

Mathematics Curriculum

Grade 2

Second grade students continue to develop number sense with an emphasis on grouping and regrouping through the hundreds, including money amounts. Operations are expanded to include multiplication/division concepts and addition/subtraction facts to 18. They estimate and measure using both standard and nonstandard units; continue to develop concepts of time, temperature, and money equivalencies; explore relationships among two-dimensional shapes and sort solids. Second graders collect, count, sort, display, and compare data; create and extend number patterns; find addition/subtraction function rules and missing addends.

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MTH.G2

Standard 1

READ/WRITE/IDENTIFY PLACE VALUE OF EACH DIGIT IN A THREE-DIGIT NUMERAL

The student will

- a) read, write, and identify the place value of each digit in a three-digit numeral, using numeration models; and
- b) round two-digit numbers to the nearest ten.



Benchmark 1.a

Read/Write/Identify Place Value of Each Digit in a Three-Digit Numeral

The student will read, write, and identify the place value of each digit in a three-digit numeral, using numeration models.



Indicator 1.a.1

Understand ten to one relationship among ones, tens, and hundreds

Demonstrate the understanding of the ten-to-one relationships among ones, tens, and hundreds, using manipulatives (e.g., beans and cups, base-10 blocks, bundles of 10 Popsicle sticks).



Indicator 1.a.2

Determine place value of each digit in a three-digit numeral

Determine the place value of each digit in a three-digit numeral presented as a pictorial representation (e.g., a picture of base-10 blocks) or as a physical representation (e.g., actual base-10 blocks).



Indicator 1.a.3

Write numerals, using a base-10 model

Write numerals, using a base-10 model or picture.



Indicator 1.a.4

Read three-digit numbers when shown a variety of representations

Read three-digit numbers when shown a numeral, a base-10 model of the number, or a pictorial representation of the number.



Indicator 1.a.5

Identify the place value of each digit in a three-digit numeral

Identify the place value (ones, tens, hundreds) of each digit in a three-digit numeral.



Indicator 1.a.6

Read and write number words for multiples of ten

Read and write number words for multiples of ten.



Indicator 1.a.7

Read and write number words through 100

Read and write number words through 100.



Benchmark 1.b

Round Two-Digit Numbers to the Nearest Ten

The student will round two-digit numbers to the nearest ten.



Indicator 1.b.1

Round two-digit numbers to the nearest ten

Round two-digit numbers to the nearest ten.



Indicator 1.b.2

Round three-digit numbers to the nearest ten

Round three-digit numbers to the nearest 10.



MTH.G2

Standard 2

COMPARE WHOLE NUMBERS BETWEEN 0 AND 999 USING SYMBOLS AND WORDS

The student will compare whole numbers between 0 and 999, using symbols ($>$, $<$, or $=$) and words (*greater than*, *less than*, or *equal to*).



Benchmark 2.a

Compare Whole Numbers Between 0 and 999 Using Symbols and Words

The student will compare whole numbers between 0 and 999, using symbols ($>$, $<$, or $=$) and words (*greater than*, *less than*, or *equal to*).



Indicator 2.a.1

Identify numbers that are greater than or less than a given number

Identify numbers that are greater than or less than a given number between 0 and 999.



Indicator 2.a.2

Compare two numbers between 0 and 999

Compare two numbers between 0 and 999, represented pictorially or with concrete objects (e.g., base-10 blocks), using the terms *greater than*, *less than* or *equal to*.



Indicator 2.a.3

Compare the numerical value of two whole numbers

Compare the numerical value of two whole numbers between 0 and 999 by identifying one as greater than, less than, or equal to the other.



Indicator 2.a.4

Use the symbols, $<$, $>$, or $=$ to compare two whole numbers

Write the symbols for less than ($<$), greater than ($>$), and equal to ($=$) to compare two numbers between 0 and 999.



Indicator 2.a.5

Estimate, count, write and model numbers up to 999

Estimate, count, write and model numbers up to 999. Identify the place value of each digit. Name numbers in a variety of ways, (e.g., $25 + 25$, 5 groups of 10, $75 - 25$, and $20 + 20 + 10$ are all names for 50).



MTH.G2

Standard 3

IDENTIFY THE ORDINAL POSITIONS FIRST THROUGH TWENTIETH

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

Benchmark 3.a

Identify the Ordinal Positions First Through Twentieth

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



Indicator 3.a.1

Count an ordered set of objects, using the ordinal number words

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



Indicator 3.a.2

Identify the ordinal positions first through twentieth

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



Indicator 3.a.3

Identify ordinal positions of objects presented in a variety of ways

Identify the ordinal positions first through twentieth, 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.G2

Standard 4

IDENTIFY THE PART OF A SET AND/OR REGION THAT REPRESENTS A FRACTION

The student will identify the part of a set and/or region that represents fractions for one-half, one-third, one-fourth, one-eighth, and one-tenth and write the corresponding fraction.



