BC K-5 Mathematics Curriculum

Big Ideas and Elaborations

Kindergarten Big Ideas	**Elaborations** *questions to inspire student inquiry*
Number represents and describes quantity. **Numbers** represent quantities that can be decomposed into smaller parts.	• *How do these materials help us think about numbers and parts of numbers?* • *Which numbers of counters/dots are easy to recognize and why?* • *In how many ways can you decompose ____?* • *What stories live in numbers?* • *How do numbers help us communicate and think about place?* • *How do numbers help us communicate and think about ourselves?*
Computational fluency develops from a strong sense of number. One-to-one correspondence and a sense of 5 and 10 are essential for **fluency** with numbers.	• *If you know that 4 and 6 make 10, how does that help you understand other ways to make 10?* • *How does understanding 5 help us decompose and compose numbers to 10?* • *What parts make up the whole?*
We use patterns to represent identified regularities and to make generalizations. Repeating elements in **patterns** can be identified.	• *What makes a pattern a pattern?* • *How are these patterns alike and different?* • *Do all patterns repeat?*
We can describe, measure, and compare spatial relationships. Objects have **attributes** that can be described, measured, and compared.	• *What do you notice about these shapes?* • *How are these shapes alike and different?*
Analyzing data and chance enables us to compare and interpret. **Familiar events** can be described as likely or unlikely and compared.	• *When might we use words like unlikely and likely?* • *How does data/information help us predict the likeliness of an event (e.g., weather)?* • *What stories can data tell us?*

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Big Ideas and Elaborations

Grade One Big Ideas	**Elaborations** *questions to inspire student inquiry*
Number represents and describes quantity. **Numbers** to 20 represent quantities that can be decomposed into 10s and 1s.	• *How does understanding 5 or 10 help us think about other numbers?* • *What is the relationship between 10s and 1s?* • *Why is it useful to use 10 frames to represent quantities?* • *What stories live in numbers?* • *How do numbers help us communicate and think about place?* • *How do numbers help us communicate and think about ourselves?*
Computational fluency develops from a strong sense of number. Addition and subtraction with numbers to 10 can be modelled concretely, pictorially, and symbolically to develop computational **fluency**.	• *What is the relationship between addition and subtraction?* • *How does knowing that 4 and 6 make 10 help you understand other ways to make 10?* • *How many different ways can you solve…? (e.g., 8 + 5)*
We use patterns to represent identified regularities and to make generalizations. Repeating elements in **patterns** can be identified.	• *How can patterns be used to make predictions?* • *What is the relationship between increasing patterns and addition?* • *What do you notice about this pattern? What is the part that repeats?* • *What number patterns live in a hundred chart?*
We can describe, measure, and compare spatial relationships. Objects and shapes have **attributes** that can be described, measured, and compared.	• *How are these shapes alike and different?* • *What stories live in these shapes?* • *What 2D shapes can you find in nature?*
Analyzing data and chance enables us to compare and interpret. Concrete graphs help us to compare and interpret **data** and show one-to-one correspondence.	• *What stories can data tell us?* • *When might we use words like never, sometimes, always, more likely, and less likely?* • *How does organizing concrete data help us understand the data?*

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Big Ideas and Elaborations

Grade Two Big Ideas	**Elaborations** *questions to inspire student inquiry*
Number represents and describes quantity. **Numbers** to 100 represent quantities that can be decomposed into 10s and 1s.	• *How does understanding 5 or 10 help us think about other numbers?* • *What is the relationship between 10s and 1s?* • *What patterns do you notice in numbers?* • *What stories live in numbers?* • *How do numbers help us communicate and think about place?* • *How do numbers help us communicate and think about ourselves?*
Computational fluency develops from a strong sense of number. Development of computational **fluency** in addition and subtraction with numbers to 100 requires an understanding of place value.	• *What is the relationship between addition and subtraction?* • *How can you use addition to help you subtract?* • *How does understanding 10 help us to add and subtract two-digit numbers?*
We use patterns to represent identified regularities and to make generalizations. The regular change in increasing **patterns** can be identified and used to make generalizations.	• *How can we represent patterns in different ways/modes?* • *How can you create repeating patterns with objects that are all one colour?* • *What stories live in patterns?*
We can describe, measure, and compare spatial relationships. Objects and shapes have **attributes** that can be described, measured, and compared.	• *What 2D shapes live in objects in our world?* • *How can you combine shapes to make new shapes?*
Analyzing data and chance enables us to compare and interpret. Concrete items can be represented, compared, and interpreted pictorially in **graphs**.	• *When you look at this graph, what do you notice? What do you wonder?* • *How do graphs help us understand data?* • *What are some different ways to represent data pictorially?*

