

KINDERGARTEN  
– 8TH GRADE



# Sumdog Assessment Library

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# Introduction



Sumdog has now released **standards-aligned, ready-made tests** to help you prioritize teaching and learning.

Unlike traditional assessments, these low-stakes quizzes are an informal means of reliably gauging where children need extra support and additional practice, without making them sit down to complete a written test. Our enhanced student chooser allows you to differentiate with ease, without your students ever knowing what assessment level they are getting – you can even give them a friendly name!

The tests are completely aligned to key state standards for math, allowing you to set pre-made tests for the units of learning that you are teaching your class. To help you track progress with further precision, we have even broken down the standards into smaller Sumdog assessment milestones.

## **You can use the Assessment Library to:**

- celebrate what children have learned and encourage a growth mindset
- pinpoint gaps in children’s understanding with enhanced reports which provide insights at class level and at individual level allowing you to plan next steps
- identify and address any misconceptions, prioritizing areas of extra support or intervention
- use common mistakes as opportunities for whole class teaching
- assess children in the engaging and familiar environment of Sumdog. Every correct answer earns them 5 coins to spend in their virtual house!

This assessment framework outlines the assessment milestones and the associated math standard(s) covered by each test, along with the number of questions in each of the tests. We have also included a few typical examples of questions and an overview of the information summary and data provided by our new and enhanced reporting.

These convenient tests can be used as a pre-assessment before starting a new unit, or as a formative or summative assessment during or after one. No matter how you choose to use them, we are sure that the data and reporting will aid and inform your teaching.

Of course, you can always make your own custom assessments to focus on specific elements of learning too and our improved alignments to key state standards for math makes this even easier! Look out for new assessment types coming soon as we grow our library.

## **Don’t forget that we do all the grading for you!**

# Kindergarten: Counting & Cardinality (Kindergarten Only Domain)



**Learning Focus:** I will be able to identify, read, count and compare numbers up to 10.

Sumdog Milestone(s): (10 Questions)	Math Standard(s):
<ul style="list-style-type: none"><li>• I can read numbers up to 10.</li><li>• I can count groups of numbers up to 10.</li><li>• I can compare groups of numbers up to 10.</li><li>• I can use counting patterns to solve problems.</li></ul>	<ul style="list-style-type: none"><li>• Know number names and the count sequence.*</li><li>• Count to tell the number of objects.*</li><li>• Compare numbers.*</li></ul>

*Priority content standards are indicated with a \*.*

# Kindergarten: Operations & Algebraic Thinking



**Learning Focus:** I will be able to represent, interpret, and solve addition equations.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can represent addition and subtraction using objects.</li><li>• I can represent addition and subtraction by putting two or more numbers together.</li><li>• I can represent and write addition and subtraction equations.</li><li>• I can solve addition and subtraction problems.</li></ul>	<ul style="list-style-type: none"><li>• Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.*</li></ul>

*Priority content standards are indicated with a \*.*

# Kindergarten: Number & Operations in Base 10



**Learning Focus:** I will be able to compose and decompose numbers from 11-19 as the sum of 10 of ten and some more.

Sumdog Milestone(s): (10 Questions)	Math Standard(s):
<ul style="list-style-type: none"><li>• I can represent the numbers 11-19.</li><li>• I can make the numbers 11-19.</li></ul>	<ul style="list-style-type: none"><li>• Work with numbers 11-19 to gain foundations for place value.</li></ul>

# Kindergarten: Measurement and Data



**Learning Focus:** I will be able to count, sort and classify data.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can compare objects by length and height.</li><li>• I can compare objects by weight.</li><li>• I can classify objects into categories.</li><li>• I can count objects in different categories.</li><li>• I can compare the amount of objects that are in categories.</li><li>• I can solve problems about objects with measurable characteristics.</li><li>• I can determine whether the way objects are sorted and compared makes sense.</li></ul>	<ul style="list-style-type: none"><li>• Describe and compare measurable attributes.</li><li>• Classify objects and count the number of objects in each category.</li></ul>



**Learning Focus:** I will be able to identify, count, analyze, compare and create two-dimensional shapes and compare three-dimensional shapes.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can name a shape as a flat or a solid.</li><li>• I can identify and describe circles, triangles, squares, and other rectangles.</li><li>• I can describe and identify hexagons.</li><li>• I can analyze and compare two-dimensional shapes.</li><li>• I can analyze and compare three-dimensional shapes.</li></ul>	<ul style="list-style-type: none"><li>• Identify and describe shapes.</li><li>• Analyze, compare, create, and compose shapes.</li></ul>

# 1st Grade: Operations & Algebraic Thinking



**Learning Focus:** I will be able to represent and solve problems involving addition and subtraction within 20.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can solve problems by taking apart numbers or putting them together.</li><li>• I can apply the Commutative and Associative Property to add and subtract.</li><li>• I can apply strategies to add within 20.</li><li>• I can apply strategies to subtract within 20.</li><li>• I can use double facts to solve problems. .</li><li>• I can identify an addition and subtraction equation.</li></ul>	<ul style="list-style-type: none"><li>• Represent and solve problems involving addition and subtraction.*</li><li>• Understand and apply properties of operations and the relationship between addition and subtraction.*</li><li>• Add and subtract within 20.*</li><li>• Work with addition and subtraction equations.*</li></ul>

*Priority content standards are indicated with a \*.*

# 1st Grade: Number & Operations In Base 10



## Learning Focus:

I will be able to understand place value to compare two-digit numbers and use place value to add and subtract tens and ones.

