

Mathematics program of study: Indiana Standards for Mathematics

Sumdog Scheme of Learning Kindergarten - Grade 8

Use our handy scheme of learning to help with your planning, tracking and monitoring

How to use the Sumdog Scheme of Learning





When students first login to Sumdog, they will complete a diagnostic test, this will place them at the correct starting point in our scheme of learning.

Want to re-set the starting point or choose your own? No problem.



Our advanced learning engine will adapt the questions students receive.

Differentiation is taken care of (in a subtle way).

Questions cover reviews of past content and new, progressive learning following our scheme.



Children love our games.

They are rewarded with coins for their house, pet and garden.

Teacher Tools



Want to focus learning?

You can easily select the appropriate standard for a challenge for your class.



Data and reporting available making **tracking student progress** and assessment **moderation** a breeze!



Choose and set topics for homework, easily.

The best bit is we do the marking!



Keep your class motivated by creating competitions or why not enter a **regional or national contest** and see if you can win our trophy!



Our ready-made assessment library for Grades K-8 has an assessment for each mathematics domain, completely mapped to the Common Core State Standards.

Or easily make your own!



Growth Mindset

With common misconceptions identified, use our questions as a teaching point, learning from mistakes!

Kindergarten



Subtract with Doubles Facts K.CA.1_1	Add with 3 K.CA.2_4	Skip Count K.CA.5_2	_	Count in 1s K.NS.3_1
Take Away with Objects K.CA.1_2	Add with 4 K.CA.2_5	3D Shapes K.DA.1_1		One More/One Less K.NS.3_2
Add and Subtract Word Problems K.CA.2_1	Add with 5 or 6 K.CA.2_6	2D Shapes K.G.2_1		Count to 10 K.NS.5_1
Subtract from 3, 4, 5, 6, or 7 K.CA.2_10	Add with 7, 8, or 9 K.CA.2_7	Compare Measures K.M.1_1		Count to 25 K.NS.5_2
Subtract from 8 or 9 K.CA.2_11	Subtract from 10 K.CA.2_8	Count in 10s K.NS.1_1		Count to 5 K.NS.5_3
Add with 1 K.CA.2_2	Subtract from 11 or 12 K.CA.2_9	Count in 1s K.NS.1_2		Compare and Order Sets K.NS.7_1
Add with 2 K.CA.2_3	Shape Patterns K.CA.5_1	Numbers in Words K.NS.2_1		Compare and Order Numbers K.NS.8_1

Strands (Kindergarten - Grade 5):

■ Algebraic Thinking (AT) ■ Computation

■ Data Analysis (DA)

■ Measurement (M)

■ Computation & Algebraic Thinking (CA)
■ Number Sense (NS)

■ Geomety (G)





Add and Subtract with Unknowns 1.CA.1_1	Add Three or Four Numbers within 100	Picture Graphs 1.DA.1_1	Positions ■ 1.NS.3_1 ■
Add Three or Four 1-Digit Numbers	1.CA.5_2 Add with 2-Digit Numbers	Tables 1.DA.1_2	Compare Numbers 1.NS.4_1
1.CA.1_2 Inverse and Related Questions	1.CA.5_3 Add with Multiples of 10	Fractions 1.G.4_1	Order Numbers 1.NS.4_2
1.CA.1_3 Addition and Subtraction Word	1.CA.5_4 Column Addition	Halves 1.M.1_1	Ten Less 1.NS.5_1
Problems 1.CA.2_1	1.CA.5_5 Inverse and Related Questions	Time 1.M.2_1	Ten More 1.NS.5_2
Subtract from 13 or 14 1.CA.2_2	1.CA.5_6	Add and Subtract Money	Number Forms
Subtract from 15, 16, 17, or 18	Inverse and Related Questions 1.CA.6_1	1.M.3_1 Coin Collections	1.NS.6_1 Place Value
1.CA.2_3 Add and Subtract with Unknowns	Number Patterns 1.CA.7_1	1.M.3_2	1.NS.6_2
1.CA.5_1	1.On.7 _ 1	Place Value 1.NS.2_1	•

