**Curriculum Correlation**

**Master 89a**

**Number Cluster 7: Operational Fluency**

Note: Codes to curriculum are for cross-referencing purposes only.

**Ontario**

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| **Curriculum Expectations** | **Mathology Grade 2 Classroom Activity Kit** | **Mathology Little Books** | **Pearson Canada K-3 Mathematics Learning Progression** |
| **Overall Expectation**  **N.1** Quantity Relationships: read, represent, compare, and order whole numbers to 100, and use concrete materials to represent fractions and money amounts  to 100¢  **N3 Operational Sense:** solve problems involving the addition and subtraction of one- and two-digit whole numbers, using a variety of strategies, and investigate multiplication and division  **Cross Strand:** Patterning and Algebra  **P2 Expressions and Equality:** demonstrate an understanding of the concept of equality between pairs of expressions, using concrete materials, symbols, and addition and subtraction to 18 | | | |
| **N1.3** compose and decompose two-digit numbers in a variety of ways, using concrete  materials  **N3.1** solve problems involving the addition and  subtraction of whole numbers to 18, using  a variety of mental strategies  **N3.2** describe relationships between quantities by using whole-number addition and subtraction  **N3.5** solve problems involving the addition and  subtraction of two-digit numbers, with and without regrouping, using concrete materials (e.g., base ten materials, counters), student-generated algorithms, and standard algorithms  **P2.1** demonstrate an understanding of the concept of equality by partitioning whole numbers to 18 in a variety of ways, using concrete materials  **P2.2** represent, through investigation with concrete materials and pictures, two number expressions that are equal, using the equal sign  **P2.4** identify, through investigation, and use the commutative property of addition to facilitate computation with whole numbers | **Below Grade: Intervention**  13: Making 10  14: Finding Doubles  **On Grade: Teacher Cards**  32: Complements of 10 (N3.1, N3.2, P2.2, P2.4)  33: Using Doubles (N3.1)  34: Fluency with 20 (N3.1, N3.2, P2.1)  35: Multi-Digit Fluency (N3.1, N3.2, N3.5)  36: Operational Fluency Consolidation (N3.1, N3.2)  **On Grade: Math Every Day**  **Card 7A:** Doubles and Near-Doubles (N3.1)  I Have… I Need… (N1.3, N3.1, N3.5)  **Card 7B:** Hungry Bird (N3.1, N3.2, N3.5)  Make 10 Sequences (N3.1, N3.5) | **Below Grade:**   * That’s 10!  (Activity 32) * Buy 1─Get 1 (Activities 33, 34, 36) * Canada’s Oldest Sport (Activities 34, 36)   **On Grade:**   * What Would You Rather? (Activity 33) * Array’s Bakery  (Activities 34, 36) * Marbles, Alleys, Mibs, and Guli! (Activity 35) * A Class-full of Projects (Activities 35, 36) * The Money Jar  (Activity 35) * The Great Dogsled Race (Activity 35)   **Above Grade:**   * Planting Seeds  (Activity 33) * Math Makes Me Laugh  (Activities 35, 36) * The Street Party (Activities 35, 36) | **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** |
| **Developing Conceptual Meaning of Addition and Subtraction**  - Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35)  **Developing Fluency of Addition and Subtraction Computation**  - Fluently recalls complements to 10 (e.g., 6 + 4; 7 + 3). (Activity 32)  - Extends known sums and differences to solve other equations (e.g., using 5 + 5 to add 5 + 6). (Activities 33, 34, 36; MED 7A: 1; MED 7B: 2)  - Fluently adds and subtracts with quantities to 20. (Activities 34, 36; MED 7A: 2; MED 7B: 1, 2)  - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers. (Activity 35; MED 7A: 2)  - Estimates sums and differences of multi-digit numbers. (Activity 35) |
| **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** |
| **Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations**  - Decomposes and combines numbers in equations to make them easier to solve (e.g., 8 + 5 = 3 + 5 + 5). (Activities 34, 35, 36)  - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).  (Activity 32; MED 7A: 1) |

**Ontario (continued)**

**Master 89a**

**Curriculum Correlation**

**Number Cluster 7: Operational Fluency**

**Curriculum Correlation**

**Master 89b**

**Number Cluster 7: Operational Fluency**

Note: Codes to curriculum are for cross-referencing purposes only.