Benchmark 4.a

Identify the Part of a Set and/or Region That Represents a Fraction

The student will identify the part of a set and/or region that represents fractions for one-half, one-third, one-fourth, one-eighth, and one-tenth and write the corresponding fraction.



Indicator 4.a.1

Recognize fractions as representing equal-size parts of a whole

Recognize fractions as representing equal-size parts of a whole.



Indicator 4.a.2

Identify fractional parts for 1/2, 1/3, 1/4, 1/8, and 1/10

Identify the fractional parts of a whole or a set for $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{8}$, and $\frac{1}{10}$.



Indicator 4.a.3

Identify the fraction names for 1/2, 1/3, 1/4, 1/8, and 1/10

Identify the fraction names for the fraction notations $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{8}$, and $\frac{1}{10}$. Represent fractional parts of a whole for $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{8}$, and $\frac{1}{10}$, using region/area models (e.g., pie pieces, pattern blocks, geoboards); sets (e.g., chips, counters, cubes); and measurement models (e.g., fraction strips, cuisenaire rods, connecting cubes).



Indicator 4.a.4

Model, identify, write, compare, & name fractional parts of sets

Model, identify, write, compare, and name fractional parts of sets



Indicator 4.a.5

Solve real-life problems with fractions using concrete materials

Solve real-life problems with fractions using concrete materials.



MTH.G2

Standard 5

COUNT FORWARD, BACKWARD, IN GROUPS & RECOGNIZE EVEN AND ODD NUMBERS

The student will

- a) count forward by twos, fives, and tens to 100, starting at various multiples of 2, 5, or 10, using mental mathematics, paper and pencil, hundred chart, calculators, and/or concrete objects, as appropriate;
- b) count backward by tens from 100;
- c) group objects by threes and fours; and
- d) recognize even and odd numbers, using objects.



Benchmark 5.a

Count Forward by Twos, Fives, and Tens to 100

The student will count forward by twos, fives, and tens to 100, starting at various multiples of 2, 5, or 10, using mental mathematics, paper and pencil, hundred chart, calculators, and/or concrete objects, as appropriate.



Indicator 5.a.1

Determine patterns created by counting by 2/5/10 on a hundred chart

Determine patterns created by counting by twos, fives, and tens on a hundred chart.



Indicator 5.a.2

Skip count by twos, fives, and tens to 100 using manipulatives, etc.

Skip count by twos, fives, and tens to 100, using manipulatives, a hundred chart, mental mathematics, and/or paper and pencil.



Indicator 5.a.3

Skip count by twos, fives, and tens to 100 using a calculator

Skip count by twos, fives, and tens to 100, using the constant feature on the calculator.



Indicator 5.a.4

Count forward by 2/5/10 starting at various multiples of 2/5/10

Count forward by twos, fives, tens, and hundreds, starting at various multiples of two, five, and ten. Count backward by tens from 100.



Benchmark 5.b

Count backward by tens from 100

The student will count backward by tens from 100.



Indicator 5.b.1

Count backward by tens from 100

Count backward by tens from 100.



Benchmark 5.c

Group Objects by Threes and Fours

The student will group objects by threes and fours.



Indicator 5.c.1

Group objects by threes

Group objects by threes.



Indicator 5.c.2

Group objects by fours

Group objects by fours.



Indicator 5.c.3

Make record of counting by threes and fours, compare to other patterns

Make a record of counting by threes and fours. Compare it to other skip-counting patterns and explain.



Benchmark 5.d

Recognize Even and Odd Numbers, Using Objects

The student will recognize even and odd numbers, using objects.



Indicator 5.d.1

Use objects to determine whether a number is odd or even

Use objects to determine whether a number is odd or even.



Indicator 5.d.2

Explore odd and even patterns in larger numbers

Explore odd and even patterns in larger numbers. Use patterns to make predictions and to count in other numeric sequences; for example, will 45 be in the sequence when counting by fives starting at 13?



MTH.G2

Standard 6

RECALL BASIC ADDITION FACTS

The student will recall basic addition facts – i.e., sums to 18 or less and the corresponding facts.



Benchmark 6.a

Recall & Write Basic Addition Facts for Sums to 18

The student will recall basic addition facts – i.e., sums to 18 or less – and the corresponding subtraction facts.



Indicator 6.a.1

Recall/write corresponding subtraction facts for sums to 18

Recall and write the basic addition facts for sums to 18 or less and the corresponding subtraction facts.



Indicator 6.a.2

Recall/write basic facts when problems are presented horiz/vertically

Recall and write the basic addition facts for sums to 18 or less and the corresponding subtraction facts, when addition or subtraction problems are presented in either horizontal or vertical format.



Indicator 6.a.3

Establish proficiency with basic facts to 18 using strategies

Establish proficiency with basic facts to 18. Include these strategies: doubles, near doubles, "counting on and back" (1, 2, and 3) and making/using ten.



