

Mathematics Curriculum

Grade 1

First grade students gain a sense of number by counting, grouping, comparing, and estimating quantities to 100. They develop concepts of addition and subtraction as well as strategies for remembering facts to ten; estimate and measure using nonstandard units and identify and name two-dimensional shapes. First graders collect, count, sort, display, and compare data; identify patterns; find simple function rules; and find missing parts in part-whole situations, using concrete materials.



MTH.G1

Standard 1

COUNT BETWEEN 1 AND 100 OBJECTS AND WRITE THE CORRESPONDING NUMERAL

The student will count objects in a given set containing between 1 and 100 objects and write the corresponding numeral.



Benchmark 1.a

Count Between 1 and 100 Objects and Write the Corresponding Numeral

The student will count objects in a given set containing between 1 and 100 objects, and write the corresponding numeral.



Indicator 1.a.1

Count by rote from 1 to 100

Count by rote from 1 to 100.



Indicator 1.a.2

Write numerals for the numbers from 1 to 100

Write numerals for the numbers 1 to 100.



Indicator 1.a.3

Count randomly placed collection of 1-100 objects & write numeral

Count a randomly placed collection of objects containing between 1 and 100 items and write the corresponding numeral.



Indicator 1.a.4

Estimate/count/represent/recognize numbers up to 100 using materials

Estimate, count, and represent numbers up to 100 using materials. Recognize and write numerals up to 100.



MTH.G1

Standard 2

DEVELOP UNDERSTANDING OF PLACE VALUE BY GROUPING OBJECTS

The student will group a collection of up to 100 objects into tens and ones and write the corresponding number to develop an understanding of place value.



Benchmark 2.a

Group Objects into Tens & Ones & Write Corresponding Number

The student will group a collection of up to 100 objects into tens and ones and write the corresponding number to develop an understanding of place value.



Indicator 2.a.1

Group a collection of objects into sets of tens and ones

Group a collection of objects into sets of tens and ones.



Indicator 2.a.2

Write corresponding number for objects grouped in tens and ones

Write the numeral that corresponds to the total number of objects in a given collection of objects that have been grouped into sets of tens and ones.



Indicator 2.a.3

Read and write number words to 10

Read and write number words to 10.



Indicator 2.a.4

Read and write number words to 19 in contextual settings

Read and write number words to 19 in contextual settings (such as creating a book, poster, game, etc.).



Indicator 2.a.5

Understand numbers 11 to 19 as "ten and ___ more"

Understand numbers 11 to 19 as "ten and ___ more".



Indicator 2.a.6

Estimate & compare groups using more than, less than, and equal to

Estimate and compare sizes of groups using more than, less than, and equal to. Compare and order 2 digit numbers.



Indicator 2.a.7

Explore grouping of objects in a variety of ways

Explore the grouping of objects in a variety of ways (e.g., 19 can be 3 groups of six with 1 left over, 1 group of 10 with 9 left over, 3 groups of 5 with 4 left over, etc.).



Indicator 2.a.8

Model 2 digit numbers by making groups of tens and ones

Model 2 digit numbers by making groups of 10s and identifying the 1 is left over. Write the corresponding numeral.



MTH.G1

Standard 3

COUNT FORWARD BY ONES/FIVES/TENS TO 100/BY 2 TO 20/BACKWARD FROM 20

The student will count forward by ones, fives, and tens to 100, by twos to 20, and backward by ones from 20.



Benchmark 3.a

Count Forward by Ones/Fives/Tens to 100/By 2 to 20/Backward from 20

The student will count forward by ones, fives, and tens to 100, by twos to 20, and backward by ones from 20.



Indicator 3.a.1

Count by ones, fives, and tens to 100 using concrete objects

Count by ones, fives, and tens to 100, using concrete objects, such as counters, connecting cubes, pennies, nickels, and dimes.



Indicator 3.a.2

Skip count orally by fives and tens to 100

Skip count orally by fives and tens to 100.



Indicator 3.a.3

Count by twos to 20 using concrete objects

Count by twos to 20, using concrete objects, such as counters, connecting cubes, and pennies.

**Indicator 3.a.4****Skip count orally by twos to 20**

Skip count orally by twos to 20.

**Indicator 3.a.5****Count backward by ones from 20**

Count backward by ones from 20.