## Sumdog Milestone(s): (10 Questions)

- I can count by ones, tens, and using an open number line to 120.
- I can group numbers and objects into tens to solve problems.
- I can count tens and ones to find two-digit numbers.
- I can find numbers that are more than or less than a given number.
- I can compare numbers using a less than, greater than, or equal to sign.
- I can compare two-digit numbers that are greater than or less than other two-digit numbers. .
- I can add two multiples of ten.
- I can add two-digit numbers.
- I can use subtraction strategies to solve subtraction problems.

## Math Standard(s):

- Extend the counting sequence.
- Understand place value.\*
- Use place value understanding and properties of operations to add and subtract.\*

*Priority content standards are indicated with a \*.*

# 1st Grade: Measurement and Data



**Learning Focus:** I will be able to represent and interpret data, measure and compare lengths, determine the value of coins, and tell time.

Sumdog Milestone(s): (10 Questions)	Math Standard(s):
<ul style="list-style-type: none"><li>• I can organize data into categories.</li><li>• I can interpret data.</li><li>• I can order and compare objects by their lengths.</li><li>• I can tell the value of a penny, nickel, dime, and quarter.</li><li>• I can tell time to the hour using an analog clock.</li><li>• I can tell time to the half hour using an analog clock.</li></ul>	<ul style="list-style-type: none"><li>• Measure lengths indirectly and by iterating length units.*</li><li>• Tell and write time.</li><li>• Represent and interpret data.</li></ul>

*Priority content standards are indicated with a \*.*

# 1st Grade: Geometry



**Learning Focus:** I will be able to use the attributes to define two dimensional shapes and divide shapes into equal shares.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can describe and define two-dimensional shapes by their attributes.</li><li>• I can use shapes to make different shapes.</li><li>• I can define three-dimensional shapes by their edges, vertices and faces.</li><li>• I can determine if shapes are divided into equal parts.</li><li>• I can divide shapes into 2 and 4 equal parts.</li></ul>	<ul style="list-style-type: none"><li>• Reason with shapes and their attributes.</li></ul>

# 2nd Grade: Operations & Algebraic Thinking



**Learning Focus:** I will be able to fluently solve problems by adding or subtracting within 20.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can use various strategies to fluently add and subtract within 20.</li><li>• I can use doubles to quickly add numbers.</li><li>• I can represent problems using equations where any position is unknown.</li><li>• I can determine whether groups of objects are even or odd.</li></ul>	<ul style="list-style-type: none"><li>• Represent and solve problems involving addition and subtraction.*</li><li>• Add and subtract within 20.*</li><li>• Work with equal groups of objects to gain foundations for multiplication.</li></ul>

*Priority content standards are indicated with a \*.*

# 2nd Grade: Number & Operations In Base 10



## Learning Focus:

I will be able to fluently add and subtract within 100 and understand how to add and subtract within 1000.

## Sumdog Milestone(s): (10 Questions)

- I can add within 100 using place-value strategies, open number lines and break apart numbers into tens and ones.
- I can add 2, 3 or 4 two-digit numbers using place value and partial sums.
- I can use strategies to subtract tens and ones.
- I can use place value to subtract one and two-digit numbers.
- I can use partial differences to subtract two-digit numbers.
- I can solve one and two step problems using addition and subtraction.
- I can read and write three-digit numbers in expanded, standard, and word forms.
- I can use models to add and subtract three-digit numbers.

## Math Standard(s):

- Understand place value.
- Use place value understanding and properties of operations to add and subtract.\*

*Priority content standards are indicated with a \*.*

# 2nd Grade: Measurement and Data



**Learning Focus:** I will be able to use money and measurements of height and length to solve problems, use line plots, bar graphs, and picture graphs to analyze data comprised of measurements.

Sumdog Milestone(s): (10 Questions)	Math Standard(s):
<ul style="list-style-type: none"><li>• I can solve problems with dollar bills and coins.</li><li>• I can estimate the length of objects.</li><li>• I can estimate measures of length using a ruler.</li><li>• I can estimate measures of length and height of objects to the nearest inch, foot and yard.</li><li>• I can add or subtract length measurements to solve problems.</li><li>• I can add and subtract to solve measurement problems using equations.</li><li>• I can use a number line to find the total length of two line segments.</li><li>• I can make a line plot, bar graph and picture graph using measurements.</li><li>• I can analyze measurement from a line plot, bar graph and picture graph.</li></ul>	<ul style="list-style-type: none"><li>• Measure and estimate lengths in standard units.</li><li>• Relate addition and subtraction to length.*</li><li>• Work with time and money.</li><li>• Represent and interpret data.</li></ul>

*Priority content standards are indicated with a \*.*

# 2nd Grade: Geometry



## Learning Focus:

I will be able to classify shapes by their characteristics and partition shapes into equal parts.

## Sumdog Milestone(s): (10 Questions)

- I can recognize shapes.
- I can divide a rectangle into rows and columns of squares that are the same size.

## Math Standard(s):

- Reason with shapes and their attributes.

# 3rd Grade: Operations & Algebraic Thinking



## Learning Focus:

I will be able to understand the relationship between multiplication and division and use multiplication and division to solve problems.

## Sumdog Milestone(s): (15 Questions)

- I can use repeated addition to understand multiplication.
- I can use arrays to understand multiplication. .
- I can fluently multiply using 0, 1, 2, 5, 9 and 10 as factors.
- I can use the distributive property to break apart facts with 3, 4, 6, 7, and 8 as factors.
- I can apply the distributive property to solve problems. .
- I can use multiplication facts to divide.
- I can use properties of equality to understand division involving 0 and 1.
- I can fluently multiply and divide within 100 using relationships between multiplication and division. .
- I can solve two-step problems using four operations.

