

# Mathematics program of study: Virginia Standards for Mathematics 

Sumdog Scheme of Learning Kindergarten - Grade 8



## Strands (Kindergarten - Grade 5):

- Computation and Estimation (CE)
- Patterns, Functions and Algebra (PFA)
- Measurement and Geometry (MG)
- Number and Number Sense (NS)


## Grade 1



## Strands (Kindergarten - Grade 5):

- Computation and Estimation (CE) ■ Measurement and Geometry (MG) Probability and Statistics (PS)
- Patterns, Functions and Algebra (PFA)
- Number and Number Sense (NS)



## Strands (Kindergarten - Grade 5):

- Computation and Estimation (CE)
- Patterns, Functions and Algebra (PFA)
- Measurement and Geometry (MG)
- Number and Number Sense (NS)


Strands (Kindergarten - Grade 5):

- Computation and Estimation (CE)

■ Measurement and Geometry (MG)

- Number and Number Sense (NS)

Patterns, Functions and Algebra (PFA)
Pros
varmer alm ivarminer velise ir

## Grade 3



## Strands (Kindergarten - Grade 5):

- Computation and Estimation (CE) - Measurement and Geometry (MG)Probability and Statistics (PS)
- Patterns, Functions and Algebra (PFA)
- Number and Number Sense (NS


| Related Multiplication Questions | Volume |  | Sequences |  | Turns |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CE.3.4.c_11 ■ | MG.3.7.b_1 | $\square$ | MG.3.9.c_2 | $\square$ | NS.3.2.a_3 | $\square$ |
| Unknown Numbers in | Perimeter |  | Forms of Numbers |  | Compare, O |  |
| Multiplication | MG.3.8.a_ 1 | $\square$ | NS.3.1.a_1 | $\square$ | Fractions |  |
| CE.3.4.c_12 ■ | Area |  | Round Numbers |  | NS.3.2.c_1 | $\square$ |
| Multiplication and Division Word | MG.3.8.b_1 | $\square$ | NS.3.1.b_1 | $\square$ | Sequences |  |
| Problems | Telling Time |  | Compare and Order Numbers |  | PFA.3.16_1 | $\square$ |
| CE.3.4.d_1 ■ | MG.3.9.a_1 | ■ | NS.3.1.c_1 | ■ | Skip Count |  |
| Add and Subtract Fractions CE.3.5_1 | Elapsed Time <br> MG.3.9.b_1 | $\square$ | Fractions as Words NS.3.2.a_ 1 | $\square$ | PFA.3.16_2 | $\square$ |
| Polygons <br> MG.3.12.b_1 | Convert Time <br> MG.3.9.c_1 | $\square$ | Fractions Greater than 1 NS.3.2.a_2 | $\square$ |  |  |

Strands (Kindergarten - Grade 5):

- Computation and Estimation (CE) ■ Measurement and Geometry (MG)
- Number and Number Sense (NS)

Patterns, Functions and Algebra (PFA)

Probability and Statistics (PS)

| Division and Times Tables CE.4.4.a_1 | $\square$ | Related Division Equation <br> CE.4.4.a_12 | Multiply with 3-Digit Numbers <br> CE.4.4.b_10 | Add within 1,000,000 <br> CE.4.4.d_1 |
| :---: | :---: | :---: | :---: | :---: |
| Multiply Three Numbers CE.4.4.a_2 | $\square$ | Add within 1,000,000 <br> CE.4.4.b_1 | Multiply with 4-Digit Numbers CE.4.4.b_11 | Column Subtraction CE.4.4.d_2 |
| Multiply with 11, 7 to 12 CE.4.4.a_3 | $\square$ | Arrays <br> CE.4.4.b_2 | Subtract within 10,000 CE.4.4.b_12 | Division and Times Tables CE.4.4.d_3 |
| Multiply with 11, through 6 CE.4.4.a_4 | $\square$ | Column Subtraction CE.4.4.b_3 | Divide 2- or 3-Digit Numbers by 1-Digit Numbers | Model Multiplying with 2-Digit Numbers |
| Multiply with 12, 7 to 12 CE.4.4.a_5 | $\square$ | Estimate Addition and Subtraction CE.4.4.b_4 | $\frac{\text { CE.4.4.c_1 }}{\text { Divide 4-Digit Numbers by 1-Digit }}$ | $\frac{\text { CE.4.4.d_4 }}{\text { Multi-Step Addition or Subtraction }}$ |
| Multiply with 12, through 6 CE.4.4.a_6 | $\square$ | Estimate Multiplication <br> CE.4.4.b_5 | Numbers <br> CE.4.4.c_2 | CE.4.4.d_5 <br> Multiply with 2-Digit Numbers |
| Multiply with 3, 7 to 9 CE.4.4.a_7 | $\square$ | Model Multiplying with 2-Digit Numbers | Divide by Multi-Digit Numbers CE.4.4.c_3 | CE.4.4.d_6 <br> Multiply with 3-Digit Numbers |
| Multiply with 3, through 6 CE.4.4.a_8 | $\square$ | $\frac{\text { CE.4.4.b_6 }}{\text { Multi-Step Addition or Subtraction }}$ | Divide Multi-Digit Numbers <br> CE.4.4.c_4 | $l$ |
| Multiply with 4 CE.4.4.a_9 | $\square$ | $\frac{\text { CE.4.4.b_7 }}{\text { Multiply by Multiples of Powers of }}$ | Division Word Problems CE.4.4.c_5 | $\frac{\text { CE.4.4.d_8 }}{\text { Factors }}$ |
| Multiply with 6, 9, or 7 CE.4.4.a_10 | $\square$ | $\begin{aligned} & 10 \\ & \text { CE.4.4.b_8 } \end{aligned}$ | Estimate Division <br> CE.4.4.c_6 | $\frac{\text { CE.4.5.a_1 }}{\text { Multiply Three Numbers }}$ |
| Multiply with 8 CE.4.4.a_11 | $\square$ | Multiply with 2-Digit Numbers CE.4.4.b_9 | Mental Math: Division CE.4.4.c_7 | CE.4.5.a_2 ■ |

