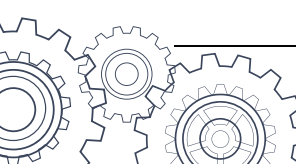
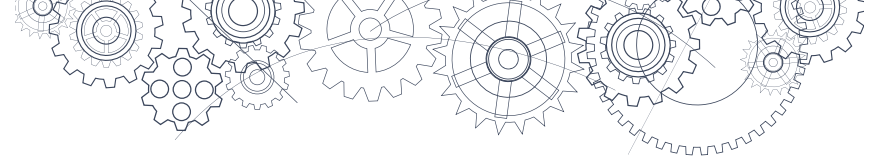


# Math K-9 – Big Ideas

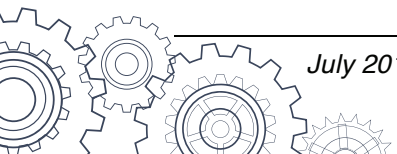
Grade	Number	Computational fluency	Patterning	Geometry and measurement	Data and probability
<b>K</b>	<ul style="list-style-type: none"> <li>Numbers represent quantities that can be decomposed into smaller parts.</li> </ul>	<ul style="list-style-type: none"> <li>One-to-one correspondence and a sense of 5 and 10 are essential for fluency with numbers.</li> </ul>		<ul style="list-style-type: none"> <li>Objects have attributes that can be described, measured, and compared.</li> </ul>	<ul style="list-style-type: none"> <li>Familiar events can be described as likely or unlikely and compared.</li> </ul>
<b>1</b>	<ul style="list-style-type: none"> <li>Numbers to 20 represent quantities that can be decomposed into 10s and 1s.</li> </ul>	<ul style="list-style-type: none"> <li>Addition and subtraction with numbers to 10 can be modelled concretely, pictorially, and symbolically to develop computational fluency.</li> </ul>	<ul style="list-style-type: none"> <li>Repeating elements in patterns can be identified.</li> </ul>	<ul style="list-style-type: none"> <li>Objects and shapes have attributes that can be described, measured, and compared.</li> </ul>	<ul style="list-style-type: none"> <li>Concrete graphs help us to compare and interpret data and show one-to-one correspondence.</li> </ul>
<b>2</b>	<ul style="list-style-type: none"> <li>Numbers to 100 represent quantities that can be decomposed into 10s and 1s.</li> </ul>	<ul style="list-style-type: none"> <li>Development of computational fluency in addition and subtraction with numbers to 100 requires an understanding of place value.</li> </ul>	<ul style="list-style-type: none"> <li>The regular change in increasing patterns can be identified and used to make generalizations.</li> </ul>		<ul style="list-style-type: none"> <li>Concrete items can be represented, compared, and interpreted pictorially in graphs.</li> </ul>
<b>3</b>	<ul style="list-style-type: none"> <li>Fractions are a type of number that can represent quantities.</li> </ul>	<ul style="list-style-type: none"> <li>Development of computational fluency in addition, subtraction, multiplication, and division of whole numbers requires flexible decomposing and composing.</li> </ul>	<ul style="list-style-type: none"> <li>Regular increases and decreases in patterns can be identified and used to make generalizations.</li> </ul>	<ul style="list-style-type: none"> <li>Standard units are used to describe, measure, and compare attributes of objects' shapes.</li> </ul>	<ul style="list-style-type: none"> <li>The likelihood of possible outcomes can be examined, compared, and interpreted.</li> </ul>