## Math Standard(s):

- Represent and solve problems involving multiplication and division.\*
- Understand properties of multiplication and the relationship between multiplication and division.\*
- Multiply and divide within 100.\*
- Solve problems involving the four operations and identify and explain patterns in arithmetic.\*

*Priority content standards are indicated with a \*.*

# 3rd Grade: Number & Operations In Base 10



## Learning Focus:

I will be able to fluently add and subtract three-digit numbers and find products with multiples of 10.

## Sumdog Milestone(s): (15 Questions)

- I can use regrouping to add two three-digit numbers.
- I can use regrouping to subtract three-digit numbers.
- I can use patterns and properties of multiplication to find products when multiplying by multiples of 10.
- I can apply addition and subtraction to three-digit numbers to solve multi-step problems.

## Math Standard(s):

- Use place value understanding and properties of operations to perform multi-digit arithmetic.

# 3rd Grade: Number & Operations – Fractions



**Learning Focus:** I will be able to understand fractions as numbers and identify equivalent fractions.

<b>Sumdog Milestone(s): (15 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can identify a unit fraction.</li><li>• I can identify the numerator and the denominator of a fraction.</li><li>• I can represent fractions less than and greater than 1 on the number line.</li><li>• I can measure length to the nearest half inch and the nearest fourth inch.</li><li>• I can represent equivalent fractions on the number line.</li><li>• I can use models to compare fractions with the same denominator.</li><li>• I can use models to compare fractions with the same numerator. .</li><li>• I can use the number line to compare fractions.</li></ul>	<ul style="list-style-type: none"><li>• Develop understanding of fractions as numbers.*</li></ul>

*Priority content standards are indicated with a \*.*

# 3rd Grade: Measurement and Data



**Learning Focus:** I will be able to find the perimeter and area of shapes by connecting it to multiplication and addition, interpret data from tables and graphs, and solve problems using time and capacity.

Sumdog Milestone(s): (15 Questions)	Math Standard(s):
<ul style="list-style-type: none"><li>• I can use unit squares to find the area of shapes.</li><li>• I can use unit squares and multiplication to find the area of squares and rectangles.</li><li>• I can model the distributive property by using areas of rectangles.</li><li>• I can find the area of irregular shapes.</li><li>• I can find the perimeter of polygons.</li><li>• I understand the relationship of shapes with the same perimeter and different areas.</li><li>• I understand the relationship of shapes with the same area and different perimeters.</li><li>• I can solve problems involving perimeter and area.</li><li>• I can use frequency tables and graphs to compare and interpret data.</li><li>• I can use scaled bar graphs to represent data.</li><li>• I can use graphs to solve problems.</li><li>• I can tell time to the nearest minute.</li><li>• I can measure time intervals in minutes.</li><li>• I can use standard units to estimate and measure liquid volume.</li><li>• I can use standard units to estimate the masses of solid objects.</li></ul>	<ul style="list-style-type: none"><li>• Solve problems involving measurement and estimation.</li><li>• Geometric measurement: understand concepts of area and relate area to multiplication and to addition.</li><li>• Represent and interpret data.</li><li>• Geometric measurement: recognize perimeter.</li></ul>

# 3rd Grade: Geometry



**Learning Focus:** I will be able to identify and classify two-dimensional shapes by their attributes.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can identify quadrilaterals and use characteristics to describe them.</li><li>• I can classify shapes according to their characteristics.</li><li>• I can compare quadrilaterals by grouping them by their characteristics.</li></ul>	<ul style="list-style-type: none"><li>• Reason with shapes and their attributes.</li></ul>

# 4th Grade: Operations & Algebraic Thinking



**Learning Focus:** I will be able to apply multiplication and division to find factors, compare quantities, identify patterns as well as solve problems involving all four operations.

Sumdog Milestone(s): (15 Questions)	Math Standard(s):
<ul style="list-style-type: none"><li>• I can use multiplication and division to compare quantities.</li><li>• I can write and solve multi-step equations.</li><li>• I can use multiplication to find factor pairs of whole numbers.</li><li>• I can determine if a number is prime or composite.</li><li>• I can solve problems by using patterns.</li></ul>	<ul style="list-style-type: none"><li>• Use the four operations with whole numbers to solve problems.*</li><li>• Gain familiarity with factors and multiples.</li><li>• Generate and analyze patterns.</li></ul>

*Priority content standards are indicated with a \*.*

# 4th Grade: Number & Operations In Base 10 – Part 1



## Learning Focus:

I will be able to generalize place value understanding and use strategies and properties to perform the four operations to multi-digit whole numbers.

## Sumdog Milestone(s): (15 Questions)

- I can read and write numbers through one million in expanded, with numbers, and using words.
- I can use place value to compare multi-digit whole numbers.
- I can use place value to round multi-digit numbers.
- I can round greater whole numbers to estimate sums and differences.
- I can add numbers to one million with and without regrouping using the standard algorithm.
- I can use the standard algorithm to subtract whole numbers. .
- I can multiply multiples of 10, 100, and 1000 using place value.
- I can use rounding to estimate products.

## Math Standard(s):

- Generalize place value understanding for multi-digit whole numbers.\*
- Use place value understanding and properties of operations to perform multi-digit arithmetic.

*Priority content standards are indicated with a \*.*

# 4th Grade: Number & Operations In Base 10 – Part 2



**Learning Focus:** I will be able to generalize place value understanding and use strategies and properties to perform the four operations to multi-digit whole numbers.