MTH.G2

Standard 7

ESTIMATE/FIND THE SUM OF TWO WHOLE NUMBERS EACH 99 OR LESS

The student, given two whole numbers each 99 or less,

- a) will estimate the sum, and
 - b) find the sum, using various methods of calculation (mental computation, concrete materials, and paper and pencil).
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Benchmark 7.a

Estimate the Sum of Two Whole Numbers Each 99 or Less

The student, given two whole numbers each 99 or less, will estimate the sum.



Indicator 7.a.1

Regroup 10 ones for 1 ten when finding the sum of two whole numbers

Regroup 10 ones for 1 ten, using base-10 models, when finding the sum of two whole numbers whose sum is 99 or less.



Benchmark 7.b

Find the Sum of Two Whole Numbers Each 99 or Less

The student, given two whole numbers each 99 or less, will find the sum, using various methods of calculation (mental computation, concrete materials, and paper and pencil).



Indicator 7.b.1

Solve problems, using mental computation strategies

Solve problems, using mental computation strategies, involving addition of two whole numbers whose sum is 99 or less.



Indicator 7.b.2

Estimate the sum and recognize reasonableness of the estimate

Estimate the sum of two whole numbers whose sum is 99 or less and recognize whether the estimation is reasonable.



Indicator 7.b.3

Determine the sum of two whole numbers using base-10 models

Determine the sum of two whole numbers whose sum is 99 or less, using base-10 models, such as base-10 blocks and bundles of tens.



Indicator 7.b.4

Solve problems presented vertically or horizontally

Solve problems presented vertically or horizontally that require finding the sum of two whole numbers whose sum is 99 or less, using paper and pencil.



Indicator 7.b.5

Explain the addition of three or more two-digit numbers

Explain the addition of three or more two-digit numbers using a mental strategy and/or concrete materials.



Indicator 7.b.6

Estimate and add two-digit numbers including money amounts

Estimate and add two-digit numbers including money amounts, using symbolic notation.



Indicator 7.b.7

Estimate and solve two-digit subtraction problems including money

Estimate and solve two-digit subtraction problems including money amounts, using symbolic notation.



Indicator 7.b.8

Estimate and subtract three-digit numbers, including money amounts

Estimate and subtract three-digit numbers, including money amounts



Indicator 7.b.9

Estimate and add three or more addends, sums to 18

Estimate and add three or more addends, sums to 18.



MTH.G2

Standard 8

ESTIMATE/FIND THE DIFFERENCE OF TWO WHOLE NUMBERS EACH 99 OR LESS

The student, given two whole numbers each 99 or less, will

- a) estimate the difference; and
 - b) find the difference, using various methods of calculation (mental computation, concrete materials, and paper and pencil).
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Benchmark 8.a

Estimate the Difference of Two Whole Numbers Each 99 or Less

The student, given two whole numbers each 99 or less, will estimate the difference.



Indicator 8.a.1

Regroup 10 ones for 1 ten, using base-10 models

Regroup 1 ten for 10 ones, using base-10 models, such as base-10 blocks and bundles of tens.



Indicator 8.a.2

Estimate the difference and recognize reasonableness of the estimate

Estimate the difference of two whole numbers each 99 or less and recognize whether the estimation is reasonable.



Benchmark 8.b

Find the Difference of Two Whole Numbers Each 99 or Less

The student, given two whole numbers each 99 or less, will find the difference, using various methods of calculation (mental computation, concrete materials, and paper and pencil).



Indicator 8.b.1

Determine the difference of two whole numbers using base-10 models

Determine the difference of two whole numbers each 99 or less, using base-10 models, such as base-10 blocks and bundles of tens.



Indicator 8.b.2

Solve problems presented vertically or horizontally

Solve problems presented vertically or horizontally that require finding the difference between two whole numbers each 99 or less, using paper and pencil.



Indicator 8.b.3

Solve problems, using mental computation strategies

Solve problems, using mental computation strategies, involving subtraction of two whole numbers each 99 or less.



Indicator 8.b.4

Model and record different subtraction situations

Model and record different subtraction situations including comparison of two groups, missing part, and take away.



MTH.G2

Standard 9

CREATE & SOLVE ADDITION & SUBTRACTION PROBLEMS USING DATA

The student will create and solve one-step addition and subtraction problems using data from simple tables, picture graphs, bar graphs, and practical situations.



Benchmark 9.a

Create & Solve Addition & Subtraction Problems Using Data

The student will create and solve one-step addition and subtraction problems using data from simple tables, picture graphs, bar graphs, and practical situations.



Indicator 9.a.1

Identify appropriate data & operation needed to solve problems

Identify the appropriate data and the operation needed to solve an addition or subtraction problem where the data is presented in a simple table, picture graph, or bar graph.



Indicator 9.a.2

Use data from charts/picture graphs/bar graphs to solve problems

Solve addition and subtraction problems requiring a one-step solution, using data from simple charts, picture graphs, bar graphs, and everyday-life situations.



Indicator 9.a.3

Create one-step add/sub problems using data from a variety of sources

Create a one-step addition or subtraction problem using data from simple tables, picture graphs, and bar graphs. For subtraction, the difference will be between two whole numbers each 99 or less.



