

M.I *Number and Operations*

- M.1.1 *Understand numbers, ways of representing numbers, relationships among numbers, and number systems. (NCTM)*
- M.1.1.E.1 count with understanding and recognize "how many" in sets of objects
- (E) Match sets of objects one-to-one up to ten.
  - (E) Rote count up to ten.
  - (E) Recognize numbers up to ten.
  - (E) Represent numbers up to ten.
  - (E) Order of numbers up to ten.
  - (E) Show more than and less than in sets.
  - (K) Match sets of objects one to one up to 10.
  - (K) Count, recognize, represent, name, and order a number of objects (up to 10).
  - (K) Recognize and name numerals up to 31.
  - (1) Count, read and write numbers 0-100.
- M.1.1.E.3 develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections
- (E) Describe terms "first," "middle," and "last" position.
  - (K) Model and name positions of ordinal numbers up to the tenth position.
  - (K) Find the number that is one more than and one less than any whole number up to 10.
  - (K) Count backwards from ten to zero.
  - (1) Compare whole numbers up to 100 and arrange them in numerical order.
  - (1) Name the number that is ten more or ten less than any number up to 100.
  - (1) Identify ordinal number first-tenth and show position (i.e. find the fifth person in line).
  - (1) Count backwards from ten to zero.
  - (2) Match the ordinal number words & numbers (first, second, third) up to 100.
- M.1.1.E.6 understand and represent commonly used fractions, such as  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{1}{5}$ ,  $\frac{1}{6}$ ,  $\frac{1}{8}$ ,  $\frac{1}{10}$ , and  $\frac{1}{12}$ .
- (E) Describe the concept of one-half using a visual medium.
  - (K) Divide shapes into equal parts (also in M 3.3.E.2 symmetry).
  - (K) Model dividing shapes into parts by  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ .
  - (1) Recognize equal parts of an object.
  - (1) For a shape divided into 4 or less congruent (equal) parts, describe the shaded portion as \_\_\_ out of \_\_\_ parts.
  - (1) For a set of 4 or fewer objects, describe a subset as \_\_\_ out of \_\_\_ parts.
  - (2) Recognize fractions as parts of a whole or parts of a group (up to 12 parts).
  - (2) Know that when all fractional parts are included, the result is equal to the whole and to one.
  - (2) Using pictures, compare the fractions:  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{1}{5}$ ,  $\frac{1}{6}$ ,  $\frac{1}{8}$ ,  $\frac{1}{10}$ , and  $\frac{1}{12}$ .
- M.1.2 *Understand meanings of operations and how they relate to one another. (NCTM)*
- M.1.2.E.1 understand various meanings of addition and subtraction of whole numbers
- (E) Adding and subtracting one (1) from whole numbers zero (0) through ten (10).
  - (K) Demonstrate addition by joining sets of objects (for any two sets).
  - (K) Demonstrate subtraction by removing objects from sets (for any two sets).
  - (1) Describe the role of zero in addition and subtraction.

- (1) Fact families - understand and use the inverse relationship between addition and subtraction
- M.1.2.E.2 recognize, describe, and extend patterns such as sequence of sound
- (E) Recognize and extend visual and auditory patterns using up to 10
- (K) Identify, copy, extend, and make simple patterns with numbers
- (K) Skip count by 5's and 10's to 100.
- (1) Skip count by 2's, 5's, and 10's to 100.
- (1) Recognize odd/even amounts.
- (2) Skip count by 2's, 3's, 4's, 5's, and 10's to 100.
- (2) Recognize odd/even amounts.

- M.2.3 *Use mathematical models to represent and understand quantitative relationships*
- M.2.3.E.1 model situations that involve the addition and subtraction of whole numbers
- (E) Utilize up to five objects and adding one or subtracting one from
  - (K) Use up to ten objects to add or subtract.
  - (1) Create and solve story problems that involve addition and subtraction
  - (2) Create and solve story problems that involve addition and subtraction
- M.2.4 *Analyze change in various contexts. (NCTM)*
- M.2.4.E.1 describe qualitative change, such as a student's growing taller
- (E) Sequence growth order in a variety of situations.
  - (K) Define and compare qualitative change in a variety of ways.
  - (1) Define and compare qualitative changes in a variety of ways.