**Indicator 3.a.6****Count backward by ones across a decade (e.g. 62, 61, 60.59...)**

Count backward by 1s across a decade (e.g., 62, 61, 60, 59...).

**Indicator 3.a.7****Count forward by tens starting at numbers other than multiples of ten**

Count forward by 10s starting at numbers other than multiples of 10 (e.g., 26, 36, 46,...).

**MTH.G1****Standard 4****RECOGNIZE AND WRITE NUMERALS 0 THROUGH 100**

The student will recognize and write numerals 0 through 100.

**Benchmark 4.a****Recognize and Write Numerals 0 Through 100**

The student will recognize and write numerals 0 through 100.

**Indicator 4.a.1****Say the correct name for each numeral 0 through 100**

Say the correct name for each numeral 0 through 100.

**Indicator 4.a.2****Write each numeral 0 through 100 using correct numeral formation**

Write each numeral 0 through 100, using correct numeral formation.

**MTH.G1****Standard 5****IDENTIFY THE ORDINAL POSITION FIRST THROUGH TENTH**

The student will identify the ordinal position first through tenth, using an ordered set of objects.

**Benchmark 5.a****Identify the Ordinal Position First Through Tenth**

The student will identify the ordinal position first through tenth, using an ordered set of objects.

**Indicator 5.a.1****Count an ordered set of objects using ordinal number words**

Count an ordered set of objects, using the ordinal number words *first* through *tenth*.

**Indicator 5.a.2****Use an ordered set of objects to identify the ordinal positions**

Identify the ordinal positions, first through tenth, using an ordered set of objects.



Indicator 5.a.3

Identify ordinal positions of a set of objects presented in lines/rows

Identify the ordinal positions, first through tenth, using an ordered set of objects presented in lines or rows from

- left-to-right;
- right-to-left;
- top-to-bottom; and
- bottom-to-top.



MTH.G1

Standard 6

IDENTIFY AND REPRESENT THE CONCEPTS OF ONE-HALF AND ONE-FOURTH

The student will identify and represent the concepts of one-half and one-fourth, using appropriate materials or a drawing.



Benchmark 6.a

Identify and Represent the Concepts of One-Half and One-Fourth

The student will identify and represent the concepts of one-half and one-fourth, using appropriate materials or a drawing.



Indicator 6.a.1

Represent a whole to show it having two equal parts

Represent a whole to show it having two equal parts.



Indicator 6.a.2

Represent a whole to show it having four equal parts

Represent a whole to show it having four equal parts.



Indicator 6.a.3

Use region/area & measurement models for one-half and one-fourth

Identify and model one-half and one-fourth of a whole, using

- region/area models (e.g., pie pieces, pattern blocks, geoboards, drawings); and
- measurement models (e.g., cuisenaire rods, connecting cubes, fraction strips, drawings).



Indicator 6.a.4

Recognize & use the symbols to record fractional parts of a region

Recognize and use the symbols to record fractional parts ($\frac{1}{2}$, $\frac{1}{4}$) of a region.



MTH.G1

Standard 7

GIVEN FAMILIAR PROBLEM SITUATION, SELECT/EXPLAIN REASONABLE MAGNITUDE

The student, given a familiar problem situation involving magnitude, will

- select a reasonable magnitude from three given quantities: a one-digit numeral, a two-digit numeral, and a three-digit number (e.g., 5, 50, and 500); and
- explain the reasonableness of his/her choice.



Benchmark 7.a

Select a Reasonable Magnitude from Three Given Quantities

The student, given a familiar problem situation involving magnitude, will select a reasonable magnitude from three given quantities: a one-digit numeral, a two-digit numeral, and a three-digit number (e.g., 5, 50, and 500).



Indicator 7.a.1

Make reasonable selection from one-, two-, or three-digit numeral

Select a reasonable magnitude for a given set from three given quantities: a one-digit numeral, a two-digit numeral, and a three-digit numeral (e.g., 5, 50, and 500 jelly beans in jars) in a familiar problem situation.



Benchmark 7.b

Explain the Reasonableness of Choice

The student, given a familiar problem situation involving magnitude, will explain the reasonableness of his/her choice.



Indicator 7.b.1

Explain why a particular estimate was chosen from three quantities

Given a familiar problem situation involving magnitude, explain why a particular estimate was chosen as the most reasonable from three given quantities: a one-digit numeral, a two-digit numeral, and a three-digit numeral.