MTH.G2

Standard 10

GIVEN A SIMPLE ADDITION/SUBTRACTION FACT, RECOGNIZE RELATED FACTS

The student, given a simple addition or subtraction fact, will recognize and describe the related facts which represent and describe the inverse relationship between addition and subtraction (e.g., $3 + __ = 7$, $__ + 3 = 7$, $7 - 3 = __$, and $7 - __ = 3$).



Benchmark 10.a

Recognize/Describe Inverse Relationship Between Addition & Subtraction

The student, given a simple addition or subtraction fact, will recognize and describe the related facts which represent and describe the inverse relationship between addition and subtraction (e.g., $3 + __ = 7$, $__ + 3 = 7$, $7 - 3 = __$, and $7 - __ = 3$).



Indicator 10.a.1

Determine the missing number in a number sentence

Determine the missing number in a number sentence (e.g., $3 + __ = 5$ or $__ + 2 = 5$; $5 - __ = 3$ or $5 - 2 = __$).



Indicator 10.a.2

Write the related facts for a given addition or subtraction fact

Write the related facts for a given addition or subtraction fact (e.g., given $3 + 4 = 7$, write $7 - 4 = 3$ and $7 - 3 = 4$).



Indicator 10.a.3

Demonstrate understanding of the commutative property of addition

Write number sentences for fact families with sums to 18, demonstrating the inverse relationship between addition and subtraction. Demonstrate an understanding of the commutative property of addition.



Benchmark 10.b

Develop Understanding of Numerical Relationships for Multipli/Division

The student will develop an understanding of numerical relationships relating to multiplication and division.



Indicator 10.b.1

Explore relationship between addition and multiplication

Write repeated addition sentences, exploring the relationship between addition and multiplication, (e.g., $7=7+7+7$ is 4 groups of 7). Recognize the multiplication symbol "x".



Indicator 10.b.2

Use multiples and arrays to solve problems

Use multiples and arrays to solve problems. Use models/manipulatives to explore division.



MTH.G2

Standard 11

COUNT & COMPARE COLLECTION OF COINS & IDENTIFY/USE MONEY SYMBOLS

The student will

- a) count and compare a collection of pennies, nickels, dimes, and quarters whose total value is \$2.00 or less; and
- b) identify the correct usage of the cent symbol (¢), dollar symbol (\$), and decimal point (.)



Benchmark 11.a

Count & Compare Collection of Coins Whose Value is \$2.00 or Less

The student will count and compare a collection of pennies, nickels, dimes, and quarters whose total value is \$2.00 or less.



Indicator 11.a.1

Determine value of a collection of coins and one-dollar bills

Determine the value of a collection of coins and one-dollar bills whose total value is \$2.00 or less.



Indicator 11.a.2

Compare the values of two sets of coins and one-dollar bills

Compare the values of two sets of coins and one-dollar bills (each set having a total value of \$2.00 or less), using the terms *greater than*, *less than*, or *equal to*.



Indicator 11.a.3

Simulate everyday opportunities to count/compare money

Simulate everyday opportunities to count and compare a collection of coins and one-dollar bills whose total value is \$2.00 or less.



Indicator 11.a.4

Trade pennies for nickels, dimes, and quarters

Trade pennies for nickels, dimes, and quarters.



Benchmark 11.b

Identify Correct Usage of Symbols Related to Money

The student will identify the correct usage of the cent symbol (¢), dollar symbol (\$), and decimal point (.)

Indicator 11.b.1

**Record value of all coins and one-dollar bills using correct symbols**

Identify all coins and a one-dollar bill, recording the value, using the cent symbol (¢), dollar symbol (\$), and decimal point (.).

**Indicator 11.b.2****Count/compare/order money amounts to \$5.00**

Count, compare, and order money amounts to \$5.00, using dollar bills and a collection of coins less than two dollars. Read and write money amounts using the cent sign, dollar sign and decimal point. Find and record a variety of ways to show a given amount of money.

**Indicator 11.b.3****Make change to \$1.00**

Make change to \$1.00.

**MTH.G2****Standard 12****ESTIMATE & THEN USE RULER TO MAKE LINEAR MEASUREMENTS**

The student will estimate and then use a ruler to make linear measurements to the nearest centimeter and inch, including the distance around a polygon in order to determine perimeter.

**Benchmark 12.a****Make Linear Measurements to Nearest Centimeter and Inch**

The student will estimate and then use a ruler to make linear measurements to the nearest centimeter and inch, including the distance around a polygon in order to determine perimeter.

**Indicator 12.a.1****Identify an inch as a U.S. customary unit for measuring length**

Identify an inch as a U.S. customary unit for measuring length.

**Indicator 12.a.2****Estimate/measure length of various objects to the nearest inch**

Estimate and measure the length of various line segments and objects to the nearest inch.

**Indicator 12.a.3****Identify a centimeter as a metric unit for measuring length**

Identify a centimeter as a metric unit for measuring length.