## Strands (Kindergarten - Grade 5):

- Computation and Estimation (CE)

Patterns, Functions and Algebra (PFA)

Measurement and Geometry (MG)
Number and Number Sense (NS)


## Strands (Kindergarten - Grade 5):

- Computation and Estimation (CE)
- Patterns, Functions and Algebra (PFA)

Measurement and Geometry (MG) Number and Number Sense (NS)

| Order Decimals |  | Number Patterns |  | 2 Times table (fluent) | $\square$ | 5 Times table (fluent) | $\square$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NS.4.3.c_2 | $\square$ | PFA.4.15_1 | $\square$ | 3 Times table (fluent) | $\square$ | 10 Times table (fluent) | $\square$ |
| Tenths and Hundredths NS.4.3.d_1 | ■ | Line Graphs PS.4.14.b_1 | $\square$ | 4 Times table (fluent) | $\square$ |  |  |



## Grade 5



```
Strands (Kindergarten - Grade 5):
Computation and Estimation (CE)
Measurement and Geometry (MG)
Number and Number Sense (NS)
Probability and Statistics (PS)
- Patterns, Functions and Algebra (PFA)

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

Numerical expressions involving whole-numbers
6.EE.A. 1

Identify parts of an expression

\section*{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

\section*{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

\section*{6.EE.B. 7}

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

\section*{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

\section*{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.

\section*{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

\section*{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

\section*{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.

\section*{6.NS.C.6.c}

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

\section*{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

Strands (Grade 6-8):
- Expressions \& Equations (EE)

Ratios \& Proportional Relationships (RP)
Statistics \& Probability (SP)
Geometry (G)

Functions (F)

You can focus You can focus on any skill to match your classroom lesson

\section*{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

\section*{6.RP.A.3.C}

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

\section*{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

\section*{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

\section*{Strands (Grade 6-8):}
- Expressions \& Equations (EE)Ratios \& Proportional Relationships (RP)
- Statistics \& Probability (SP)

Geometry (G)
- Functions (F)
- The Number System (NS)
- \(\square\) -

\section*{Apply properties of operations}
7.EE.A. 1

Solve mathematical problems posed with positive and negative rational numbers

\section*{7.EE.B. 3}

Solve word problems leading to equations of the form \(p x+q=r\) and \(p(x+q)=r\)
7.EE.B.4.a

Solve word problems leading to inequalities of the form \(p x+q>r\) or \(p x+q<r\)
7.EE.B.4.b

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

\section*{7.G.A. 3}

Know the formulas for the area and circumference of a circle

\section*{7.G.B. 4}

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

\section*{7.G.B. 5}

Part 1 - Solve real-world and mathematical problems of twoand three-dimensional objects 7.G.B. 6

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

\section*{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

\section*{7.NS.A. 1}

Understand \(\mathrm{p}+\mathrm{q}\) as the number located a distance \(|q|\) from \(p\), in the positive or negative direction depending on whether \(q\) is positive or negative.

\section*{7.NS.A.1.b}

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

\section*{7.NS.A.1.c}

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

\section*{7.NS.A.1.d}

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

\section*{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.

\section*{7.NS.A. 3}

Part 2 - Solve real-world and mathematical problems involving the four operations with rational numbers
7.NS.A. 3

Strands (Grade 6-8):
- Expressions \& Equations (EE)

Ratios \& Proportional Relationships (RP)
- Statistics \& Probability (SP)

Geometry (G)

Functions (F)

You can focus You can focus on any skill to match your classroom lesson

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.

\section*{7.NS.A. 3}

Recognize and represent proportional relationships between quantities.
7.RP.A.2.a

Recognize and represent proportional relationships between quantities.

\section*{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.

\section*{7.RP.A. 3}

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

\section*{7.RP.A. 3}

\section*{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.

\section*{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

\section*{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.

\section*{Strands (Grade 6-8):}

Expressions \& Equations (EE)
- The Number System (NS)

Ratios \& Proportional Relationships (RP)
Geometry (G)

Statistics \& Probability (SP)
- Functions (F)

\section*{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.
\begin{tabular}{|c|c|c|}
\hline \multirow{3}{*}{ Grades K-5 } & Kindergarten & 5 Assessments \\
\cline { 2 - 3 } & Grade 1 & 4 Assessments \\
\cline { 2 - 3 } & Grade 2 & 4 Assessments \\
\cline { 2 - 3 } & Grade 3 & 5 Assessments \\
\cline { 2 - 3 } & Grade 4 & 6 Assessments \\
\hline \multirow{3}{*}{ Grades 6-8 } & Grade 5 & 6 Assessments \\
\cline { 2 - 3 } & Grade 6 & 8 Assessments \\
\cline { 2 - 3 } & Grade 8 & 6 Assessments \\
\hline
\end{tabular}


\section*{Teacher Planning Template}
\begin{tabular}{|c|c|c|c|c|}
\hline \multirow[t]{2}{*}{Class/Student Name:} & & & & Grade: \\
\hline & SEMESTER 1 & SEMESTER 2 & SEMESTER 3 & SEMESTER 4 \\
\hline Teacher Notes & & & & \\
\hline Challenges & & & & \\
\hline Focus Skills & & & & \\
\hline Sumdog Assessments & & & & \\
\hline Sumdog Homework & & & & \\
\hline
\end{tabular}


Have any questions about our scheme of learning? Visit www.sumdog.com to find out more.```