MTH.G1

Standard 8

RECALL BASIC ADDITION FACTS TO 10 & CORRESPONDING SUBTRACTION FACTS

The student will recall basic addition facts – i.e., sums to 10 or less – and the corresponding subtraction facts.



Benchmark 8.a

Recall Basic Addition Facts to 10 & Corresponding Subtraction Facts

The student will recall basic addition facts – i.e., sums to 10 or less – and the corresponding subtraction facts.



Indicator 8.a.1

Identify + as a symbol for addition & - as a symbol for subtraction

Identify + as a symbol for addition and – as a symbol for subtraction.



Indicator 8.a.2

Recall and state orally related addition/subtraction basic facts

Recall and state orally the basic addition facts for sums to 10 or less and the corresponding subtraction facts.



Indicator 8.a.3

Recall basic facts for problem presented in horizontal/vertical format

Recall and write the basic addition facts for sums to 10 or less and the corresponding subtraction facts, when addition or subtraction problems are presented in either horizontal or vertical written format.



Indicator 8.a.4

Estimate and add 3 addends, sums to 10

Estimate and add 3 addends, sums to 10.



Indicator 8.a.5

Find sums for doubles to 9+9, subtract doubles to 12-6

Find sums for doubles to 9 + 9. Subtract doubles to 12 – 6.



Indicator 8.a.6

Add equal groups to explore multiplication

Add equal groups to explore multiplication.

Indicator 8.a.7



Recognize & explain/show a whole is made up of all its parts

Recognize and explain/show that a whole (object, picture, set, or number) is made up of all its parts. Name a number in a variety of ways (e.g., $3+2$, $8-3$, $1+1+1+1+1$, cinco, fingers on one hand are names for 5).



Indicator 8.a.8

Demonstrate understanding of concept of addition orally/with models

Understand the concept of addition as demonstrated orally or through the use of models. Explore the commutative property.



Indicator 8.a.9

Explore relationship between addition & subtraction

Explore the relationship between addition and subtraction by modeling and recording fact families in contextual settings.



Indicator 8.a.10

Use and explain addition and subtraction strategies

Use and explain the addition and subtraction strategies of "counting on and back" (1,2, and 3), adding zero; using doubles and near doubles; and making ten.



MTH.G1

Standard 9

CREATE & SOLVE STORY/PICTURE PROBLEMS INVOLVING ONE-STEP SOLUTIONS

The student will create and solve story and picture problems involving one-step solutions, using basic addition and subtraction facts.



Benchmark 9.a

Create & Solve Story/Picture Problems Involving One-Step Solutions

The student will create and solve story and picture problems involving one-step solutions, using basic addition and subtraction.



Indicator 9.a.1

Interpret & solve oral or written story/picture problems

Interpret and solve oral or written story and picture problems involving one-step solutions, using basic addition and subtraction facts (sums to 10 or less and the corresponding subtraction facts).



Indicator 9.a.2

Identify a correct number sentence to solve a problem

Identify a correct number sentence to solve an oral or written story or picture problem, selecting from among basic addition and subtraction facts.



Indicator 9.a.3

Model different subtraction situations

Model different subtraction situations including comparison of two groups, take away, and part-part-whole.



Indicator 9.a.4

Represent a verbalized story problem and solve

Represent a verbalized (one-step addition or subtraction) story problem, using real or semi-concrete materials; record the number sentence and solve.



Indicator 9.a.5


Sort problems by operation and/or student-generated criteria

Sort problems by operation and/or student-generated criteria.


 **Standard 10****IDENTIFY COIN EQUIVALENCIES & DETERMINE VALUE OF A COLLECTION**

The student will


- a) identify the number of pennies equivalent to a nickel, a dime, and a quarter; and
 - b) determine the value of a collection of pennies, nickels, dimes whose total value is 100 cents or less.
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 **Benchmark 10.a****Identify Number of Pennies Equivalent to a Nickel, Dime, & Quarter**


The student will identify the number of pennies equivalent to a nickel, a dime, and a quarter.

 **Indicator 10.a.1****Identify value of a nickel, dime, and quarter in terms of pennies**


Identify the value of a nickel, a dime, and a quarter in terms of pennies.

 **Indicator 10.a.2****Recognize characteristics of pennies, nickels, and dimes (color/size)**


Recognize the characteristics of pennies, nickels, and dimes (e.g., color, size).