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Big Ideas and Elaborations

Grade Three Big Ideas	**Elaborations** *questions to inspire student inquiry*
Number represents and describes quantity. Fractions are a type of **number** that can represent quantities.	• *In how many ways can you represent the fraction ____?* • *What is the relationship between parts and wholes when we think about fractions?* • *How do these materials help you think about fractions?* • *What stories live in numbers?* • *How do numbers help us communicate and think about place?* • *How do numbers help us communicate and think about ourselves?*
Computational fluency develops from a strong sense of number. Development of computational **fluency** in addition, subtraction, multiplication, and division of whole numbers requires flexible decomposing and composing.	• *What is the relationship between addition and multiplication?* • *How can we decompose and compose numbers to help us add, subtract, multiply, and divide?* • *How might we use mental math strategies to solve equations?*
We use patterns to represent identified regularities and to make generalizations. Regular increases and decreases in **patterns** can be identified and used to make generalizations.	• *How are these patterns alike and different (e.g., increasing and decreasing)?* • *How are place value patterns repeated in large numbers?* • *How do numbers help us describe patterns?*
We can describe, measure, and compare spatial relationships. Standard units are used to describe, measure, and compare **attributes** of objects' shapes.	• *Where do 2D shapes live in 3D objects?* • *How do standard units help us to compare and communicate measurements?* • *How do the properties of shapes contribute to buildings and designs?*
Analyzing data and chance enables us to compare and interpret. The likelihood of possible **outcomes** can be examined, compared, and interpreted.	• *How is the probability of an event determined and described?* • *What events in our lives are left to chance?* • *What are the possible outcomes of these events?*

Grade Four Big Ideas	**Elaborations** *questions to inspire student inquiry*
Number represents and describes quantity. Fractions and decimals are types of **numbers** that can represent quantities.	• *What is the relationship between fractions and decimals?* • *How are these fractions (e.g., 1/2 and 7/8) alike and different?* • *How do we use fractions and decimals in our daily life?* • *What stories live in numbers?* • *How do numbers help us communicate and think about place?* • *How do numbers help us communicate and think about ourselves?*
Computational fluency develops from a strong sense of number. Development of computational **fluency** and multiplicative thinking requires analysis of patterns and relations in multiplication and division.	• *What is the relationship between multiplication and division?* • *What patterns in our number system connect to our understanding of multiplication?* • *How does fluency with basic multiplication facts (e.g., 2x, 3x, 5x) help us compute more complex multiplication facts?*
We use patterns to represent identified regularities and to make generalizations. Regular changes in **patterns** can be identified and represented using tools and tables.	• *What regularities can you identify in these patterns?* • *Where do we see patterns in the world around us?* • *How can we represent increasing and decreasing regularities that we see in number patterns?* • *How do tables and charts help us understand number patterns?*
We can describe, measure, and compare spatial relationships. Polygons are closed shapes with similar **attributes** that can be described, measured, and compared.	• *How are these polygons alike and different?* • *How can we measure polygons?* • *How do the properties of shapes contribute to buildings and design?*
Analyzing data and chance enables us to compare and interpret. Analyzing and interpreting experiments in **data** probability develops an understanding of chance.	• *How is the probability of an event determined and described?* • *What events in our lives are left to chance?* • *How do probability experiments help us understand chance?*

Grade Five Big Ideas	**Elaborations** *questions to inspire student inquiry*
Number represents and describes quantity. **Numbers** describe quantities that can be represented by equivalent fractions.	• *How can you prove that two fractions are equivalent?* • *In how many ways can you represent the fraction ___?* • *How do we use fractions and decimals in our daily life?* • *What stories live in numbers?* • *How do numbers help us communicate and think about place?* • *How do numbers help us communicate and think about ourselves?*
Computational fluency develops from a strong sense of number. Computational **fluency** and flexibility with numbers extend to operations with larger (multi-digit) numbers.	• *How many different ways can you solve…? (e.g., 16 x 7)* • *What flexible strategies can we apply to use operations with multi-digit numbers?* • *How does fluency with basic multiplication facts (e.g., 2x, 3x, 5x) help us compute more complex multiplication facts?*
We use patterns to represent identified regularities and to make generalizations. Identified regularities in number **patterns** can be expressed in tables.	• *How do tables and charts help us understand number patterns?* • *How do tables help us see the relationship between a variable within number patterns?* • *How do rules for increasing and decreasing patterns help us solve equations?*
We can describe, measure, and compare spatial relationships. Closed shapes have **area and perimeter** that can be described, measured, and compared.	• *What is the relationship between area and perimeter?* • *What standard units do we use to measure area and perimeter?* • *When might an understanding of area and perimeter be useful?*
Analyzing data and chance enables us to compare and interpret. **Data** represented in graphs can be used to show many-to-one correspondence.	• *How do graphs help us understand data?* • *In what different ways can we represent many-to-one correspondence in a graph?* • *Why would you choose many-to-one correspondence rather than one-to-one correspondence in a graph?*