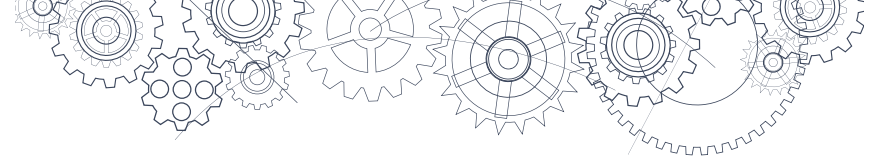




## Math K-9 – Big Ideas – *continued*

Grade	Number	Computational fluency	Patterning	Geometry and measurement	Data and probability
4	<ul style="list-style-type: none"> <li>Fractions and decimals are types of numbers that can represent quantities.</li> </ul>	<ul style="list-style-type: none"> <li>Development of computational fluency and multiplicative thinking requires analysis of patterns and relations in multiplication and division.</li> </ul>	<ul style="list-style-type: none"> <li>Regular changes in patterns can be identified and represented using tools and tables.</li> </ul>	<ul style="list-style-type: none"> <li>Polygons are closed shapes with similar attributes that can be described, measured, and compared.</li> </ul>	<ul style="list-style-type: none"> <li>Analyzing and interpreting experiments in data probability develops an understanding of chance.</li> </ul>
5	<ul style="list-style-type: none"> <li>Numbers describe quantities that can be represented by equivalent fractions.</li> </ul>	<ul style="list-style-type: none"> <li>Computational fluency and flexibility with numbers extend to operations with larger (multi-digit) numbers.</li> </ul>	<ul style="list-style-type: none"> <li>Identified regularities in number patterns can be expressed in tables.</li> </ul>	<ul style="list-style-type: none"> <li>Closed shapes have area and perimeter that can be described, measured, and compared.</li> </ul>	<ul style="list-style-type: none"> <li>Data represented in graphs can be used to show many-to-one correspondence.</li> </ul>
6	<ul style="list-style-type: none"> <li>Mixed numbers and decimal numbers represent quantities that can be decomposed into parts and wholes.</li> </ul>	<ul style="list-style-type: none"> <li>Computational fluency and flexibility with numbers extend to operations with whole numbers and decimals.</li> </ul>	<ul style="list-style-type: none"> <li>Linear relations can be identified and represented using expressions with variables and line graphs and can be used to form generalizations.</li> </ul>	<ul style="list-style-type: none"> <li>Properties of objects and shapes can be described, measured, and compared using volume, area, perimeter, and angles.</li> </ul>	<ul style="list-style-type: none"> <li>Data from the results of an experiment can be used to predict the theoretical probability of an event and to compare and interpret.</li> </ul>
7	<ul style="list-style-type: none"> <li>Decimals, fractions, and percents are used to represent and describe parts and wholes of numbers.</li> </ul>	<ul style="list-style-type: none"> <li>Computational fluency and flexibility with numbers extend to operations with integers and decimals.</li> </ul>	<ul style="list-style-type: none"> <li>Linear relations can be represented in many connected ways to identify regularities and make generalizations.</li> </ul>	<ul style="list-style-type: none"> <li>The constant ratio between the circumference and diameter of circles can be used to describe, measure, and compare spatial relationships.</li> </ul>	<ul style="list-style-type: none"> <li>Data from circle graphs can be used to illustrate proportion and to compare and interpret.</li> </ul>





## Math K-9 – Big Ideas – *continued*

Grade	Number	Computational fluency	Patterning	Geometry and measurement	Data and probability
8	<ul style="list-style-type: none"><li>Number represents, describes, and compares the quantities of ratios, rates, and percents.</li></ul>	<ul style="list-style-type: none"><li>Computational fluency and flexibility extend to operations with fractions.</li></ul>	<ul style="list-style-type: none"><li>Discrete linear relationships can be represented in many connected ways and used to identify and make generalizations.</li></ul>	<ul style="list-style-type: none"><li>The relationship between surface area and volume of 3D objects can be used to describe, measure, and compare spatial relationships.</li></ul>	<ul style="list-style-type: none"><li>Analyzing data by determining averages is one way to make sense of large data sets and enables us to compare and interpret.</li></ul>
9	<ul style="list-style-type: none"><li>The principles and processes underlying operations with numbers apply equally to algebraic situations and can be described and analyzed.</li></ul>	<ul style="list-style-type: none"><li>Computational fluency and flexibility with numbers extend to operations with rational numbers.</li></ul>	<ul style="list-style-type: none"><li>Continuous linear relationships can be identified and represented in many connected ways to identify regularities and make generalizations.</li></ul>	<ul style="list-style-type: none"><li>Similar shapes have proportional relationships that can be described, measured, and compared.</li></ul>	<ul style="list-style-type: none"><li>Analyzing the validity, reliability, and representation of data enables us to compare and interpret.</li></ul>

