Grade 2 Mathematics

The Mathematics Curriculum Framework represents the commitment of the Hinsdale School District to the Common Core State Standards and the ideas of Grant Wiggins and Jay McTighe in their principles of *Understanding by Design.* The Mathematics Curriculum Revision Committee (2015-16) believes that this document provides the necessary framework for teachers to develop mathematical units and lessons based on best practices in curriculum, instruction and assessment.

The Common Core State Standards for Mathematics requires that students develop a conceptual understanding of key concepts, procedural skills and fluency and the ability to use their knowledge to solve real world problems. Teachers are expected to develop lessons that meet these requirements by using a variety of instructional techniques and resources to meet individual student needs.

More information about the Common Core State Standards can be found at:

www.corestandards.org

Grade 2 Mathematics

Standard 2.OA: Operations and Algebraic Thinking
Represent and solve problems involving addition and subtraction.
Add and subtract within 20.
Work with equal groups of objects to gain foundations for multiplication.

21st Century Learning Expectations
Hinsdale students will be able to solve problems.
Hinsdale students will communicate through various means.

Enduring Understandings
There is a relationship between addition and subtraction.
Two step word problems require at least two operations to solve.

Learning Competencies	Essential Questions
Students will be able to • use addition and subtraction within 100 to solve one- and two-step word problems involving a symbol to represent an unknown quantity in various positions. • fluently add and subtract within 20 using mental strategies. • determine whether a group of objects (up to 20) has an odd or even number of members and write an equation to express an even number as a sum of two equal addends. • use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns. • write an equation to express the total as a sum of equal addends.	• How can we use our knowledge of addition and subtraction to solve problems or answer questions? • How can word problems be represented by drawings and equations? • What is a mental strategy? • How does an array show repeated addition?

Grade 2 Mathematics

Standard 2.NBT: Number and Operations Base Ten
　　Understand place value.
　　Use place value understanding and properties of operations to add and subtract.

21ˢᵗ Century Learning Expectations
　　Hinsdale students will be able to solve problems.
　　Hinsdale students will communicate through various means.
　　Hinsdale students will take responsibility for their own learning.

Enduring Understandings
　　All digits have a value dependent upon their place value.
　　Different counting strategies are important.
　　Place value and properties of operations are important when using addition and subtraction
　　　　strategies.

Learning Competencies	Essential Questions
Students will be able to • understand that three digit numbers have value based on where they are placed. • read, write and count using base ten numerals up to 1,000 using different methods including skip counting by 5s, 10s and 100s. • compare two three-digit numbers using >, <, and = symbols and record results of comparisons. • use knowledge of place value, properties of operations, the relationship between addition and subtraction, and concrete models or drawings to add and subtract numbers within 100. • mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. • explain why addition or subtraction strategies work using place value and properties of operations in their explanation.	• Why is place value to important when discussing numbers? • Why use different counting strategies when solving problems? • Why do numbers have place value? • How does knowing math facts help us solve math problems?

Grade 2 Mathematics

Standard 2.MD: Measurement and Data
   Measure and estimate lengths in standard units.
   Relate addition and subtraction to length.
   Work with time and money.
   Represent and interpret data.

21st Century Learning Expectations
   Hinsdale students will be able to solve problems.
   Hinsdale students will communicate through various means.
   Hinsdale students will take responsibility for their own learning.

Enduring Understandings
   Objects can have different measurements depending on units used.
   Data is important in the real world.

Learning Competencies	Essential Questions
Students will be able to • measure the length of objects selecting and using various tools. • estimate and compare length of an object using two different units of length. • measure to determine how much longer one object is than another. • use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units. • represent lengths and whole number sums and differences from 0 on a number line • tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. • solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. • make a line plot, picture graph and bar graph using measurement data gathered by measuring up to four objects. • solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	• When is measurement important in everyday life? • How can graphs and number lines help us make decisions? • Why is it important to understand the values of coins? • What information do you need to know to solve word problems about money?

Grade 2 Mathematics

Standard 2.G: Geometry
    Reason with shapes and their attributes.

21st Century Learning Expectations
    Hinsdale students will be able to solve problems.
    Hinsdale students will communicate through various means.
    Hinsdale students will take responsibility for their own learning.

Enduring Understandings
    All shapes can be identified by their specific attributes.
    Shapes can be partitioned into halves, thirds, and fourths to create smaller parts of the whole.

Learning Competencies	Essential Questions
Students will be able to - recognize and draw shapes based on attributes. - identify triangles, quadrilaterals, pentagons, hexagons and cubes. - make fractional parts of rectangles and count to find the total number of them. - make fractional parts of circles and rectangles into two, three, or four equal shares, and describe the shares using fractional words (halves, thirds, etc.) - recognize that equal shares of identical wholes need not have the same shape.	- Why do I need to know how to distinguish attributes of shapes? - Why can attributes help you recognize and construct shapes? - How can you match solid geometric figures to real-life objects? Give examples.