 **Benchmark 10.b****Determine Value of a Collection Whose Value is 100 Cents or Less**


The student will determine the value of a collection of pennies, nickels, dimes whose total value is 100 cents or less.

 **Indicator 10.b.1****Identify the value of a collection of nickels, dimes, and quarters**


Identify the value of a collection of pennies, nickels, and dimes whose total value is 100 cents or less.

 **Indicator 10.b.2****Count by ones to determine the total value of a collection of pennies**


Count by ones to determine the total value of a collection of pennies whose total value is 100 cents or less.

 **Indicator 10.b.3****Count by fives to determine the total value of a collection of nickels**


Count by fives to determine the total value of a collection of nickels whose total value is 100 cents or less.

 **Indicator 10.b.4****Count by tens to determine the total value of a collection of dimes**

Count by tens to determine the total value of a collection of dimes whose total value is 100 cents or less.

 **Indicator 10.b.5****Find & record a variety of ways to show a given amount of money**

Find and record a variety of ways to show a given amount of money.

 **Indicator 10.b.6****Exchange tens for ones & pennies for dimes using concrete materials**

Exchange tens for ones and vice versa using concrete materials. Exchange pennies for dimes and vice versa.



MTH.G1

Standard 11

TELL TIME TO THE HALF HOUR USING AN ANALOG OR DIGITAL CLOCK

The student will tell time to the half hour, using an analog or digital clock.



Benchmark 11.a

Tell Time to the Half Hour Using an Analog or Digital Clock

The student will tell time to the half hour, using an analog or digital clock.



Indicator 11.a.1

Tell time shown on an analog clock to the half hour

Tell time shown on an analog clock to the half hour.



Indicator 11.a.2

Tell time shown on a digital clock to the half hour

Tell time shown on a digital clock to the half hour.



Indicator 11.a.3

Match a written time to the time shown on a analog/digital clock

Match a written time to the time shown on a digital or analog clock to the half hour.



Indicator 11.a.4

Relate time to daily activities

Relate time to daily activities. Read time to the hour; explore time to the half-hour on both digital and analog clocks.



Benchmark 11.b

Explore/Estimate/Compare Measures of Area, Temperature, Calendar Time

The student will explore, estimate, and compare measures of area, temperature, and calendar time.



Indicator 11.b.1

Explore area with concrete materials

Explore area with concrete materials.



Indicator 11.b.2

Relate a given Fahrenheit thermometer reading to hot and cold

Relate a given Fahrenheit thermometer reading to hot and cold.



Indicator 11.b.3

Read a Fahrenheit thermometer & record temperature over time

Read a Fahrenheit thermometer and record temperature over a period of time.



Indicator 11.b.4

Name and sequence days of the week, and recognize calendar patterns

Name and sequence the days of the week. Recognize seasons and calendar patterns. Sequence time (e.g., daily schedule, classroom birthdays).



Indicator 11.b.5

Name and sequence the months of the year

Name and sequence the months of the year.



MTH.G1

Standard 12

USE NONSTANDARD UNITS TO MEASURE LENGTH AND WEIGHT

The student will use nonstandard units to measure length and weight.



Benchmark 12.a

Use Nonstandard Units to Measure Length and Weight

The student will use nonstandard units to measure length and weight.



Indicator 12.a.1

Measure length of objects using nonstandard units (paper clips, cubes)

Measure the length of objects, using nonstandard units (e.g., connecting cubes, paper clips, erasers).



Indicator 12.a.2

Measure weight of objects using nonstandard units (paper clips, cubes)

Measure the weight of objects, using nonstandard units (e.g., paper clips, bean bags, cubes).



Indicator 12.a.3

Estimate/measure/compare length using nonstandard units and inches

Estimate, compare, and measure length using nonstandard units and inches.



Indicator 12.a.4

Explore and identify centimeters

Explore and identify centimeters.



Indicator 12.a.5

Estimate and compare weight using nonstandard units (up to 1 lb)

Estimate and compare weight using nonstandard units. Estimate and compare the weights of objects up to 1 pound using a balance.



Indicator 12.a.6

Estimate and compare weight of an object to a kilogram

Estimate and compare the weight of an object to a kilogram.



MTH.G1

Standard 13

COMPARE VOLUMES OF TWO GIVEN CONTAINERS USING CONCRETE MATERIALS

The student will compare the volumes of two given containers by using concrete materials (e.g., jelly beans, sand, water, rice).



