

Kindergarten 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

Kindergarten Mathematics	
Standard K.CC : Counting and Cardinality Know number names and the count sequence. Count to tell the number of objects. Compare Numbers	
21st Century Learning Expectations Hinsdale students will be able to solve problems. Hinsdale students will communicate through various means.	
Enduring Understandings Numbers have names and we can use them to count. Everything can be counted. Numbers are symbols used to represent quantities of items and are ordered from least to greatest. Numbers are used every day in our lives to communicate how much of an item we have or how much of an item we want.	
Learning Competencies	Essential Questions
<i>Students will be able to</i> <ul style="list-style-type: none"> • count to 100 by ones and by tens. • count forward beginning from a given number within the known sequence. • write numbers from 0 to 20. • represent a number of objects with a written numeral 0-20. • Count objects and say the number names in standard order. • Understand the last number named tells number of objects counted regardless of arrangement of objects. • connect counting to cardinality. • count to answer “how many?” questions involving up to 20 objects arranged in various configurations. • identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group. • compare two numbers between 1 and 10 presented as written numerals 	<ul style="list-style-type: none"> • Why do we count? • How can numbers be compared? • When would you need to know how many of an item you have?

Kindergarten Mathematics	
Standard K.OA: Operations & Algebraic Thinking Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	
21st Century Learning Expectations Hinsdale students will be able to solve problems. Hinsdale students will communicate through various means.	
Enduring Understandings Numbers represent quantities and can be combined to find sums and differences. Real world problems can be solved by counting, ordering, adding and subtracting numbers.	
Learning Competencies	Essential Questions
<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. • solve addition and subtraction word problems, and add and subtract within 10, using objects or drawings to represent the problem. • decompose numbers less than or equal to 10 into pairs in more than one way. • for any number from 1 to 9, find the number that makes 10 when added to the given number, using objects or drawings, and record the answer with a drawing or equation. • fluently add and subtract within 5. 	<ul style="list-style-type: none"> • What happens when you combine groups and what happens when you take groups apart? • How can drawings and objects be used to solve addition and subtraction problems?

Kindergarten Mathematics	
Standard K.NBT: Numbers and Operations in Base Ten Work with numbers 11-19 to gain foundations for place value.	
21st Century Learning Expectations Hinsdale students will be able to solve problems. Hinsdale students will communicate through various means.	
Enduring Understandings Place value is the meaning of a number based on its position and will help us add and subtract. Breaking numbers apart by groups of tens and ones helps us understand larger numbers.	
Learning Competencies	Essential Questions
<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • compose and decompose numbers from 11 to 19 into ten ones and some further ones, using objects or drawings, and record each composition or decomposition by a drawing or equation. • understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. 	<ul style="list-style-type: none"> • Why do we break numbers apart into tens and ones? • What is place value? • How can drawings and objects be used to compose and separate numbers from 11-19?

Kindergarten Mathematics	
Standard K.MD: Measurement and Data Describe and compare measurable attributes. Classify objects and count the number of objects in each category.	
21st Century Learning Expectations Hinsdale students will be able to solve problems. Hinsdale students will communicate through various means.	
Enduring Understandings Measurement is the dimension, quantity or capacity of an object compared to a standard. A category is a group of objects that have similar attributes. When comparing two lengths, one end of each length must match.	
Learning Competencies	Essential Questions
<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • describe measurable attributes of objects, such as length or weight. • describe several measurable attributes of a single object. • compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. • classify objects into given categories. • count the numbers of objects in each category and sort the categories by count. 	<ul style="list-style-type: none"> • What are some ways to measure objects? • How can you compare measurements of objects? • What are ways to categorize objects? • How do we sort objects?

Kindergarten Mathematics

Standard K.G: Geometry

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres).

Analyze, compare, create, and compose shapes.

21st Century Learning Expectations

Hinsdale students will be able to solve problems.

Hinsdale students will communicate through various means.

Enduring Understandings:

Shape is the outline of an object and all objects have a shape with a specific name.

Dimension is a measure of width, height or length.

Shapes are everywhere in the real world.

Learning Competencies

Students will be able to

- describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind, and next to*.
- correctly name shapes regardless of their orientations or overall size.
- identify shapes as two-dimensional or three-dimensional.
- compare and describe two and three dimensional shapes by their attributes, similarities and differences.
- model shapes in the world by building shapes from components and drawing shapes.
- compose simple shapes to form larger shapes.

Essential Questions

- How are shapes the same and different?
- Describe ways to model shapes.
- What happens when you join different shapes?