Math K-9 – Big Ideas

Grade	Number	Computational fluency	Patterning	Geometry and measurement	Data and probability
K	• Numbers represent quantities that can be decomposed into smaller parts.	• One-to-one correspondence and a sense of 5 and 10 are essential for fluency with numbers.	• Repeating elements in patterns can be identified.	• Objects have attributes that can be described, measured, and compared.	• Familiar events can be described as likely or unlikely and compared.
1	• Numbers to 20 represent quantities that can be decomposed into 10s and 1s.	• Addition and subtraction with numbers to 10 can be modelled concretely, pictorially, and symbolically to develop computational fluency.		• Objects and shapes have attributes that can be described, measured, and compared.	• Concrete graphs help us to compare and interpret data and show one-to-one correspondence.
2	• Numbers to 100 represent quantities that can be decomposed into 10s and 1s.	• Development of computational fluency in addition and subtraction with numbers to 100 requires an understanding of place value.	• The regular change in increasing patterns can be identified and used to make generalizations.		• Concrete items can be represented, compared, and interpreted pictorially in graphs.
3	• Fractions are a type of number that can represent quantities.	• Development of computational fluency in addition, subtraction, multiplication, and division of whole numbers requires flexible decomposing and composing.	• Regular increases and decreases in patterns can be identified and used to make generalizations.	• Standard units are used to describe, measure, and compare attributes of objects' shapes.	• The likelihood of possible outcomes can be examined, compared, and interpreted.

Math K-9 – Big Ideas – *continued*

Grade	Number	Computational fluency	Patterning	Geometry and measurement	Data and probability
4	• Fractions and decimals are types of numbers that can represent quantities.	• Development of computational fluency and multiplicative thinking requires analysis of patterns and relations in multiplication and division.	• Regular changes in patterns can be identified and represented using tools and tables.	• Polygons are closed shapes with similar attributes that can be described, measured, and compared.	• Analyzing and interpreting experiments in data probability develops an understanding of chance.
5	• Numbers describe quantities that can be represented by equivalent fractions.	• Computational fluency and flexibility with numbers extend to operations with larger (multi-digit) numbers.	• Identified regularities in number patterns can be expressed in tables.	• Closed shapes have area and perimeter that can be described, measured, and compared.	• Data represented in graphs can be used to show many-to-one correspondence.
6	• Mixed numbers and decimal numbers represent quantities that can be decomposed into parts and wholes.	• Computational fluency and flexibility with numbers extend to operations with whole numbers and decimals.	• Linear relations can be identified and represented using expressions with variables and line graphs and can be used to form generalizations.	• Properties of objects and shapes can be described, measured, and compared using volume, area, perimeter, and angles.	• Data from the results of an experiment can be used to predict the theoretical probability of an event and to compare and interpret.
7	• Decimals, fractions, and percents are used to represent and describe parts and wholes of numbers.	• Computational fluency and flexibility with numbers extend to operations with integers and decimals.	• Linear relations can be represented in many connected ways to identify regularities and make generalizations.	• The constant ratio between the circumference and diameter of circles can be used to describe, measure, and compare spatial relationships.	• Data from circle graphs can be used to illustrate proportion and to compare and interpret.

Math K-9 – Big Ideas – *continued*

Grade	Number	Computational fluency	Patterning	Geometry and measurement	Data and probability
8	• Number represents, describes, and compares the quantities of ratios, rates, and percents.	• Computational fluency and flexibility extend to operations with fractions.	• Discrete linear relationships can be represented in many connected ways and used to identify and make generalizations.	• The relationship between surface area and volume of 3D objects can be used to describe, measure, and compare spatial relationships.	• Analyzing data by determining averages is one way to make sense of large data sets and enables us to compare and interpret.
9	• The principles and processes underlying operations with numbers apply equally to algebraic situations and can be described and analyzed.	• Computational fluency and flexibility with numbers extend to operations with rational numbers.	• Continuous linear relationships can be identified and represented in many connected ways to identify regularities and make generalizations.	• Similar shapes have proportional relationships that can be described, measured, and compared.	• Analyzing the validity, reliability, and representation of data enables us to compare and interpret.