Benchmark 13.a

Compare Volumes of Two Given Containers Using Concrete Materials

The student will compare the volumes of two given containers by using concrete materials (e.g., jelly beans, sand, water, rice).



Indicator 13.a.1

Compare volumes using nonstandard units


Compare the volumes of two containers to determine if the volume of one is greater than, less than, or the same as the other, using nonstandard units of measure (e.g., a spoonful, scoopful, or teacupful).



Indicator 13.a.2

Compare volumes by pouring contents of one container into the other

Compare the volumes of two containers to determine if the volume of one is greater than, less than, or the same as the other by pouring the contents of one container into the other.

 **Indicator 13.a.3**

Estimate & compare capacity using nonstandard containers

Estimate and compare capacity using nonstandard containers. Estimate, compare, and measure capacity in cups, pints, and quarts using physical materials.



MTH.G1

Standard 14

COMPARE WEIGHT OF TWO OBJECTS USING A BALANCE SCALE

The student will compare the weight of two objects, using a balance scale.



Benchmark 14.a

Compare Weight of Two Objects Using a Balance Scale

The student will compare the weight of two objects, using a balance scale.



Indicator 14.a.1

Compare weights using terms lighter, heavier, or the same

Compare the weights of two objects, using the terms *lighter*, *heavier*, or *the same*, using a balance scale.



MTH.G1

Standard 15

DESCRIBE PROXIMITY OF OBJECTS IN SPACE

The student will describe the proximity of objects in space (*near, far, close by, below, above, up, down, beside, and next to*).



Benchmark 15.a

Describe Proximity of Objects in Space

The student will describe the proximity of objects in space (*near, far, close by, below, above, up, down, beside, and next to*).



Indicator 15.a.1

Use terms near, far, close by, below, above, up, down, beside, next to

Identify the spatial relationships of objects, using the terms *near, far, close by, below, above, up, down, beside, and next to*.



MTH.G1

Standard 16

DRAW, DESCRIBE, AND SORT PLANE GEOMETRIC FIGURES

The student will draw, describe, and sort plane geometric figures (*triangle, square, rectangle, and circle*) according to number of sides, corners, and square corners).



Benchmark 16.a

Draw/Describe/Sort Plane Geometric Figures by Attributes

The student will draw, describe, and sort plane geometric figures (*triangle, square, rectangle, and circle*) according to number of sides, corners, and square corners.



Indicator 16.a.1

Draw triangles, squares, rectangles, and circles

Draw triangles, squares, rectangles, and circles.



Indicator 16.a.2

Describe triangles/squares/rectangles by number of sides, corners, etc

Describe triangles, squares, and rectangles by the number of sides, corners, and square corners.



Indicator 16.a.3

Describe circles

Describe circles.



Indicator 16.a.4

Identify the name of the shape when given information about attributes

Identify the name of the shape when given information about the number of sides, corners, and/or square corners.



Indicator 16.a.5

Recognize the concept of symmetry

Recognize the concept of symmetry.



Indicator 16.a.6

Identify/make/extend symmetrical (mirror image) patterns

Identify, make, and extend symmetrical (mirror image) patterns.



Indicator 16.a.7

Recognize/identify/draw/sort two-dimensional shapes

Recognize, identify, and draw 2-dimensional shapes (regular and irregular polygons, and non-polygons). Sort shapes by size, shape, sides, or corners and identify sorting rule.



Indicator 16.a.8

Explore congruence using concrete materials

Explore congruence, using concrete materials (e.g., geoboards, patternblocks).



Indicator 16.a.9

Explore results of combining and subdividing shapes

Explore the results of combining and subdividing shapes to create different shapes.



MTH.G1

Standard 17

IDENTIFY/DESCRIBE PLANE GEOMETRIC FIGURES IN THE ENVIRONMENT

The student will identify and describe objects in his/her environment that depict plane geometric figures (triangle, rectangle, square, and circle).



Benchmark 17.a

Identify/Describe Plane Geometric Figures in the Environment

The student will identify and describe objects in his/her environment that depict plane geometric figures (triangle, rectangle, square, and circle).



Indicator 17.a.1

Identify representations of circles/squares/rectangles/triangles

Identify representations of circles, squares, rectangles, and triangles in the environment at school and home and tell why they represent those shapes.