<b>Sumdog Milestone(s): (15 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can use arrays and partial products to multiply two, three, and four-digit numbers by one-digit numbers.</li><li>• I can use area models and the Distributive Property to multiply larger numbers.</li><li>• I can use models and properties of operations to multiply two-digit numbers by multiples of 10.</li><li>• I can use rounding or compatible numbers to estimate products of two two-digit numbers. .</li><li>• I can use the Distributive Property and an area model to multiply two two-digit numbers.</li><li>• I can use place value and partial products to calculate products of two-digit by two-digit multiplication problems.</li><li>• I can use compatible numbers to estimate quotients.</li><li>• I can use place value and division facts to estimate quotients for 4-digit dividends.</li><li>• I can use partial quotients to divide.</li><li>• I can use place value and models to divide two and three-digit numbers by one-digit numbers. .</li><li>• I can interpret remainders to division problems.</li></ul>	<ul style="list-style-type: none"><li>• Use place value understanding and properties of operations to perform multi-digit arithmetic.</li></ul>

# 4th Grade: Number & Operations – Fractions



**Learning Focus:** I will be able to order fractions, add and subtract fractions, use models to multiply fractions, and understand and compare decimals.

## Sumdog Milestone(s): (15 Questions)

- I can use a number line to identify and compare equivalent fractions.
- I can use multiplication and division to find equivalent fractions.
- I can use a number line to add and subtract fractions.
- I can decompose a fraction or mixed number into a sum of fractions.
- I can add and subtract fractions with like denominators.
- I can add and subtract mixed numbers with like denominators. .
- I can add fractions with denominators of 10 and 100 by using equivalent fractions. .
- I can use repeated addition and multiplication to understand a fraction as a multiple of a unit fraction.
- I can multiply fractions by whole numbers.
- I can relate fractions and decimals with denominators of 10 and 100.
- I can locate fractions and decimals on the number line.
- I can compare decimals.
- I can use fractions or decimals to solve problems involving money.

## Math Standard(s):

- Extend understanding of fraction equivalence and ordering.\*
- Build fractions from unit fractions.\*
- Understand decimal notation for fractions, and compare decimal fractions.

*Priority content standards are indicated with a \*.*



**Learning Focus:** I will be able to interpret data from line plots, find equivalence in units of measure, and understand geometric concepts of angles and angle measurements.

<b>Sumdog Milestone(s): (15 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can interpret and represent data using line plots to solve problems.</li><li>• I can solve problems using line plots with fractions.</li><li>• I can convert customary units of length and weight from a larger unit to a smaller unit.</li><li>• I can convert metric units of length and mass from a larger unit to a smaller unit. .</li><li>• I can find the measure of an angle that runs through a fraction of a circle.</li><li>• I can use a protractor to measure angles.</li><li>• I can use addition and subtraction to solve problems involving angles. .</li><li>• I can find the perimeter of rectangles.</li></ul>	<ul style="list-style-type: none"><li>• Solve problems involving measurement and conversion of measurements.</li><li>• Represent and interpret data.</li><li>• Geometric measurement: understand concepts of angle and measure angles.</li></ul>



**Learning Focus:** I will be able to classify lines, angles and shapes.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can draw and identify parallel, perpendicular, and intersecting lines.</li><li>• I can classify triangles by their sides and angles.</li><li>• I can classify quadrilaterals by their sides and angles. .</li><li>• I can recognize lines of symmetry.</li></ul>	<ul style="list-style-type: none"><li>• Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</li></ul>

# 5th Grade: Operations & Algebraic Thinking



**Learning Focus:** I will be able to use orders of operations to interpret, write and evaluate numerical expressions as well as analyze numerical patterns.

<b>Sumdog Milestone(s): (20 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can use the orders of operations to evaluate expressions.</li><li>• I can use the orders of operations to write simple expressions.</li><li>• I can use the orders of operations to interpret expressions. .</li><li>• I can identify a numerical pattern.</li></ul>	<ul style="list-style-type: none"><li>• Write and interpret numerical expressions.</li><li>• Analyze patterns and relationships.</li></ul>

# 5th Grade: Number & Operations In Base 10 – Part 1



## Learning Focus:

I will be able to understand place value, multiply and divide multi-digit numbers, and apply all four operations on decimals.

## Sumdog Milestone(s): (20 Questions)

- I can write whole numbers using standard form, expanded form, and words.
- I can represent decimals to the thousandths as fractions.
- I can write numbers with decimals through thousandths using standard form, expanded form, and words.
- I can use place value to compare decimals through thousandths.
- I can use place value to round decimals. .
- I can use rounding and compatible numbers to estimate sums, differences products, and quotients.
- I can add decimals to hundredths using partial sums. .
- I can subtract decimals to hundredths using partial differences.

## Math Standard(s):

- Generalize place value understanding for multi-digit whole numbers.\*
- Use place value understanding and properties of operations to perform multi-digit arithmetic.\*

*Priority content standards are indicated with a \*.*

# 5th Grade: Number & Operations In Base 10 – Part 2



## Learning Focus:

I will be able to understand place value, multiply and divide multi-digit numbers, and apply all four operations on decimals.

## Sumdog Milestone(s): (20 Questions)

- I can use the standard algorithm to multiply multi-digit numbers by 1-digit numbers. .
- I can use the standard algorithm to multiply three-digit numbers by two-digit numbers.
- I can use rounding and compatible numbers to estimate the product of a decimal and whole number.
- I can use place value understanding to multiply a decimal and a whole number.
- I can multiply decimals using partial products.
- I can use compatible numbers and place value patterns to estimate quotients.
- I can solve division problems with two-digit divisors using partial quotients.
- I can use rounding and compatible numbers to estimate quotients with decimals.
- I can use models to divide a decimal by a decimal.

## Math Standard(s):

- Generalize place value understanding for multi-digit whole numbers.\*
- Use place value understanding and properties of operations to perform multi-digit arithmetic.\*

*Priority content standards are indicated with a \*.*

# 5th Grade: Number & Operations – Fractions



## Learning Focus:

I will be able to use equivalent fractions to add and subtract and apply my understanding of multiplication and division to multiply and divide fractions.