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Add Single-Digit Numbers 2.CA.1_1	Subtract 1-Digit Numbers within 1,000	Column Addition 2.CA.4_6	3D Shapes 2.G.1_2
Column Addition and Subtraction	2.CA.4_11	Column Subtraction	Fractions
2.CA.1_2 Subtract 1-Digit Numbers from 2-Digit Numbers	Subtract Multiples of 10 within 1,000 2.CA.4_12	2.CA.4_7 More / Less 2.CA.4_8	2.G.5_1 Compare Measures 2.M.1_1
2.CA.1_3 Subtract 2-Digit Numbers	Subtract Multiples of 10 within 100 2.CA.4_13	Place Value 2.CA.4_9	Estimate Measures 2.M.2_1
2.CA.1_4 Subtract Multiples of 10 within	Subtract Multiples of 100 2.CA.4_14	Arrays 2.CA.5_1	Estimate Measures 2.M.4_1
100 2.CA.1_5	Subtract with 2- and 3-Digit	Bar Graphs 2.DA.1_1	Clocks ■ 2.M.5_1
Money 2.CA.2_1	Numbers 2.CA.4_15	Dot Plots 2.DA.1_2	Time Sequences 2.M.5_2
Word Problems 2.CA.2_2	Add with 1-Digit Numbers 2.CA.4_2		Convert Times
Add and Subtract Lengths 2.CA.3_1	Add with 2- and 3-Digit Numbers 2.CA.4_3	2.DA.1_3 Scaled Graphs	2.M.6_1 Money
Add and Subtract with Unknowns 2.CA.4_1	Add with Multiples of 10 2.CA.4_4	2.DA.1_4 Tables	2.M.7_1 Count in 100s
Related Questions 2.CA.4_10	Add with Multiples of 100 2.CA.4_5	2.DA.1_5 2D Shapes 2.G.1_1	2.NS.1_1

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Grade 2 (continued)

2.NS.2_1



Count in 1s, 2s, 5s, and 10s Numbers in Words Forms of Numbers Compare and Order 2.NS.1_2 2.NS.7_1 2.NS.2_2 2.NS.6_1 Forms of Numbers Estimate on a Number Line Place Value

2.NS.6_2

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HINT: You can focus learners easily on any skill to match your classroom lesson

2.NS.3_1



Multiplication & Division Word Problems	Model Multiplication 3.C.2_2 ■	Multiply Three Numbers 3.C.5_8	Multiply by 5 through 5 3.C.6_18
3.AT.2_1 Addition & Subtraction Word	Multiply with Arrays 3.C.2_3	Multiplication and Division 3.C.5_9	Multiply by 5, 6 to 10 3.C.6_19
Problems 3.AT.3_1	Divide 2- or 3-Digit Numbers 3.C.5_1	Divide 12 to 20	Divide 21 to 30 3.C.6_2
Divide 2- or 3-Digit Numbers 3.AT.5_1	Skip Count 3.C.5_10	Multiply by 10 through 6 3.C.6_10	Multiply by 6 3.C.6_20
Model Division with 2- or 3-Digit Numbers	Divide 4 to 10 3.C.5_2	Multiply by 10, 7 to 10 3.C.6_11	Multiply by 7 or 9 3.C.6_21
3.AT.5_2 Unknown Numbers in Division	Identify the Correct Equation 3.C.5_3	Multiply by 2 through 5 3.C.6_12	Multiply by 8 3.C.6_22
3.AT.5_3 Unknown Numbers in	Inverses 3.C.5_4	Multiply by 2, 6 to 10 3.C.6_13	Multiplication and Division 3.C.6_23
Multiplication 3.AT.5_4	Multiplication & Division Word Problems	Multiply by 3 through 6 3.C.6_14	Divide 32 to 40 3.C.6_3
Patterns 3.AT.6_1	3.C.5_5	Multiply by 3, 7 to 9	Divide 4 to 10
Addition & Subtraction Word	Multiply by 5 through 5 3.C.5_6	3.C.6_15 Multiply by 4 through 6	3.C.6_4 Divide 42 to 60
Problems 3.C.1_1	Multiply by 5, 6 to 10	3.C.6_16	3.C.6_5
Describe Arrays 3.C.2_1	3.C.5_7	Multiply by 4, 7 to 9 3.C.6_17	•