**Indicator 12.a.4****Estimate/measure length of various objects to the nearest centimeter**

Estimate and measure the length of various line segments and objects to the nearest centimeter.

**Indicator 12.a.5****Measure each side of a variety of polygons and find the perimeter**

Measure each side of a variety of concrete polygons and add them to determine the distance around the polygon (its perimeter).

**Indicator 12.a.6****Determine perimeter of a polygon given measurements of the sides**

Determine the distance around a polygon (its perimeter), given the measurements of the sides in centimeters or inches.

**Indicator 12.a.7****Estimate, measure, & compare length using standard & nonstandard units**

Estimate, measure, and compare length using nonstandard units, inches, centimeters, feet, and meters.



MTH.G2

Standard 13

DETERMINE AREA BY USING GRID PAPER AND COUNTING SQUARE UNITS

The student, given grid paper, will estimate and then count the number of square units needed to cover a given surface in order to determine area.



Benchmark 13.a

Determine Area by Using Grid Paper and Counting Square Units

The student, given grid paper, will estimate and then count the number of square units needed to cover a given surface in order to determine area.



Indicator 13.a.1

Investigate covering a given surface with square units

Investigate covering a given surface with square units, using concrete materials (e.g., inch tiles, geoboards, grid paper).



Indicator 13.a.2

Determine area of a given surface by estimating and then counting

Determine the area of a given surface on grid paper by estimating and then counting the number of square units needed to cover the surface.



MTH.G2

Standard 14

DETERMINE VOLUME BY ESTIMATING THEN COUNTING CUBES IN A BOX

The student will estimate and then count the number of cubes in a rectangular box in order to determine volume.



Benchmark 14.a

Determine Volume by Estimating Then Counting Cubes in a Box

The student will estimate and then count the number of cubes in a rectangular box in order to determine volume.



Indicator 14.a.1

Investigate the concept of volume by filling boxes using cubes

Investigate the concept of volume by filling boxes and building box shapes, using cubes.



Indicator 14.a.2

Determine volume of box by counting number of cubes needed to fill it

Determine the volume of a rectangular box by counting the number of cubes needed to fill it.



Indicator 14.a.3

Determine volume by counting cubes in top layer, then adding by layer

Determine the volume of a rectangular box by counting the number of cubes in the top layer of cubes; and adding that number for each layer of cubes.



MTH.G2

Standard 15

DETERMINE WEIGHT/MASS OF OBJECTS IN POUNDS/KILOGRAMS USING A SCALE

The student will estimate and then determine weight/mass of familiar objects in pounds and/or kilograms, using a scale.

Benchmark 15.a

Estimate Then Determine Weight/Mass of Familiar Objects Using a Scale

The student will estimate and then determine weight/mass of familiar objects in pounds and/or kilograms, using a scale.



Indicator 15.a.1

Identify a pound as the U.S. customary unit for measuring weight

Identify a pound as the U.S. customary unit for measuring weight.



Indicator 15.a.2

Estimate & then measure weight of familiar objects to nearest pound

Estimate and then measure the weight of familiar objects to the nearest pound, using a scale.



Indicator 15.a.3

Identify a kilogram as a metric unit for measuring mass

Identify a kilogram as a metric unit for measuring mass.



Indicator 15.a.4

Estimate & then measure weight of familiar objects to nearest kilogram

Estimate and then measure the mass of familiar objects to the nearest kilogram, using a scale.



Indicator 15.a.5

Estimate, weigh, and order a collection of objects

Estimate, weigh, and order a collection of objects.



MTH.G2

Standard 16

TELL/WRITE TIME TO THE QUARTER HOUR, USING ANALOG/DIGITAL CLOCKS

The student will tell and write time to the quarter hour, using analog and digital clocks.



Benchmark 16.a

Tell & Write Time to the Quarter Hour Using Analog & Digital Clocks

The student will tell and write time to the quarter hour, using analog and digital clocks.



Indicator 16.a.1

Show and tell time to the quarter hour, using a model analog clock

Show and tell time to the quarter hour, using a model analog clock.



Indicator 16.a.2

Write time indicated on a digital clock to the nearest quarter hour

Write the time indicated on a digital clock to the nearest quarter hour.



Indicator 16.a.3

Write time indicated on an analog clock to the nearest quarter hour

Write the time indicated on an analog clock to the nearest quarter hour.



Indicator 16.a.4

Match written time to time shown on a clock face to the quarter hour

Match a written time to a time shown on a clock face to the quarter hour.



Indicator 16.a.5

Estimate/read/write time to hour/half-hour using digital/analog clocks

Estimate, read, and write time to the hour and half-hour using both digital and analog clocks. Explore time to the quarter hour.



Indicator 16.a.6

Subtract or "count on" to determine time span (on the hours)

Subtract or "count on" to determine time span (on the hours).