## Sumdog Milestone(s): (20 Questions)

- I can estimate sums and differences of fractions.
- I can find a common denominator for fractions with unlike denominators.
- I can add and subtract fractions with unlike denominators.
- I can estimate sums and differences of mixed numbers.
- I can add and subtract mixed numbers using models.
- I can add and subtract mixed numbers using equivalent fractions and a common denominator. .
- I can use models to subtract mixed numbers.
- I can add and subtract mixed numbers.
- I can multiply a fraction by a whole number and whole number by a fraction.
- I can multiply two fractions.
- I can use multiplication to divide a whole number by a unit fraction.
- I can use models to divide unit fractions by non-zero numbers and whole numbers by unit fractions.
- I can solve multi-step problems involving division with unit fractions.

## Math Standard(s):

- Understand the place value system.\*
- Perform operations with multi-digit whole numbers and with decimals to hundredths.\*

*Priority content standards are indicated with a \*.*

# 5th Grade: Measurement and Data



**Learning Focus:** I will be able to represent and interpret data, understand volume and convert measurements.

<b>Sumdog Milestone(s): (20 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can organize and display data in a line plot.</li><li>• I can solve problems using a line plot.</li><li>• I can find the volume of solid figures.</li><li>• I can find the volume of rectangular prisms by applying the formula.</li><li>• I can find the volume of a solid figure composed of two rectangular prisms.</li><li>• I can convert customary units of length, capacity and weight.</li><li>• I can convert metric units of length, capacity and weight.</li></ul>	<ul style="list-style-type: none"><li>• Represent and interpret data.</li><li>• Convert like measurement units within a given measurement system.</li><li>• Geometric measurement: understand concepts of volume.</li></ul>



**Learning Focus:** I will be able to plot points on the coordinate plane and classify two-dimensional figures.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can locate points on the coordinate plane.</li><li>• I can graph points on the coordinate plane.</li><li>• I can solve problems by graphing points.</li><li>• I can classify triangles and quadrilaterals by their properties.</li></ul>	<ul style="list-style-type: none"><li>• Graph points on the coordinate plane to solve real-world and mathematical problems.*</li><li>• Classify two-dimensional figures into categories based on their properties.</li></ul>

*Priority content standards are indicated with a \*.*

# 6th Grade: Ratios and Proportional Relationships – Part 1



## Learning Focus:

I will be able to understand, use and apply the concepts of ratios and rates.

## Sumdog Milestone(s): (15 Questions)

- I can describe the relationship between two quantities with a ratio.
- I can use bar diagrams and double number line diagrams to model ratio relationships.
- I can find equivalent ratios using multiplication and division.
- I can use ratio tables to compare ratios.
- I can represent equivalent ratios on graphs.
- I can use rates to describe ratios where the terms have different units.
- I can use rates and ratios to solve problems.

## Math Standard(s):

- Understand ratio concepts and use ratio reasoning to solve problems.\*

*Priority content standards are indicated with a \*.*

# 6th Grade: Ratios and Proportional Relationships – Part 2



## Learning Focus:

I will be able to understand, use and apply the concepts of ratios and rates.

## Sumdog Milestone(s): (15 Questions)

- I can compare ratios by finding the unit rate.
- I can use the unit rate to solve problems.
- I can represent and find the percent of a whole.
- I can write equivalent values for decimals, fractions and percents.
- I can convert fractions into decimals and decimals into percentages when the denominator of the fraction is not 100.
- I can write percentages that are greater than 100 and less than 1.
- I can estimate the percent of a number.
- I can write an equation to solve a percent problem to find the whole when given the part and to find the part when given the whole.

## Math Standard(s):

- Understand ratio concepts and use ratio reasoning to solve problems.\*

*Priority content standards are indicated with a \*.*

# 6th Grade: The Number System – Part 1



## Learning Focus:

I will be able to extend my understanding of the number system to include positive rational numbers and integers.

## Sumdog Milestone(s): (15 Questions)

- I can fluently add, subtract, multiply and divide whole numbers and decimals. .
- I can multiply fractions and mixed numbers.
- I can use models to divide fractions.
- I can use equations to divide fractions.
- I can use an algorithm to divide fractions by fractions.
- I can divide with mixed numbers and estimate the quotient of mixed numbers. .
- I can solve multistep problems with fractions and decimals.

## Math Standard(s):

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.\*
- Compute fluently with multi-digit numbers and find common factors and multiples.
- Apply and extend previous understandings of numbers to the system of rational numbers.\*

*Priority content standards are indicated with a \*.*

# 6th Grade: The Number System – Part 2



## Learning Focus:

I will be able to extend my understanding of the number system to include positive rational numbers and integers.

## Sumdog Milestone(s): (20 Questions)

- I can identify opposites of integers.
- I can compare and order integers.
- I can use integers to represent real-world quantities.
- I can plot rational numbers on a number line.
- I can compare and order rational numbers.
- I can use rational numbers to represent real-world quantities.
- I can use absolute value to represent the distance of a number from 0 on the number line.
- I can plot points on the coordinate plane with rational coordinates.
- I can reflect points on the coordinate plane across both axes.
- I can solve problems relating to distance between points on the coordinate plane. .
- I can find the length of sides of rectangles on the coordinate plane.
- I can find the perimeter of polygons on the coordinate plane.

## Math Standard(s):

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.\*
- Compute fluently with multi-digit numbers and find common factors and multiples.
- Apply and extend previous understandings of numbers to the system of rational numbers.\*

*Priority content standards are indicated with a \*.*

# 6th Grade: Expressions and Equations – Part 1



## Learning Focus:

I will be able to use numerical and algebraic expressions to represent situations and solve equations and inequalities.