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Highlight and annotate me



Divide 63 to 100 3.C.6_6	Add and Subtract Units of Measure	Money 3.M.4_1 ■	Compare and Order Fractions 3.NS.3_1
Division Tables: 2, 5, 10, 3 3.C.6_7	3.M.1_1 Add and Subtract Units of	Area 3.M.5_2	Identify Fractions 3.NS.3_2
Division Tables: 4, 8, 6, 9, 7 3.C.6_8	Measure 3.M.1_2	Area 3.M.6_3	Multiples of Unit Fractions 3.NS.3_3
Doubling and Halving 3.C.6_9	Compare Measures 3.M.1_3	Model Multiplication 3.M.6_4	Identify Fractions 3.NS.4_1
Tables 3.DA.1_1	Estimate Measures 3.M.1_4	Perimeter 3.M.7_1	Identify Fractions 3.NS.5_1
Geometry 3.G.1_1	Compare Measures 3.M.2_1	Perimeter - All Sides Given 3.M.7_2	Equivalent Fractions 3.NS.7_1
Geometry 3.G.2_1	Clocks 3.M.3_1	Perimeter of Composite Figures 3.M.7_3	Compare and Order Fractions 3.NS.8_1
Geometry 3.G.3_1	Durations 3.M.3_2	Forms of Numbers 3.NS.1_1	Rounding to Estimate 3.NS.9_1
Multiples of Unit Fractions 3.G.4_1	Schedules 3.M.3_3	Compare and Order Numbers 3.NS.2_1	-

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Addition Word Problems 4.AT.1_1	Multiply With 2-Digit Numbers 4.C.2_1 ■	Add & Subtract Fractions Greater Than 1	Histograms 4.DA.1_2 ■
Dot Plots 4.AT.4_1	Multiply With 3-Digit Numbers 4.C.2_2	4.C.5_1 Fractions with Like Denominators	Line Graphs 4.DA.1_3
Add and Subtract Fractions with Like Denominators	Multiply with 4-Digit Numbers 4.C.2_3	4.C.5_2 Fractions with Related	Line Plots 4.DA.1_4
4.AT.5_1	Multiply with Multiples of Powers of 10	Denominators 4.C.5_3	Timetables 4.DA.1_5
4.C.1_1 Column Addition	4.C.2_4 Divide by 1-Digit Numbers	Add and Subtract Tenths 4.C.5_4	Circle Graphs 4.DA.3_1
4.C.1_2 ■	4.C.3_1	Fraction Word Problems 4.C.5_5	More Than One Line of Symmetry
Column Subtraction 4.C.1_3	Divide with Multi-Digit Numbers 4.C.3_2	Inverse Relationships with	4.G.2_1 One Line of Symmetry
Multi-Step Problems 4.C.1_4	Number Patterns 4.C.3_3	Fractions 4.C.5_6	4.G.2_2
Subtract within 10,000 4.C.1_5	Multi-Step Problems 4.C.4_1	Unit Fraction Multiplication 4.C.5_7 ■	Angles 4.G.3_1
Tre/False Addition & Subtraction Equations	Multiply With 2-Digit Numbers 4.C.4_2	Add and Subtract Fractions Greater Than 1	Lines, Line Segments, and Rays 4.G.3_2 Angles
4.C.1_6 ■	Multiplying Three Numbers 4.C.4_3	4.C.6_1	4.G.4_1