**British Columbia/Yukon Territories**

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| **Learning Standards** | **Mathology Grade 2 Classroom Activity Kit** | **Mathology Little Books** | **Pearson Canada K-3 Mathematics Learning Progression** |
| **Big Ideas**  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. | | | |
| **N3 Addition and subtraction facts to 20 (introduction of computational strategies)**   * **N3.1** adding and subtracting numbers to 20 * **N3.2** fluency with math strategies for addition and subtraction   **N4 Addition and subtraction to 100**   * **N4.1** decomposing numbers to 100 * **N4.2** estimating sums and differences to 100 * **N4.3** using strategies such as looking for multiples of 10, friendly numbers, decomposing into 10s and 1s and recomposing, and compensating * **N4.4** adding up to find the difference * **N4.5** using an open number line, hundred chart, ten-frames * **N4.6** using addition and subtraction in real-life contexts and problem-based situations * **N4.7** whole-class number talks   **P2 Change in quantity using pictorial and symbolic representation**   * **P2.1** numerically describing a change in quantity   P3 symbolic representation of equality and inequality | **Below Grade: Intervention**  13: Making 10  14: Finding Doubles  **On Grade: Teacher Cards**  32: Complements of 10 (N3.1, N3.2, P2.1)  33: Using Doubles (N3.1, N3.2, P3.1)  34: Fluency with 20 (N3.1, N3.2, P3.1)  35: Multi-Digit Fluency (N4.2, N4.3, N4.4, N4.5, N4.6)  36: Operational Fluency Consolidation (N3.1, N3.2, N4.2, N4.3, N4.4, N4.5, N4.6)  **On Grade: Math Every Day**  **Card 7A:** Doubles and Near-Doubles (N3.1, N3.2, N4.7)  I Have… I Need… (N3.1, N3.2, N4.1, N4.3, N4.4, N4.5, P2.1)  **Card 7B:** Hungry Bird (N3.1, N3.2, N4.3, N4.4, N4.5, N4.6)  Make 10 Sequences (N3.1, N3.2, N4.3, N4.7) | **Below Grade:**   * That’s 10!  (Activity 32) * Buy 1─Get 1 (Activities 33, 34, 36) * Canada’s Oldest Sport (Activities 34, 36)   **On Grade:**   * What Would You Rather? (Activity 33) * Array’s Bakery  (Activities 34, 36) * Marbles, Alleys, Mibs, and Guli! (Activity 35) * A Class-full of Projects (Activities 35, 36) * The Money Jar  (Activity 35) * The Great Dogsled Race (Activity 35)   **Above Grade:**   * Planting Seeds  (Activity 33) * Math Makes Me Laugh  (Activities 35, 36) * The Street Party (Activities 35, 36) | **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** |
| **Developing Conceptual Meaning of Addition and Subtraction**  - Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35)  **Developing Fluency of Addition and Subtraction Computation**  - Fluently recalls complements to 10 (e.g., 6 + 4; 7 + 3). (Activity 32)  - Extends known sums and differences to solve other equations (e.g., using 5 + 5 to add 5 + 6). (Activities 33, 34, 36; MED 7A: 1; MED 7B: 2)  - Fluently adds and subtracts with quantities to 20. (Activities 34, 36; MED 7A: 2; MED 7B: 1, 2)  - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers. (Activity 35; MED 7A: 2)  - Estimates sums and differences of multi-digit numbers. (Activity 35) |
| **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** |
| **Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations**  - Decomposes and combines numbers in equations to make them easier to solve (e.g., 8 + 5 = 3 + 5 + 5). (Activities 34, 35, 36)  - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).  (Activity 32; MED 7A: 1) |