M.3 *Geometry*

- M.3.1 *Analyze characteristics and properties of two- and three-dimensional geometric shapes*
- M.3.1.E.1 recognize, name, build, draw, compare, and sort two- and three-dimensional shapes
- (E) Recognize and name two-dimensional shapes. (square, triangle)
  - (E) Draw simple shapes: circle and square.
  - (K) Identify and describe common geometric objects: circle, oval, triangle
  - (K) Identify cube, sphere, rectangular prism, cylinder, cone, and pyramid
  - (K) Draw simple two-dimensional shapes.
  - (1) Identify, describe, compare, and sort three-dimensional (solid) shapes
  - (1) Identify objects as two-dimensional or three-dimensional.
  - (1) Draw two-dimensional (plane) shapes.
  - (1) Construct two-dimensional (plane) and three-dimensional (solid) shapes
  - (2) Identify, describe, compare, and sort three-dimensional (solid) shapes
  - (2) Construct and draw two-dimensional (plane) and three-dimensional shapes
- M.3.1.E.2 describe attributes and parts of two- and three-dimensional shapes
- (E) Describe the attributes of two-dimensional shapes.
  - (K) Compare and sort two-dimensional shapes common objects by
  - (1) Classify and sort two-dimensional (plane) and three-dimensional shapes
  - (1) Describe the attributes of two-dimensional (plane) and three-dimensional shapes
  - (2) Identify attributes of solid geometric shapes according to: number of faces, edges, and vertices
- M.3.1.E.3 investigate and predict the results of putting together and taking apart two- and three-dimensional shapes
- (E) Construct two-dimensional shapes using a variety of materials.
  - (K) Construct two- and three-dimensional shapes using a variety of materials
  - (1) Describe the attributes of two-dimensional (plane) and three-dimensional shapes
  - (2) Predict the results of putting together and taking apart two-dimensional shapes
- M.3.2.E.1 describe, name, and interpret relative positions in space and apply them
- (E) Demonstrate up, down, forward, backward.
  - (K) Demonstrate up, down, forward, backward.
  - (1) Demonstrate direction and distance on a plane using right, left, up, down, forward, backward.
  - (2) Demonstrate direction and distance on a plane using right, left, up, down, forward, backward.
- M.3.3 *Apply transformations and use symmetry to analyze mathematical situations. (NCTM)*
- M.3.3.E.2 recognize and create shapes that have symmetry
- (E) Recognize symmetry in a variety of forms.
  - (K) Identify objects having equal parts.
  - (K) Recognize symmetry in a variety of forms.
  - (K) Recognize and draw lines of symmetry.
  - (1) Identify objects having equal parts.
  - (1) Recognize symmetry in a variety of forms.
  - (1) Recognize and draw lines of symmetry.
  - (2) Identify objects having equal parts.

- (2) Recognize symmetry in a variety of forms.
  - (2) Recognize and draw lines of symmetry.
- M.3.4 *Use visualization, spatial reasoning, and geometric modeling to solve problems.*
- M.3.4.E.1 create mental images of geometric shapes using spatial memory and
- (E) Identify, from memory, shapes seen in the surroundings (pictures).
  - (K) Identify, from memory, shapes seen in the surroundings. (pictures).
  - (K) Given a set of plane shapes, combine to create a new image.
  - (1) Create new images combining mental images of geometric shapes.
  - (2) Create new images combining mental images of geometric shapes.
- M.3.4.E.2 recognize and represent shapes from different perspectives
- (E) Explain that directionality will not change the attributes of basic shapes.
  - (K) Explain that directionality will not change the attributes of basic shapes.
  - (1) Identify congruent plane shapes in any position.
- M.3.4.E.4 recognize geometric shapes and structures in the environment and
- (E) Identify basic plane shapes in various environments.
  - (K) Identify basic plane shapes in various environments.
  - (1) Identify two-dimensional and three-dimensional shapes in various environments.
  - (2) Identify two-dimensional (plane) and three-dimensional (solid) shapes.
- M.4 *Measurement*
- M.4.1 *Understand measurable attributes of objects and the units, systems, and processes.*
- M.4.1.E.1 recognize the attributes of length, volume, weight, area, and time
- (E) Identify the calendar as a measure of time (days/months).
  - (E) Identify the attributes of length (long/short).
  - (K) Make direct comparisons of temperature, length, capacity, weight.
  - (K) Recognize concepts of time: morning, afternoon, evening, today.
  - (K) Recognize that clocks and calendars are tools that measure time.
  - (K) Identify the days of the week.
  - (K) Identify months of the year.
  - (K) Identify the hands on the clock -hour hand, minute hand.
  - (1) Identify cent sign.
  - (1) Identify dollar sign.
  - (1) Recognize concepts of time: morning, afternoon, evening, today.
  - (1) Recognize that clocks and calendars are tools that measure time.
  - (1) Identify the days of the week.
  - (1) Identify months of the year.
  - (1) Identify the hands on the clock - hour hand, minute hand.
  - (1) Identify time to the hour and half hour on analog and digital clocks.
  - (1) Tell time to nearest 5 minute interval.
  - (1) Determine elapsed time to the hour.
  - (1) Identify measures of capacity cups, pints, quarts, liters.
  - (E) Identify the calendar as a measure of time (days/months).
  - (E) Identify the attributes of length (long/short).
  - (K) Make direct comparisons of temperature, length, capacity, weight.
  - (K) Recognize concepts of time: morning, afternoon, evening, today.
  - (K) Recognize that clocks and calendars are tools that measure time.
  - (K) Identify the days of the week.
  - (K) Identify months of the year.
  - (K) Identify the hands on the clock -hour hand, minute hand.
  - (1) Identify cent sign.
  - (1) Identify dollar sign.
  - (1) Recognize concepts of time: morning, afternoon, evening, today.
  - (1) Recognize that clocks and calendars are tools that measure time.
  - (1) Identify the days of the week.