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Lines, Line Segments, and Rays 4.G.4_2	Elapsed Time - Clocks 4.M.3_1	Equivalent Fractions 4.NS.4_1	Factors 4.NS.8_1	
Compare Measures 4.M.2_1	Elapsed Time - Timetables 4.M.3_2	Compare and Order Fractions 4.NS.5_1	Multiplying Three Numbers 4.NS.8_2	
Convert Customary Mixed Units 4.M.2_2	Perimeter and Area 4.M.4_1	Compare and Order Fractions 4.NS.6_1	Rounding to Estimate 4.NS.9_1	
Convert Metric Mixed Units	Perimeter and Area of Composite	Read Decimal Numbers	2 Times table (fluent)	
4.M.2_3	Shapes	4.NS.6_2	. 3 Times table (fluent)	
Convert Whole-Number Measures	4.M.4_2	Compare Decimal Numbers	4 Times table (fluent)	
4.M.2_4	Forms of Numbers 4.NS.1_1	4.NS.7_1	5 Times table (fluent)	
Measurement Tables 4.M.2_5	Compare and Order Numbers 4.NS.2_1	Read Decimal Numbers 4.NS.7_2	10 Times table (fluent)	•

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Solve Division Word Problems 5.AT.1_1	Divide by 10, 25, 100, or 2-Digit Numbers	Properties of Numbers 5.C.9_2	Perimeter of Quadrilaterals 5.M.3_3
Solve Fraction Word Problems 5.AT.2_1	5.C.2_1 Multiply Fractions	Line Graphs 5.DA.1_1	Find Volume Using Area of Base and Height
Solve Fraction Word Problems 5.AT.3_1	5.C.3_1 Add and Subtract Fractions	Measures of Centre 5.DA.2_1 ■	5.M.4_1 Volume in Cubic Units
Divide with Unit Fractions 5.AT.4_1	5.C.4_1 Find a Fraction of a Number	Parts of a Circle 5.G.1_1	5.M.4_2 Compare Volumes
Solve Addition and Subtraction Decimal Word Problems 5.AT.5_1	5.C.5_1 Multiply Fractions 5.C.5_2	Classify Triangles 5.G.2_1 Convert Time	5.M.5_1 Find Volume Using Area of Base and Height
Graph in First Quadrant 5.AT.6_1	Divide with Unit Fractions 5.C.7_1	5.M.1_1 Customary Measures of Length	5.M.5_2 Find Volume Using Three
Graph in Four Quadrants 5.AT.7_1	Add and Subtract Tenths 5.C.8_1	5.M.1_2 Metric Measures of Length	Dimensions 5.M.5_3
Multiply 2-Digit Numbers by 2-Digit Numbers	Add and Subtract with Two or Three Decimal Places	5.M.1_3 Area of Triangles and	Volume Word Problems 5.M.5_4
5.C.1_1 Numerical Patterns	Multiply Decimals	Quadrilaterals 5.M.3_1	Volume of Composite Figures 5.M.6_1
5.C.1_2 ■	5.C.8_3 Expressions and Equations 5.C.9_1	Perimeter and Area Problems 5.M.3_2	Order Decimal Numbers 5.NS.1_1

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Grade 5 (continued)



5.NS.2_1	Multiply or Divide by a Power of 10	Round Decimals 5.NS.5_1	8 Times table (fluent) 9 Times table (fluent)
Place Value to 10,000,000	5.NS.4_1	6 Times table (fluent)	11 Times table (fluent)
5.NS.3_1	Numerical Patterns 5.NS.4_2	7 Times table (fluent)	12 Times table (fluent)

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Numerical expressions involving whole-numbers

6.EE.A.1

Identify parts of an expression

6.EE.A.2.b

Write, read, and evaluate expressions

6.EE.A.2.c

Apply the properties of operations

6.EE.A.3

Identify when two expressions are equivalent

6.EE.A.4

Understand solving an equation or inequality

6.EE.B.5

Use variables to represent numbers

6.EE.B.6

Solve problems by writing equations

6.EE.B.7

Write an inequality of the form to represent a constraint or condition

6.EE.B.8

Use variables to represent two quantities in a real-world problem

6.EE.C.9

Find the area of right triangles, other triangles

6.G.A.1

Find the volume of a right rectangular prism with fractional edge lengths

6.G.A.2

Draw polygons in the coordinate plane given coordinates for the vertices

6.G.A.3

Part 1 - Represent threedimensional figures using nets made up of rectangles and triangles

6.G.A.4

Part 2 - Represent threedimensional figures using nets made up of rectangles and triangles

6.G.A.4

Interpret and compute quotients of fractions

6.NS.A.1

Fluently divide multi-digit numbers using the standard algorithm.