MTH.G2

Standard 17

COMPARE METRIC & US CUSTOMARY UNITS FOR MEASURING LIQUID VOLUME

The student will use actual measuring devices to compare metric and U.S. Customary units (cups, pints, quarts, gallons, and liters) for measuring liquid volume, using the concepts of *more*, *less*, and *equivalent*.



Benchmark 17.a

Use Actual Measuring Devices to Compare Units for Measuring Volume

The student will use actual measuring devices to compare metric and U.S. Customary units (cups, pints, quarts, gallons, and liters) for measuring liquid volume, using the concepts of *more*, *less*, and *equivalent*.



Indicator 17.a.1

Identify metric and U.S. customary units for measuring liquid volume

Identify the metric and U.S. customary units for measuring liquid volume (e.g., cups, pints, quarts, gallons, and liters).



Indicator 17.a.2

Compare customary and metric units of liquid volume

Compare customary and metric units of liquid volume (e.g., cups to quarts, liters to quarts), using actual measuring devices and the concepts of *more*, *less*, and *equivalent*.



Indicator 17.a.3

Estimate/measure/compare capacity in nonstandard & standard units

Estimate, measure, and compare capacity in nonstandard units and standard units (cups, pints, quarts, gallons, and liters).



Indicator 17.a.4

Recognize equivalencies (e.g., 2 cups = 1 pint)

Recognize equivalencies (e.g., 2 cups = 1 pint).



MTH.G2

Standard 18

DEVELOP AND USE LANGUAGE AND SKILLS ASSOCIATED WITH A CALENDAR

The student will

- a) use calendar language appropriately (e.g., months, *today*, *yesterday*, *next week*, *last week*);
 - b) determine past and future days of the week; and
 - c) identify specific dates on given calendar.
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Benchmark 18.a

Use Calendar Language Appropriately

The student will use calendar language appropriately (e.g., months, today, yesterday, next week, last week).



Indicator 18.a.1

Identify specific dates (e.g. third Monday in a given month)

Identify specific dates (e.g., the third Monday in a given month).



Benchmark 18.b

Determine Past and Future Days of the Week

The student will determine past and future days of the week.



Indicator 18.b.1

Determine days/dates before and after a given day/date

Determine the days/dates before and after a given day/date.



Indicator 18.b.2

Determine date a number of days/weeks in past/future from given date

Determine the date that is a specific number of days or weeks in the past or in the future from a given date, using a calendar.



Benchmark 18.c

Identify Specific Dates on a Given Calendar

The student will identify specific dates on given calendar.



Indicator 18.c.1

Read a calendar to locate a given day or date

Read a calendar to locate a given day or date.



Indicator 18.c.2

Identify the seven days in a week

Identify the seven days in a week.



Indicator 18.c.3

Name & sequence days of the week & months of the year

Name and sequence the days of the week and months of the year. Recognize calendar patterns.



MTH.G2

Standard 19

READ TEMPERATURE ON A CELSIUS AND/OR FAHRENHEIT THERMOMETER

The student will read the temperature on a Celsius and/or Fahrenheit thermometer to the nearest 10 degrees.



Benchmark 19.a

Read Temp on Celsius/Fahrenheit Thermometer to Nearest 10 Degrees

The student will read the temperature on a Celsius and/or Fahrenheit thermometer to the nearest 10 degrees.



Indicator 19.a.1

Read temperature on thermometers and from physical models

Read temperature to the nearest 10 degrees from real Celsius and Fahrenheit thermometers and from physical models (including pictorial representations) of such thermometers.



Indicator 19.a.2

Read Fahrenheit thermometer & record temperature over a period of time

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



MTH.G2

Standard 20

IDENTIFY/DESCRIBE/SORT GEOMETRIC SOLIDS ACCORDING TO PROPERTIES

The student will identify, describe, and sort three-dimensional (solid) concrete figures, including a cube, rectangular solid (prism), square pyramid, sphere, cylinder, and cone, according to the number and shape of the solid's faces, edges, and corners.



Benchmark 20.a

Identify/Describe/Sort Geometric Solids According to Properties

The student will identify, describe, and sort three-dimensional (solid) concrete figures, including a cube, rectangular solid (prism), square pyramid, sphere, cylinder, and cone, according to the number and shape of the solid's faces, edges, and corners.



Indicator 20.a.1

Compare three-dimensional shapes to similar objects in everyday life

Compare three-dimensional (solid) shapes (i.e., cube, rectangular solid, square pyramid, sphere, cylinder, and cone) to similar objects in everyday life (e.g., a party hat is like a cone).



Indicator 20.a.2

Identify & name three-dimensional shapes by their appearance

Identify and name cubes, rectangular solids (prisms), square pyramids, spheres, cylinders, and cones by their appearance.



Indicator 20.a.3

Identify/describe geometric solids by number of faces/edges/corners

Identify and describe cubes, rectangular solids (prisms), square pyramids, spheres, cylinders, and cones according to the number and shape of their faces (sides, bases), edges, and corners.



MTH.G2

Standard 21

IDENTIFY/CREATE FIGURES SYMMETRIC ALONG A LINE

The student will identify and create figures, symmetric along a line, using various concrete materials.