## Sumdog Milestone(s): (15 Questions)

- I can write expressions using whole-number exponents to represent situations.
- I can evaluate expressions with whole number exponents.
- I can find the prime factors of whole numbers. .
- I can find the Greatest Common Factor and the Least Common Multiple of two whole numbers.
- I can apply the GCF and LCM to solve problems.
- I can apply the orders of operations to solve problems.

## Math Standard(s):

- Apply and extend previous understandings of arithmetic to algebraic expressions.\*
- Reason about and solve one-variable equations and inequalities.\*
- Represent and analyze quantitative relationships between dependent and independent variables.\*

*Priority content standards are indicated with a \*.*

# 6th Grade: Expressions and Equations – Part 2



**Learning Focus:** I will be able to use numerical and algebraic expressions to represent situations and solve equations and inequalities.

## Sumdog Milestone(s): (20 Questions)

- I can write an algebraic expression from a word phrase.
- I can evaluate algebraic expressions that include whole numbers, decimals and fractions.
- I can write and identify equivalent algebraic expressions.
- I can simplify algebraic expressions by combining like terms.
- I can use substitution to find solutions to equations.
- I can use the properties of equality to maintain equality in an equation.
- I can write one variable equations.
- I can use inverse relationships and properties of equality to solve one-step equations.
- I can understand the symbols required to write an inequality.
- I can write inequalities to describe relationships. .
- I can solve inequalities and represent solutions on a number line.
- I can identify dependent variables and independent variables.
- I can analyze relationships between dependent and independent variables using a table, graph and equation.

## Math Standard(s):

- Apply and extend previous understandings of arithmetic to algebraic expressions.\*
- Reason about and solve one-variable equations and inequalities.\*
- Represent and analyze quantitative relationships between dependent and independent variables.\*

*Priority content standards are indicated with a \*.*

**Learning Focus:**

I will be able to solve geometric problems involving area, surface area, and volume.

**Sumdog Milestone(s): (10 Questions)**

- I can apply formulas to find areas of parallelograms, rhombuses and triangles.
- I can find a missing dimension of a parallelogram or rhombus or triangle when given the area.
- I can find the areas of trapezoids, kites and other polygons by decomposing the figures.
- I can classify solid figures.
- I can identify a solid figure from nets.
- I can find the surface area of rectangular and triangular prisms.
- I can find the surface area of square and triangular pyramids.
- I can use a formula to find the volume of rectangular prisms including rectangular prisms with fractional edges.

**Math Standard(s):**

- Solve real-world and mathematical problems involving area, surface area, and volume.



**Learning Focus:** I will be able to display, describe, interpret and summarize data.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can identify and write statistical questions.</li><li>• I can find the mean, median, mode and range of a data set.</li><li>• I can display data in a box and whisker plot.</li><li>• I can interpret and analyze data from a box and whisker plot.</li><li>• I can organize data in a frequency table or a histogram.</li><li>• I can analyze and interpret data from a histogram.</li><li>• I can calculate the mean absolute deviation (MAD) and the interquartile range (IQR) of a data set.</li><li>• I can summarize data using measures of variability and measures of center.</li><li>• I can select the most appropriate measure of center and variability for a data set.</li><li>• I can describe the center, spread and overall shape of a data set.</li></ul>	<ul style="list-style-type: none"><li>• Develop understanding of statistical variability.</li><li>• Summarize and describe distributions.</li></ul>

# 7th Grade: Ratios and Proportional Relationships – Part 1



**Learning Focus:** I will be able to use and analyze proportional relationships.

## Sumdog Milestone(s): (15 Questions)

- I can use ratios and rates to describe the relationship between two quantities.
- I can find unit rates with ratios of fractions.
- I can find unit rates and use them to solve multi-step problems.
- I can determine whether quantities are proportional.
- I can use the constant of proportionality to write equations that represent proportional relationships.
- I can use equations to solve problems involving proportional relationships.

## Math Standard(s):

- Analyze proportional relationships and use them to solve real-world and mathematical problems.\*

*Priority content standards are indicated with a \*.*

# 7th Grade: Ratios and Proportional Relationships – Part 2



**Learning Focus:** I will be able to use and analyze proportional relationships.

<b>Sumdog Milestone(s): (10 Questions)</b>	<b>Math Standard(s):</b>
<ul style="list-style-type: none"><li>• I can recognize a proportional relationship from a graph.</li><li>• I can identify a constant of proportionality from a graph.</li><li>• I can interpret points on a graph of a proportional relationship.</li><li>• I can create a percent proportion.</li><li>• I can use a percent proportion to find an unknown part, whole or percent.</li><li>• I can solve real world problems involving percent change and percent error. .</li><li>• I can calculate and understand markups and markdowns.</li><li>• I can calculate and understand simple interest.</li></ul>	<ul style="list-style-type: none"><li>• Analyze proportional relationships and use them to solve real-world and mathematical problems.*</li></ul>

*Priority content standards are indicated with a \*.*

# 7th Grade: The Number System



**Learning Focus:** I will be able to apply all four operations to integers and rational numbers.

## Sumdog Milestone(s): (10 Questions)

- I can add positive and negative integers and use them to model real world scenarios.
- I can identify rational numbers and write them as decimals.
- I know that subtraction of integers is adding the additive inverse,  $p - q = p + (-q)$ .
- I can add and subtract rational numbers.
- I can multiply positive and negative numbers and apply integer multiplication to real world situations.
- I can find the product of rational numbers.
- I can apply the rules of multiplication to understand how to divide integers.
- I can determine equivalent integer quotients.
- I can relate the signs of integer multiplication to the signs in a related division statement.