6.NS.B.2

Fluently add, subtract, multiply, and divide multi-digit decimals

6.NS.B.3

Find the greatest common factor of two whole numbers less than or equal to 100

6.NS.B.4

Understand that positive and negative number are used together to describe quantities **6.NS.C.5**

Recognize opposite signs of numbers as indicating locations on the number line

6.NS.C.6.a

Understand signs of numbers in quadrants of the coordinate plane

6.NS.C.6.b

Understand a rational number as a point on the number line.

6.NS.C.6.c

Interpret statements of inequality about the relative position of two numbers on

6.NS.C.7.a

Understand ordering and absolute value of rational numbers.

6.NS.C.7.c

Understand the concept of a ratio

6.RP.A.1

Understand the concept of a unit rate

6.RP.A.2



- Expressions & Equations (EE)
- The Number System (NS)
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- Functions (F)



Grade 6 (continued)



Make tables of equivalent ratios

6.RP.A.3.a

Solve unit rate problems including those involving unit pricing and constant speed.

6.RP.A.3.b

Part 2 – Use ratio and rate reasoning to solve real-world and mathematical problems

6.RP.A.3.c

Part 2 – Use ratio and rate reasoning to solve real-world and mathematical problems

6.RP.A.3.c

Use ratio and rate reasoning to solve real-world and mathematical problems

6.RP.A.3.d

Recognize a statistical question

6.SP.A.1

Recognize that a measure of centre for a numerical data set **6.SP.A.3**

Display numerical data in plots on a number line

6.SP.B.4

Part 1 – Reporting the number of observations.

6.SP.B.5.A

Part 2 – Reporting the number of observations.

6.SP.B.5.A

Describing the nature of the attribute under investigation **6.SP.B.5.B**

Part 1 – Summarize numerical data sets in relation to their context

6.SP.B.5.c

Part 2 - Summarize numerical data sets in relation to their context

6.SP.B.5.c

Part 3 – Summarize numerical data sets in relation to their context

6.SP.B.5.c

Strands (Grade 6 - 8):

- Expressions & Equations (EE)
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Apply properties of operations

7.EE.A.1

Solve mathematical problems posed with positive and negative rational numbers

7.EE.B.3

Solve word problems leading to equations of the form px + q = r and p(x + q) = r

7.EE.B.4.a

Solve word problems leading to inequalities of the form px + q > r or px + q < r

7.EE.B.4.b

Describe the two-dimensional figures that result from slicing three-dimensional figures

7.G.A.3

Know the formulas for the area and circumference of a circle **7.G.B.4**

Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step

Part 1 – Solve real-world and mathematical problems of twoand three-dimensional objects

7.G.B.6

7.G.B.5

Part 2 – Solve real-world and mathematical problems of twoand three-dimensional objects

7.G.B.6

Part 3 – Solve real-world and mathematical problems of twoand three-dimensional objects

7.G.B.6

Part 4 – Solve real-world and mathematical problems of twoand three-dimensional objects **7.G.B.6** Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers

7.NS.A.1

Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative.

7.NS.A.1.b

Understand subtraction of rational numbers as adding the additive inverse, p - q = p + (-q).

7.NS.A.1.c

Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers

7.NS.A.1.d

Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

7.NS.A.2.c

Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

7.NS.A.2.d

Part 1 – Solve real-world and mathematical problems involving the four operations with rational numbers.

7.NS.A.3

Part 2 - Solve real-world and mathematical problems involving the four operations with rational numbers.

7.NS.A.3

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Grade 7 (continued)



Part 3 – Solve real-world and mathematical problems involving the four operations with rational numbers.

7.NS.A.3

Part 4 – Solve real-world and mathematical problems involving the four operations with rational numbers.

7.NS.A.3

Recognize and represent proportional relationships between quantities.

