING TARGETS	
Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● strategies to solve equations and compare sides (3+2 = 4+1). ● strategies to solve addition and subtraction problems. ● strategies to match the same amount to picture (3+2 = x x x x x). ● equal symbol means both sides have the same number (5 = x x x x x). ● strategies to solve problems (5 + ___ = 7) ● strategies to solve addition problems (5 + 2 = __). ● strategies to add/count objects (x x x + o o = __).	● recognize equivalent number sentences. ● match a number sentence to a correct picture representation. ● identify a quantity that "is the same as" a given quantity of objects. Instructional focus on using both the language of same with symbol (=) paired together. ● identify an equation that represents a real-world problem in which the variable represents an addend. Use a box to represent the variable. The real-world problem will use objects or pictures as a guide. ● identify an equation that represents a real-world problem in which the variable represents the sum. Use a box to represent the variable. The real world problem will use objects or pictures as a guide. ● determine an unknown unit in an equation using objects or pictures.

Unit 5: Multiplication	
Essential Questions: ● How is multiplication related to addition?	**Essential Understanding:** ● Multiplication is repeated addition and can be computed by skip counting the number of objects in equal groups.
Curriculum Standards- DOK noted where applicable with Standards	
EE.6.NS.3: Solve two-factor multiplication problems with products up to 50 using concrete objects and/or a calculator. (DOK 1/2)	
LEARNING TARGETS	
Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● the multiplication facts (skip count by 2s, 5s, 10s) and repeat addition. ● multiplication problems can be represented with arrays with groups of objects arranged in rows and columns. ● multiplication means repeatedly adding a number to itself an identified number of times. ● multiplication key strokes to operate a calculator. ● a group is a set of objects.	● The student can solve a simple multiplication problem (one factor times another) using concrete objects and/or a calculator. ● The student can solve a simple multiplication problem (one factor times another) with products up to 15 using concrete objects and/or a calculator. ● The student can identify a group of a given quantity.

Unit 6: Geometry	
Essential Questions: ● How do we compare subsets of a divided whole?	**Essential Understanding:** ● The more subsets that are created when we divide a whole, the smaller each subset becomes. ● To compare unit fractions, refer to the denominator. The larger the denominator, the smaller the unit fraction.
Curriculum Standards- DOK noted where applicable with Standards	
EE.6.NS.1: Compare the relationships between two unit fractions. (DOK 1/2) **EE.6.NS.2**: Apply the concept of fair share and equal shares to divide. (DOK 1/2)	
LEARNING TARGETS	
Knowledge/Content **I Know** …	**Skills/Processes** **I Can** …
● fractions are equal parts (subsets) that make up a whole. ● to compare unit fractions, compare the size of their denominator ● a unit fraction represents one of the subsets of a whole that is equal in size to the other subsets of the whole. ● the larger the denominator the smaller the pieces (¼ is smaller than ½). ● that whole means all of or a complete and half is two equal parts of a whole when it is cut. ● when we divide, we divide the whole into equal size subsets. ● that equal shares means they are the same size. ● that a subset is a smaller set of the whole. ● that a set is a group.	● compare the relationship between two unit fractions (a fraction with a numerator of 1 such as 1/3, 1/8, etc.) no smaller than 1/10. ● identify a shape that is separated into equal ● differentiate between a whole object and half of the object. ● solve a division problem using the concept of equal shares. ● separate sets into equal subsets. ● demonstrate an understanding of equal sets by identifying a set that has been divided into subsets that are “the same”.