## Math Standard(s):

- Apply and extend previous understandings of operations with fractions.\*

*Priority content standards are indicated with a \*.*

# 7th Grade: Expressions and Equations



## Learning Focus:

I will be able to generate equivalent algebraic expressions and create, solve and model equations.

## Sumdog Milestone(s): (10 Questions)

- I know how variables are used to represent unknown values in problems.
- I can use properties of operations to write equivalent expressions.
- I can simplify algebraic expressions by combining like integer and rational terms.
- I can apply the Distributive Property to expand expressions.
- I understand that expanding an expression is the reverse of factoring.
- I can identify the GCF of algebraic terms in an expression.
- I can use properties of operations to add and subtract expressions. .
- I can interpret word problems to write and solve two-step equations.
- I can solve multi-step equations by using the Distributive Property. .
- I can graph the solution of inequalities on a number line. .
- I can write inequalities and solve them using the Addition, Subtraction, Multiplication and Division Properties of Inequality. .
- I can write and solve two-step inequalities. .
- I can solve an inequality by multiplying or dividing by a negative integer.
- I can apply the Distributive Property to solve multi-step inequalities.

## Math Standard(s):

- Use properties of operations to generate equivalent expressions.\*
- Solve real-life and mathematical problems using numerical and algebraic expressions and equations.\*

*Priority content standards are indicated with a \*.*

**Learning Focus:**

I will be able to solve geometric problems that involve angle relationships, area, surface area and volume.

**Sumdog Milestone(s): (10 Questions)**

- I can use and interpret scale drawings that represent actual lengths and areas.
- I can name and classify quadrilaterals by their properties.
- I can determine whether a triangle can be formed and the type of triangle it is.
- I can calculate the measure of angles by using angle relationships.
- I can calculate the circumference, radius and diameter of circles.
- I understand the value of pi as the relationship between the circumference of the circle and the diameter of the circle.
- I can calculate the area of a circle and solve problems involving the area of a circle.
- I can describe the cross section of a three-dimensional figure.
- I can find the surface area of three-dimensional composite shapes.
- I can calculate the volume of three-dimensional shapes.

**Math Standard(s):**

- Draw construct, and describe geometrical figures and describe the relationships between them.
- Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.



## Learning Focus:

I will be able to use sampling to draw inferences about populations and solve problems involving probability.

## Sumdog Milestone(s): (20 Questions)

- I can understand the difference between a sample and a population.
- I can make estimates about populations based on samples.
- I can use box plots to informally compare two populations.
- I can use the median and IQR of data sets to informally compare and make inferences about populations. .
- I can use measures such as mode, range, mean, and mean absolute deviation (MAD) to compare populations. .
- I can understand and use probability to describe the likelihood that an event will occur. .
- I understand and explain the difference between theoretical probability and experimental probability.
- I can understand and use theoretical probability to predict outcomes.
- I can understand and use experimental probability to make predictions.
- I can develop and use probability models to evaluate situations and make estimates.
- I can determine the sample space for compound events by creating a tree diagram, table or organized list. .
- I can find the probability of compound events.

## Math Standard(s):

- Use random sampling to draw inferences about a population.
- Draw informal comparative inferences about two populations.
- Investigate chance processes and develop, use, and evaluate probability models.

# 8th Grade: The Number System



**Learning Focus:** I will be able to understand and use Real Numbers to solve problems.

Sumdog Milestone(s): (15 Questions)	Math Standard(s):
<ul style="list-style-type: none"><li>• I can use a number line to locate repeating decimals.</li><li>• I can write repeating decimals as a fraction.</li><li>• I can classify numbers as rational or irrational.</li><li>• I can understand square roots and perfect square numbers.</li><li>• I can approximate square roots by using perfect square numbers.</li><li>• I will be able to solve problems with square roots.</li></ul>	<ul style="list-style-type: none"><li>• Know that there are numbers that are not rational, and approximate them by rational numbers.*</li></ul>

*Priority content standards are indicated with a \*.*



**Learning Focus:** I will be able to understand and use functions to model relationships.

## Sumdog Milestone(s): (15 Questions)

- I can identify if a relation is a function.
- I can interpret functions.
- I can identify functions in different representations such as equations, tables, and graphs.
- I can identify the difference between linear and nonlinear functions.
- I can compare properties of linear and nonlinear functions in various representations.
- I can create a linear function modeling a situation using the form  $y = mx + b$ .
- I can describe the behavior of a function by analyzing its graph.
- I can describe the graph of a function at each interval.

## Math Standard(s):

- Define, evaluate, and compare functions.\*
- Use functions to model relationships between quantities.\*

*Priority content standards are indicated with a \*.*

# 8th Grade: Expressions and Equations – Part 1



## Learning Focus:

I will be able to apply properties of exponents to simplify expressions, analyze and solve linear equations and linear systems.

## Sumdog Milestone(s): (20 Questions)

- I can evaluate square roots and cube roots to solve problems.
- I can evaluate perfect squares and perfect cubes.
- I can solve equations involving perfect squares or perfect cubes.
- I can solve equations involving imperfect squares or cubes. .
- I can multiply and divide expressions with integer exponents.
- I can simplify exponential expressions.
- I can use scientific notation to write very small and very big numbers.
- I can convert scientific notation to standard form.
- I can add, subtract, multiply and divide numbers in scientific notation.
- I can combine like terms.
- I can solve equations with like terms on one side of the equation.
- I can solve equations with like terms on both sides of the equation.
- I can determine the number of solutions to an equation.

