*Problem solving and reasoning that involve conceptual understandings of mathematics are the foundations of mathematics in Kindergarten classrooms. Rich and relevant mathematical problems involve important mathematical ideas and arise out of real-life situations, and can be approached in a variety of ways so that all children can be involved in exploring solutions. Solving such mathematical problems requires persistence, flexibility in thinking, and multiple perspectives, since there may not be a single, easy-to-find, correct answer. Through mathematics investigations in a wide variety of contexts, children develop their ability to use mathematics as a way of making sense out of their daily experiences. Through these investigations, they also develop increasing confidence along with the knowledge, skills, and attitudes needed to be numerate.*

*The Kindergarten Program (2016)*

This chart is provided to help educators anticipate prior learning emphasized in the Kindergarten Program.

| The Kindergarten Program (2016) | Grade 1 Expectation Cluster: Addition & Subtraction |
|---|---|
| *Also see the <u>Counting and Quantity Expectations</u> from Topic 1.*<br><br>**OE15 demonstrate an understanding of numbers, using concrete materials to explore and investigate counting, quantity, and number relationships**<br>**Addition and Subtractions Concepts in Context**<br>**15.9** compose and decompose quantities to 10 (e.g., make multiple representations of numbers using two or more colours of linking cubes, blocks, dot strips, and other manipulatives; play "shake and spill" games)<br>**15.10** investigate addition and subtraction in everyday experiences and routines through the use of modelling strategies and manipulatives (e.g., join two sets of objects, one containing a greater number than the other, and count all the objects; separate out the smaller number of objects and determine how many remain) and counting strategies (e.g., use a counting sequence to determine how many objects there are altogether; count backward from the largest number to determine how many objects remain)<br><br>🔗 **Make links to:**<br><br>**OE20 apply the mathematical processes to support the development of mathematical thinking, to demonstrate understanding, and to communicate thinking and learning in mathematics, while engaged in play-based learning and in other contexts**<br>**20.1** demonstrate an understanding of number relationships for numbers from 0 to 10, through investigation (e.g., show small quantities using fingers or manipulatives)<br>**20.2** use, read, and represent whole numbers to 10 in a variety of meaningful contexts (e.g., use a hundreds chart to read whole numbers; use magnetic and sandpaper numerals to represent the number of objects in a set; put the house number on a house built in the blocks area; find and recognize numbers in the environment; write numerals on imaginary bills at the restaurant in the dramatic play area) | **B1 demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life (Français)**<br>Students will continue to use the concepts and skills described in expectations B1.1, B1.2, B1.3, B1.4, B1.5 introduced in Topic 1: Representing Numbers.<br><br>**B2 use knowledge of numbers and operations to solve mathematical problems encountered in everyday life (Français)**<br>**B2.1** use the properties of addition and subtraction, and the relationship between addition and subtraction, to solve problems and check calculations<br>**B2.2** recall and demonstrate addition facts for numbers up to 10, and related subtraction facts<br>**B2.3** use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 20, and explain the strategies used<br>**B2.4** use objects, diagrams, and equations to represent, describe, and solve situations involving addition and subtraction of whole numbers that add up to no more than 50<br><br>🔗 **Make links to:**<br>**C2 demonstrate an understanding of variables, expressions, equalities, and inequalities, and apply this understanding in various contexts (Français)**<br>**C2.1** identify quantities that can change and quantities that always remain the same in real-life contexts<br>**C2.2** determine whether given pairs of addition and subtraction expressions are equivalent or not<br>**C2.3** identify and use equivalent relationships for whole numbers up to 50, in various contexts<br><br>**F1 Demonstrate and understanding of the value of Canadian currency (Français)**<br>**F1.1** identify the various Canadian coins up to 50¢ and coins and bills up to $50, and compare their values<br><br>**Related Mathematical Processes:** Problem Solving, Representing, Selecting Tools and Strategies, Reflecting |