Indicator 17.a.2

Describe representations of circles/squares/rectangles/triangles

Describe representations of circles, squares, rectangles, and triangles in the environment (e.g., “I

know it's a rectangle because it looks like a door, and I know that a door is a rectangle.”).

Benchmark 17.b

Explore 3-Dimensional Solids in the Environment

Explore 3-dimensional solids in the environment.



Indicator 17.b.1

Explore 3-dimensional solids in the environment

Explore 3-dimensional solids in the environment.



Indicator 17.b.2

Identify and sort 3-dimensional solids in the environment

Identify and sort 3-dimensional solids in the environment.



MTH.G1

Standard 18

INVESTIGATE/IDENTIFY/DESCRIBE VARIOUS FORMS OF DATA COLLECTION

The student will investigate, identify, and describe various forms of data collection in his/her world (e.g., recording daily temperature, lunch count, attendance, and favorite ice cream), using tables, picture graphs, and object graphs.



Benchmark 18.a

Investigate/Identify/Describe Various Forms of Data Collection

The student will investigate, identify, and describe various forms of data collection in his/her world (e.g., recording daily temperature, lunch count, attendance, and favorite ice cream), using tables, picture graphs, and object graphs.



Indicator 18.a.1

Investigate various forms of data collection in his/her world

Investigate various forms of data collection, including counting and tallying, informal surveys, observations, and voting.



Indicator 18.a.2

Identify/describe various forms of data collection in his/her world

Identify and describe various forms of data collection in his or her world (e.g., recording daily temperature, lunch count, attendance, and favorite ice cream.)



Indicator 18.a.3

Collect, count, and sort data

Collect, count, and sort data. Justify the sorting rule.



Indicator 18.a.4

Record data using concrete objects/tally marks/organized lists

Keep track of data by using concrete objects, tally marks, and organized lists.



Indicator 18.a.5

Organize/record/interpret data on grids and charts

Organize, record, and interpret data on grids and charts.



Indicator 18.a.6

Record & interpret data on object graphs/bar graphs/pictographs

Record and interpret data on object graphs, bar graphs and pictographs. Share findings.



Benchmark 18.b

Explore Probability with Concrete Materials, Communicate Findings

Explore probability with concrete materials (e.g., number cubes, coins, 2-colored counters, spinners) and communicate findings.



Indicator 18.b.1

Explore probability with concrete materials & communicate findings

Explore probability with concrete materials (e.g., number cubes, coins, 2-colored counters, spinners) and communicate findings.



Indicator 18.b.2

Make predictions about similar experiments based on findings

Make predictions about similar experiments based on findings (e.g., What would happen if--you were allowed more spins? --you added more cubes?)



MTH.G1

Standard 19

INTERPRET INFORMATION DISPLAYED IN A PICTURE OR OBJECT GRAPH

The student will interpret information displayed in a picture or object graph, using the vocabulary *more, less, fewer, greater than, less than, and equal to*.



Benchmark 19.a

Interpret Information Displayed in a Picture or Object Graph

The student will interpret information displayed in a picture or object graph, using the vocabulary *more, less, fewer, greater than, less than, and equal to*.



Indicator 19.a.1

Demonstrate meaning of terms: more/less/fewer/greater than/less than

Demonstrate the meaning of the terms *more, less, fewer, greater than, less than, and equal to*, using concrete materials.



Indicator 19.a.2

Compare one category to another in a graph

Compare one category to another in a graph, indicating which has more or which has less.



Indicator 19.a.3

Interpret information displayed in object graphs & picture graphs

Interpret information displayed in object graphs and picture graphs, using the words *more, less, fewer, greater than, less than, and equal to*.



Indicator 19.a.4

Find answers to questions, using graphs

Find answers to questions, using graphs (e.g., "Which category has more?" "Which category has less").



MTH.G1

Standard 20

SORT/CLASSIFY CONCRETE OBJECTS ACCORDING TO ONE OR MORE ATTRIBUTES

The student will sort and classify concrete objects according to one or more attributes, including color, size, shape, and thickness.



Benchmark 20.a

Sort/Classify Concrete Objects According to One or More Attributes

The student will sort and classify concrete objects according to one or more attributes, including color, size, shape, and thickness.



Indicator 20.a.1

Sort/classify objects into appropriate subsets according to attributes

Sort and classify objects into appropriate subsets (categories) based on one or two attributes, such as size, shape, color, or thickness.