7.RP.A.2.a

Recognize and represent proportional relationships between quantities.

7.RP.A.2.b

Recognize and represent proportional relationships between quantities.

7.RP.A.2.c

Part 1 – Use proportional relationships to solve multistep ratio and percent problems.

7.RP.A.3

Part 2 – Use proportional relationships to solve multistep ratio and percent problems.

7.RP.A.3

Understand that statistics can be used to gain information about a population by examining a sample of the population

7.SP.A.1

Use data from a random sample to draw inferences about a population with an unknown characteristic of interest.

7.SP.A.2

Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.

7.SP.C.5

Develop a probability model and use it to find probabilities of events.

7.SP.C.7.a

Understand that the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.

7.SP.C.8.A

Find probabilities of compound events using lists, tables, tree diagrams, and simulation.

7.SP.C.8.

Strands (Grade 6 - 8):

- Expressions & Equations (EE)
- The Number System (NS)
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Part 1 – Know and apply the properties of integer exponents to generate equivalent numerical expressions.

8.EE.A.1

Part 2 - Know and apply the properties of integer exponents to generate equivalent numerical expressions.

8.EE.A.1

Use square root & cube root symbols to represent solutions to equations of the form x2 = p & x3= p, where p is a positive rational number.

8.EE.A.2

Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities **8.EE.A.3**

Part 1 – Perform operations with numbers expressed in scientific notation

8.EE.A.4.1

Part 2 – Perform operations with numbers expressed in scientific notation

8.EE.A.4.1

Graph proportional relationships, interpreting the unit rate as the slope of the graph.

8.EE.B.5

Use similar triangles to explain why the slope M is the same between any two distinct points on a non-vertical line in the coordinate plane

8.EE.B.6

Analyze and solve pairs of simultaneous linear equations.

8.EE.C.8.b

Understand that a function is a rule that assigns to each input exactly one output.

8.F.A.1

Compare properties of two functions each represented in a different way

8.F.A.2

Interpret the equation y = mx + b as defining a linear function

8.F.A.3

Construct a function to model a linear relationship between two quantities.

8.F.B.4

Describe qualitatively the functional relationship between two quantities by analyzing a graph

8.F.B.5

Verify experimentally the properties of rotations, reflections, and translations **8.G.A.1**

Verify experimentally the properties of rotations, reflections, and translations

8.G.A.1.a

Verify experimentally the properties of rotations, reflections, and translations

8.G.A.1.b

Understand that a twodimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations

8.G.A.2

Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.

8.G.A.3

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Grade 8 (continued)



Use informal arguments to establish facts about the angle sum and exterior angle of triangles

8.G.A.5

Apply the Pythagorean Theorem to Determine unknown side lengths in right triangles in two and three dimensions.

8.G.B.7

Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

8.G.B.8

Know the formulas for the volumes of cones, cylinders, and spheres

8.G.C.9

Know that numbers that are not rational are called irrational.

8.NS.A.1

Use rational approximations of irrational Numbers to compare the size of irrational numbers **8.NS.A.2**

Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities.

8.SP.A.1

Know that straight lines are widely used to model relationships between two quantitative variables.

8.SP.A.2

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Sumdog Assessment Library



Using our assessment library, you can select a pre-made assessment that is matched to the Mathematics Standards from the Common Core State Standards.

We have an assessment for each unit and have mapped them to our progression framework. Our detailed report can easily be exported and printed to save for your tracking and monitoring evidence.

	Kindergarten	5 Assessments
	Grade 1	4 Assessments
	Grade 2	4 Assessments
Grades K-5	Grade 3	5 Assessments
	Grade 4	6 Assessments
	Grade 5	6 Assessments
	Grade 6	8 Assessments
Grades 6-8	Grade 7	6 Assessments
	Grade 8	7 Assessments

REMEMBER:
You can also
create your own
custom assessments
on Sumdog. Selecting
the standards you
want to assess.





Class/Student Name:				Grade:
	SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4
Teacher Notes				
Challenges				
Focus Skills				
Sumdog Assessments				
Sumdog Homework				



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