Benchmark 21.a

Use Concrete Materials to Identify/Create Symmetrical Figures

The student will identify and create figures, symmetric along a line, using various concrete materials.



Indicator 21.a.1

Investigate symmetry using paper folding, miras, pattern blocks, etc.

Investigate symmetry, using paper folding, mirrors/miras, pattern blocks, wax paper, or tracing paper.



Indicator 21.a.2

Identify/demonstrate a line of symmetry

Identify and demonstrate a line of symmetry in an object or an arrangement of objects.



Indicator 21.a.3

Draw the line(s) of symmetry in a figure

Draw the line(s) of symmetry — horizontal, vertical, and diagonal — in a figure.



Indicator 21.a.4

Identify/create figures that are symmetrical along a line

Identify and create figures that are symmetrical along a line, using various concrete materials.

Benchmark 21.b

 **Identify Congruent Shapes Using Concrete Materials**

Identify congruent shapes using concrete materials.

 **Indicator 21.b.1**

Identify congruent shapes using concrete materials

Identify congruent shapes using concrete materials.




MTH.G2

Standard 22


COMPARE AND CONTRAST PLANE AND SOLID GEOMETRIC SHAPES

The student will compare and contrast plane and solid geometric shapes (circle/sphere, square/cube, and rectangle/rectangular solid).

 **Benchmark 22.a**


Compare and Contrast Plane and Solid Geometric Shapes

The student will compare and contrast plane and solid geometric shapes (circle/sphere, square/cube, and rectangle/rectangular solid).

 **Indicator 22.a.1**


Determine similarities & differences between plane & solid shapes

Determine similarities and differences between plane and solid shapes (e.g., circle/sphere, square/cube, and rectangle/rectangular solid), using models and cutouts.

 **Indicator 22.a.2**


Trace faces of solid shapes & relate plane figures to the solid shape

Trace faces of solid shapes (e.g., cube and rectangular solid) to create the set of plane figures related to the solid shape.

 **Indicator 22.a.3**


Compare and contrast plane and solid geometric shapes

Compare and contrast plane and solid geometric shapes (e.g., circle/sphere, square/cube, and rectangle/rectangular solid) according to the number and shape of their faces (sides, bases), edges, and corners.

 **Indicator 22.a.4**

Identify attributes of two-dimensional shapes and sort accordingly

Identify attributes of two-dimensional shapes (triangles, squares, circles, rectangles) and sort accordingly. Explore attributes of other two-dimensional shapes (regular and irregular polygons and non-polygons).

 **Indicator 22.a.5**

Investigate results of combining & subdividing shapes to create others

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




MTH.G2

Standard 23

READ, CONSTRUCT, AND INTERPRET A SIMPLE PICTURE AND BAR GRAPH

The student will read, construct, and interpret a simple picture and bar graph.

 **Benchmark 23.a**

Read, Construct, and Interpret a Simple Picture and Bar Graph

The student will read, construct, and interpret a simple picture and bar graph.

**Indicator 23.a.1****Read info presented horizontally/vertically on bar or picture graph**

Read the information presented horizontally and vertically on a simple bar or picture graph.

**Indicator 23.a.2****Collect no more than 16 pieces of data to answer a given question**

Collect no more than 16 pieces of data to answer a given question.

**Indicator 23.a.3****Organize data using a variety of methods in order to construct a graph**

Organize data, using lists, tables, objects, pictorial representations, tally marks, and charts, in order to construct a graph.

**Indicator 23.a.4****Represent data by constructing a simple picture or bar graph**

Represent data by constructing a simple picture or bar graph.

**Indicator 23.a.5****Label axes on a bar graph, limiting number of categories to four**

Label the axes on a bar graph, limiting the number of categories (categorical data) to four and the increments to multiples of whole numbers (e.g., multiples of 1, 2, or 5).

**Indicator 23.a.6****Label axes on a picture graph, limiting number of categories to four**

Label the axes on a picture graph, limiting the number of categories to four and including a key where appropriate.

**Indicator 23.a.7****Interpret information from simple picture and bar graphs**

Interpret information from simple picture and bar graphs by writing at least one statement that covers one or both of the following:

- Describe the categories of data and the data as a whole (e.g., the total number of responses).
- Identify parts of the data that have special characteristics, including categories with the greatest, the least, or the same.

**Indicator 23.a.8****Select the best interpretation of a graph from a set of possibilities**

Select the best interpretation of a graph from a set of possible interpretations of the graph.

**Indicator 23.a.9****Make and interpret charts and schedules; share findings**

Make and interpret charts and schedules. Share findings.

**MTH.G2****Standard 24****RECORD DATA FROM EXPERIMENTS AND USE DATA TO MAKE PREDICTIONS**

The student will record data from experiments, using spinners and colored tiles/cubes, and use the data to predict which of two events is more likely to occur if the experiment is repeated.