MTH.G1

Standard 21

RECOGNIZE/DESCRIBE/EXTEND/CREATE A WIDE VARIETY OF PATTERNS

The student will recognize, describe, extend, and create a wide variety of patterns, including rhythmic, color, shape, and numerical. Patterns will include both growing and repeating patterns. Concrete materials and calculator will be used by students.



Benchmark 21.a

Recognize/Describe/Extend/Create a Wide Variety of Patterns

The student will recognize, describe, extend, and create a wide variety of patterns, including rhythmic, color, shape, and numerical. Patterns will include both growing and repeating patterns. Concrete materials and calculator will be used by students.



Indicator 21.a.1

Recognize pattern in a given rhythmic/color/shape/numerical sequence

Recognize the pattern in a given rhythmic, color, shape, or numerical sequence.



Indicator 21.a.2

Describe pattern in a given rhythmic/color/shape/numerical sequence

Describe the pattern in a given rhythmic, color, shape, or numerical sequence.



Indicator 21.a.3

Extend pattern with manipulatives/geometric figures/numbers/calculator

Extend a pattern, using manipulatives, geometric figures, numbers, or calculators.



Indicator 21.a.4

Create a repeating or growing pattern using manipulatives, etc.

Create a repeating or growing pattern, using manipulatives, geometric figures, numbers, or calculators (e.g., the growing patterns 2, 3, 2, 4, 2, 5, 2, 6, 2, ...).



Indicator 21.a.5

Create an arithmetic number pattern, using a calculator

Create an arithmetic number pattern, using a calculator (e.g., when skip counting by fives, use the constant feature on the calculator by pressing $5 + 5 = = \dots$ to produce the pattern 5, 10, 15, 20, ...).



Indicator 21.a.6

Explore the pattern of odd and even numbers

Explore the pattern of odd and even numbers.



Indicator 21.a.7

Find missing parts in part-whole situations using materials

Find missing parts in part-whole situations using materials (e.g., "I have 10 M&M's, six are green, and the rest are yellow. How many are yellow?")



Indicator 21.a.8

Find a simple function rule when given input and output data

Find a simple function rule given input and output data (e.g., if the number 3 becomes 4 and 6 becomes 7, what is the function rule that caused this?) Limit the rules to +1, -1, +2, -2, and doubles.



MTH.G1

Standard 22

USE PROBLEM-SOLVING APPROACHES TO UNDERSTAND CONCEPTS AND SKILLS

Students will use problem-solving approaches to understand concepts and skills. They will pose problems; solve routine, nonroutine, and multistep problems; verify, interpret, and generalize solutions; and focus on the processes that lead to reasonable solutions. Through a variety of problem-solving experiences, students will acquire confidence in using mathematics meaningfully.



Benchmark 22.a

Use Problem-Solving Approaches to Understand Concepts and Skills

Students will use problem-solving approaches to understand concepts and skills. They will pose problems; solve routine, nonroutine, and multistep problems; verify, interpret, and generalize solutions; and focus on the processes that lead to reasonable solutions. Through a variety of problem-solving experiences, students will acquire confidence in using mathematics meaningfully.



Indicator 22.a.1

Share a real-life event (math happening) and pose a question

Share a real-life event (math happening) and pose a question that can be answered using the information given in the story. Illustrate the number sentence by drawing a picture.



Indicator 22.a.2

Represent a verbalized story problem and solve

Represent a verbalized (one-step addition or subtraction) story problem, using real or semi-concrete materials; record the number sentence and solve.



Indicator 22.a.3

Sort problems by operation and/or student-generated criteria

Sort problems by operation and/or student-generated criteria.



Indicator 22.a.4

Select appropriate materials and tools to solve a problem

Select appropriate materials and tools to solve a problem (e.g., countables, measurement tools, calculators).



Indicator 22.a.5

Use strategies to solve one-step routine and nonroutine problems

Use strategies (guess and check; act it out; make/use a list, chart; make/use a graph; build a model; draw a picture; use estimation; use a pattern) to solve one-step routine and nonroutine problems.



Indicator 22.a.6

Solve problems by working collaboratively

Solve problems by working collaboratively with a partner; explain how/why the solution makes "sense."



Indicator 22.a.7

Share and explain thinking about how the problem was solved

Share and explain (verbalize/record/demonstrate) thinking about how the problem was solved.