- M.4.1.E.3 understand how to measure using nonstandard and standard units
  - (E) Show how to measure using nonstandard units.
  - (K) Show how to measure with nonstandard units.
  - (K) Identify names of coins-penny, nickel, dime, quarter.
  - (K) Name the values of coins-penny, nickel, dime, quarter.
  - (K) Count with pennies and nickels to 10 cents.
  - (1) Demonstrate measuring an object using: (D)
  - (1) Describe the relationship of heavy/light on a balance scale.
  - (1) Describe the function the hands on a clock.
  - (1) Describe the function of a calendar.
  - (1) Describe the function of a thermometer.
  - (1) Demonstrate counting coins starting with the greatest value to the least.
  - (2) Demonstrate measurement of objects using: left to right orientation.
  - (2) Describe the relationship of heavy and light on a balance scale.
  - (2) Show how to measure capacity using: fluid ounce, cup, pint, quart.
  - (2) Describe the function of the hands on the clock and the relationship of the hands.
- M.4.2 *Apply appropriate techniques, tools, and formulas to determine measurements.*
  - M.4.1.E.2 compare and order objects according to these attributes
    - (E) Compare and order a group of 3 objects from greatest to least.
    - (K) Compare and order a group of objects from greatest to least, least to greatest.
    - (1) Compare and order a group of objects based on appropriate number of objects.
    - (2) Compare and order a group of objects based on appropriate number of objects.
  - M.4.2.E.1 measure with multiple copies of units of the same size, such as paper strips
    - (E) Measure length using nonstandard series of units.
    - (K) Measure length, capacity, and weight using a series of nonstandard units.
    - (1) Measure length using a series of nonstandard units.
  - M.4.2.E.3 use tools to measure
    - (E) Utilize standard measuring tools such as rulers and measuring cups.
    - (K) Measure using tools: rulers, measuring cups, and scales.
    - (K) Identify time to the hour.
    - (1) Measure the length of an object to the nearest inch and centimeter.
    - (1) Measure capacity using measuring cups.
    - (1) Measure time using a calendar and clock.
    - (1) Measure temperature using a thermometer.
    - (1) Measure weight using a balance scale.
    - (2) Use ruler, thermometer, balance scale, and measuring cup.
    - (2) Identify time on an analog and digital clock to nearest hour, half hour, and quarter hour.
    - (2) Determine elapsed time using a clock (hours) and calendar (months).
- M.5 *Data Analysis and Probability*
  - M.5.1 *Formulate questions that can be addressed with data and collect, organize, and analyze the data.*
    - M.5.1.E.1 pose questions and gather data about themselves and their surroundings
      - (E) (With teacher guidance) Gather data about self, others, and the surroundings.
      - (K) Gather data within the classroom and determine the outcome of the data.
      - (1) Gather data about self, others, and surroundings.
      - (2) Gather data about self, others, and surroundings.
    - M.5.1.E.2 sort and classify objects according to their attributes and organize data
      - (E) Sort objects by 1 attribute (color, size, shape).
      - (K) Sort and classify objects using 1 attribute.
      - (1) Sort and classify objects by one or more attributes.
      - (2) Organize data according to their attributes.
    - M.5.1.E.3 represent data using concrete objects, pictures, and graphs
      - (E) (With teacher guidance) Illustrate data using objects or pictures.
      - (K) Create and compare data, in graph format using a variety of measuring tools.

- (1) Represent data using a bar graph (D), pictograph (I), or tally gra
  - (2) Represent data using a bar graph (M), pictograph (D), or tally g
- M.5.3 *Develop and evaluate inferences and predictions that are based on data. (NCTI*
- M.5.3.E.1 discuss events related to students' experiences as likely or unlikely
- (E) Make simple predictions based on data.
  - (K) Make simple predictions based on data.
  - (1) Predict and determine an event to be certain, probable, impossi
  - (1) Using a set of data, predict an event to be more, less, or equally
  - (2) Predict and determine an event to be certain, probable, impossi
  - (2) Using a set of data, predict an event to be more, less, or equally

M.6

*Problem Solving*

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and shapes. (AB, ABB, ABC, AABB).

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shapes and develop mathematical arguments about geometric relationships. (NCTM  
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shapes: cube, pyramid, cone, cylinder, rectangular prism, sphere

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shapes: cube, pyramid, cone, cylinder, rectangular prism, sphere  
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ght, and height of objects; recognize which object is shorter, longer, taller, lighter, heavier, warmer, cool  
y, yesterday, tomorrow, week, month, and year.  
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y, yesterday, tomorrow, week, month, and year.  
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tion, start at 0, and beginning to end of object.

art, gallon, milliliter, and liter.  
ship between them.  
(*NCTM*)

longest to shortest, biggest to smallest, etc.  
ngest to shortest, biggest to smallest, etc.  
nstandard and standard units of measure.  
nstandard and standard units of measure. (See M.4.1.E.1 for standard units)  
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