**Benchmark 24.a****Record Data from Experiments and Use Data to Make Predictions**

The student will record data from experiments, using spinners and colored tiles/cubes, and use the data to predict which of two events is more likely to occur if the experiment is repeated.

**Indicator 24.a.1****Conduct probability experiments using a variety of materials**

Conduct probability experiments, using multicolored spinners, colored tiles, or number cubes.

**Indicator 24.a.2****Record results of probability experiments using tables/charts/tallies**

Record the results of probability experiments, using tables, charts, and tally marks.

**Indicator 24.a.3****Interpret the results of probability experiments**

Interpret the results of probability experiments (e.g., the two-colored spinner landed on red 5 out of 10 times).

**Indicator 24.a.4****Predict which of two events is more likely to occur**

Predict which of two events is more likely to occur if an experiment is repeated.

**MTH.G2****Standard 25****IDENTIFY, CREATE, AND EXTEND A WIDE VARIETY OF PATTERNS**

The student will identify, create, and extend a wide variety of patterns, using numbers, concrete objects, and pictures.

**Benchmark 25.a****Identify, Create, and Extend a Wide Variety of Patterns**

The student will identify, create, and extend a wide variety of patterns, using numbers, concrete objects, and pictures.

**Indicator 25.a.1****Identify a growing and/or repeating pattern from a given sequence**

Identify a growing and/or repeating pattern from a given geometric or numeric sequence.

**Indicator 25.a.2****Predict next number, geometric figure, symbol, or object in a pattern**

Predict the next number, geometric figure, symbol, or object in a given pattern.

**Indicator 25.a.3****Extend a given pattern using numbers/geometric figures/symbols/objects**

Extend a given pattern, using numbers, geometric figures, symbols, or objects.

**Indicator 25.a.4****Create a new pattern using numbers/geometric figures/symbols/objects**

Create a new pattern, using numbers, geometric figures, symbols, or objects.

**Indicator 25.a.5****Recognize the same pattern in different manifestations**

Recognize the same pattern in different manifestations.

**Indicator 25.a.6****Complete a sequence of 10 or fewer consecutive numbers to 999**

Complete a sequence (orally and in writing) of 10 or fewer consecutive numbers to 999.



Indicator 25.a.7

Recognize and record even and odd patterns

Recognize and record even and odd patterns.



MTH.G2

Standard 26

SOLVE PROBLEMS INVOLVING THE BASIC FACTS FOR ADDITION AND SUBTRACTION

The student will solve problems by completing a numerical sentence involving the basic facts for addition and subtraction. Examples include: $3 + _ = 7$, or $9 - _ = 2$. Students will create story problems, using the numerical sentences.



Benchmark 26.a

Solve Problems by Completing Numerical Sentence Involving Basic Facts

The student will solve problems by completing a numerical sentence involving the basic facts for addition and subtraction. Examples include: $3 + _ = 7$, or $9 - _ = 2$. Students will create story problems, using the numerical sentences.



Indicator 26.a.1

Solve problems by completing numerical sentence involving basic facts

Solve problems by completing a numerical sentence involving the basic facts for addition and subtraction (e.g., $3 + _ = 7$, or $9 - _ = 2$).



Indicator 26.a.2

Create a story problem for a given numerical sentence

Create a story problem for a given numerical sentence.



Indicator 26.a.3

Find simple addition and subtraction function rules

Find simple addition and subtraction function rules (e.g., $+5$) given input and output data (e.g., input 5, output 10; input 7, output 12).



Indicator 26.a.4

Create additive patterns

Create additive patterns (e.g., $2 + 2 + 2 + 2 + 2 \dots$, $5 + 5 + 5 + 5 \dots$)



MTH.G2

Standard 27

USE PROBLEM-SOLVING APPROACHES TO UNDERSTAND CONCEPTS AND SKILLS

Student 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 27.a

Use Problem-Solving Approaches to Understand Concepts and Skills

Student 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 27.a.1

Share a real-life event & pose a question to answer using the info

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

**Indicator 27.a.2****Illustrate "math happening" number sentences using picture/graphic**

Illustrate "math happening" number sentences by drawing a picture or making a graphic representation.

**Indicator 27.a.3****Represent one-step problem, record number sentence, and solve**

Represent a verbalized, one-step problem, using semi-concrete materials and/or pictorial representations; record the number sentence and solve. Create story situations that fit given math sentences (equations).

**Indicator 27.a.4****Sort problems according to operation and problem structure**

Sort problems according to operation and problem structure.

**Indicator 27.a.5****Solve problems using a logical procedure**

Solve problems using a logical procedure (a plan) by responding to sequential questions.

**Indicator 27.a.6****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 27.a.7****Develop and apply operations and strategies to solve problems**

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

**Indicator 27.a.8****Solve problems by working collaboratively & explain solution**

Solve problems by working collaboratively with a partner or small group; recognize that there may be more than one way to solve a problem; explain how/why the solution is reasonable.

**Indicator 27.a.9****Share and explain thinking about how the problem was solved**

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