## Math Standard(s):

- Expressions and Equations Work with radicals and integer exponents.\*
- Understand the connections between proportional relationships, lines, and linear equations.\*
- Analyze and solve linear equations and pairs of simultaneous linear equations.\*

*Priority content standards are indicated with a \*.*

# 8th Grade: Expressions and Equations – Part 2



## Learning Focus:

I will be able to apply properties of exponents to simplify expressions, analyze and solve linear equations and linear systems.

## Sumdog Milestone(s): (20 Questions)

- I can analyze equations, linear graphs and tables to find a unit rate and compare it to a proportional relationship.
- I can find the slope of a line using various strategies.
- I can interpret the slope of a line.
- I can understand the relationship between the constant of proportionality and the slope of a line.
- I can write linear equations in the form of  $y = mx$ .
- I can graph a linear equation in the form of  $y = mx$ .
- I can interpret the y-intercept of a line from a table or graph.
- I can write a linear equation that represents a graph of a line.
- I can graph a line in the form of  $y = mx + b$ .
- I can determine the solution of a linear system of equations based upon intersection points.
- I can compare linear systems by understanding relationships between solutions and the slopes of the lines.
- I can create and analyze graphs of linear systems to determine the solutions.
- I can solve linear systems of equations by using substitution.
- I can solve linear systems of equations by using elimination.
- I can solve real world situations using linear systems of equations.

## Math Standard(s):

- Expressions and Equations Work with radicals and integer exponents.\*
- Understand the connections between proportional relationships, lines, and linear equations.\*
- Analyze and solve linear equations and pairs of simultaneous linear equations.\*

*Priority content standards are indicated with a \*.*



**Learning Focus:** I will be able to solve geometric problems that involve similarity, congruence, surface area, volume, and the Pythagorean Theorem.

## Sumdog Milestone(s): (20 Questions)

- I can identify a translation, reflection and rotation. .
- I can translate figures on the coordinate plane.
- I can reflect two-dimensional figures.
- I can rotate two-dimensional figures.
- I can identify congruent figures.
- I can understand a sequence of transformations. .
- I can understand congruence of figures through transformations.
- I can identify congruent figures.
- I can dilate figures on the coordinate plane.
- I can understand similarity and identify similar figures.
- I can determine if triangles are similar. .
- I can solve problems involving similar triangles. .
- I can understand the relationships of angles formed by parallel lines and a transversal line.
- I can apply the relationship between angles formed by parallel lines and transversal to find angle measures and solve problems.

## Math Standard(s):

- Understand congruence and similarity using physical models, transparencies, or geometry software.\*
- Understand and apply the Pythagorean Theorem.\*
- Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.\*

*Priority content standards are indicated with a \*.*



## Learning Focus:

I will be able to solve geometric problems that involve similarity, congruence, surface area, volume, and the Pythagorean Theorem.

## Sumdog Milestone(s): (15 Questions)

- I can understand the Pythagorean Theorem.
- I can use the Pythagorean Theorem to find missing sides of a right triangle.
- I can understand and apply the Converse of the Pythagorean Theorem to identify right triangles.
- I can apply the Pythagorean Theorem and the Converse of the Pythagorean Theorem to solve problems.
- I can use the Pythagorean Theorem to find the distance between points on the coordinate plane.
- I can find the perimeter of a figure on the coordinate plane.
- I can identify the third vertex of a triangle on the coordinate plane.
- I can find the surface area of cones, cylinders, and spheres.
- I can use the formula to find the volume of cylinders, cones, and spheres.
- I can apply the Pythagorean Theorem to find a missing dimension when finding volume.

## Math Standard(s):

- Understand congruence and similarity using physical models, transparencies, or geometry software.\*
- Understand and apply the Pythagorean Theorem.\*
- Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

*Priority content standards are indicated with a \*.*



**Learning Focus:** I will be able to explore bivariate data.

**Sumdog Milestone(s): (10 Questions)**

- I can construct a scatter plot to show paired data.
- I can interpret data from a scatter plot.
- I can determine if paired data has a linear relationship.
- I can determine if paired data has a strong positive or negative correlation.
- I can use the slope and y-intercept of a trend line to make a prediction.
- I can organize and compare paired data in a two-way frequency table.
- I can make conjectures about paired data from a two-way frequency table.

**Math Standard(s):**

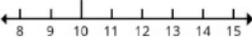
- Investigate patterns of association in bivariate data.



# Example Questions

Please note that in these example questions, the green tick indicating the correct answer will not appear on a child's screen when they take the assessment.

1  $8 + 6 = ?$

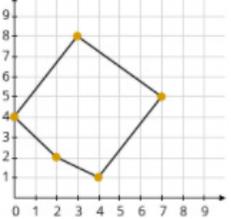


14  8  2  11

2  $1 + 1 + 10 = ?$

8  12  11  13

9 Find the coordinates for the polygon.



$(2,2), (4,1), (6,5), (4,9), (0,4)$    $(2,2), (4,1), (7,5), (3,8), (0,4)$

12 Find the total of the two angles shown.



$141^\circ$    $155^\circ$    $156^\circ$    $256^\circ$

1 Is  $\frac{1}{2}$  shaded?

2 What is ?

$\frac{19}{10}$    $\frac{9}{10}$   1   $\frac{19}{20}$



The premade tests in our assessment library are also linked to our new enhanced assessment reporting, which includes a summary assessment report and breakdowns of how your pupils answered each question. The summary assessment report enables you to quickly check participation, distribution of scores, which questions your students struggled with and your highest and lowest scoring students.

For each question, you can also check how students answered incorrectly to identify common misconceptions and inform your teaching. As our questions are fully standards-aligned, you can even see at a glance which areas of your standards require intervention.





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