**Master 89b**

**British Columbia/Yukon Territories (continued)**

**Curriculum Correlation**

**Number Cluster 7: Operational Fluency**

**Curriculum Correlation**

**Master 89c**

**Number Cluster 7: Operational Fluency**

**New Brunswick/Prince Edward Island**

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| **Specific Outcomes** | **Mathology Grade 2 Classroom Activity Kit** | **Mathology Little Books** | **Pearson Canada K-3 Mathematics Learning Progression** |
| **General Outcome**  Develop number sense  **Cross Strand:**  **Patterns and Relations (Variables and Equations):** Represent algebraic expressions in multiple ways. | | | |
| **N8** Demonstrate and explain the effect of adding zero to or subtracting zero from any number.  **N9** Demonstrate an understanding of addition (limited to 1 and 2-digit numerals) with answers to 100 and the corresponding subtraction by:   * **N9a** using personal strategies for adding and subtracting with and without the support of manipulatives * **N9b** creating and solving problems that involve addition and subtraction * **N9c** explaining that the order in which numbers are added does not affect the sum * **N9d** explaining that the order in which numbers are subtracted may affect the difference   **N10** Apply mental mathematics strategies, such as:   * **N10a** using doubles * **N10b** making 10 * **N10c** one more, one less * **N10d** two more, two less * **N10e** building on a known double * **N10f** addition for subtraction   to determine basic addition facts to 18 and related subtraction facts.  **PR4** Record equalities and inequalities symbolically using the equal symbol or the not equal symbol. | **Below Grade: Intervention**  13: Making 10  14: Finding Doubles  **On Grade: Teacher Cards**  32: Complements of 10 (N8, N9c, N10b)  33: Using Doubles (N10a, N10e, PR4)  34: Fluency with 20 (N10a, N10b, N10c, N10d, N10e, N10f, PR4)  35: Multi-Digit Fluency  36: Operational Fluency Consolidation (N10a, N10b, N10c, N10d, N10e, N10f)  **On Grade: Math Every Day**  **Card 7A:** Doubles and Near-Doubles (N10a, N10e)  I Have… I Need… (N9a, N10f)  **Card 7B:** Hungry Bird (N9a, N9b, N10f)  Make 10 Sequences (N10b) | **Below Grade:**   * That’s 10!  (Activity 32) * Buy 1─Get 1 (Activities 33, 34, 36) * Canada’s Oldest Sport (Activities 34, 36)   **On Grade:**   * What Would You Rather? (Activity 33) * Array’s Bakery  (Activities 34, 36) * Marbles, Alleys, Mibs, and Guli! (Activity 35) * A Class-full of Projects (Activities 35, 36) * The Money Jar  (Activity 35) * The Great Dogsled Race (Activity 35)   **Above Grade:**   * Planting Seeds  (Activity 33) * Math Makes Me Laugh  (Activities 35, 36) * The Street Party (Activities 35, 36) | **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** |
| **Developing Conceptual Meaning of Addition and Subtraction**  - Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35)  **Developing Fluency of Addition and Subtraction Computation**  - Fluently recalls complements to 10 (e.g., 6 + 4; 7 + 3). (Activity 32)  - Extends known sums and differences to solve other equations (e.g., using 5 + 5 to add 5 + 6). (Activities 33, 34, 36; MED 7A: 1; MED 7B: 2)  - Fluently adds and subtracts with quantities to 20. (Activities 34, 36; MED 7A: 2; MED 7B: 1, 2)  - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers. (Activity 35; MED 7A: 2)  - Estimates sums and differences of multi-digit numbers. (Activity 35) |
| **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** |
| **Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations**  - Decomposes and combines numbers in equations to make them easier to solve (e.g., 8 + 5 = 3 + 5 + 5). (Activities 34, 35, 36)  - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).  (Activity 32; MED 7A: 1) |

**Master 89c**

**New Brunswick/Prince Edward Island (continued)**

**Curriculum Correlation**

**Number Cluster 7: Operational Fluency**

**Curriculum Correlation**

**Master 89d**

**Number Cluster 7: Operational Fluency**

**Newfoundland and Labrador**

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| **Specific Outcomes** | **Mathology Grade 2 Classroom Activity Kit** | **Mathology Little Books** | **Pearson Canada K-3 Mathematics Learning Progression** |
| **General Outcome**  Develop number sense  **Cross Strand**  **Patterns and Relations (Variables and Equations):** Represent algebraic expressions in multiple ways. | | | |
| **2N8** Demonstrate and explain the effect of adding zero to or subtracting zero from any number.  **2N9** Demonstrate an understanding of addition (limited to 1 and 2-digit numerals) with answers to 100 and the corresponding subtraction by:   * **2N9a** using personal strategies for adding and subtracting with and without the support of manipulatives * **2N9b** creating and solving problems that involve addition and subtraction * **2N9c** explaining that the order in which numbers are added does not affect the sum * **2N9d** explaining that the order in which numbers are subtracted may affect the difference   **N10** Apply mental mathematics strategies for the basic addition and related subtraction facts to 18.  **PR4** Record equalities and inequalities symbolically using the equal symbol or the not equal symbol. | **Below Grade: Intervention**  13: Making 10  14: Finding Doubles  **On Grade: Teacher Cards**  32: Complements of 10 (2N8, 2N9c, 2N10)  33: Using Doubles (2N10, 2PR4)  34: Fluency with 20 (2N10, 2PR4)  35: Multi-Digit Fluency  36: Operational Fluency Consolidation (2N10)  **On Grade: Math Every Day**  **Card 7A:** Doubles and Near-Doubles (2N10)  I Have… I Need… (2N9a, 2N10)  **Card 7B:** Hungry Bird (2N9a, 2N9b, 2N10)  Make 10 Sequences (2N10) | **Below Grade:**   * That’s 10!  (Activity 32) * Buy 1─Get 1 (Activities 33, 34, 36) * Canada’s Oldest Sport (Activities 34, 36)   **On Grade:**   * What Would You Rather? (Activity 33) * Array’s Bakery  (Activities 34, 36) * Marbles, Alleys, Mibs, and Guli! (Activity 35) * A Class-full of Projects (Activities 35, 36) * The Money Jar  (Activity 35) * The Great Dogsled Race (Activity 35)   **Above Grade:**   * Planting Seeds  (Activity 33) * Math Makes Me Laugh  (Activities 35, 36) * The Street Party (Activities 35, 36) | **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** |
| **Developing Conceptual Meaning of Addition and Subtraction**  - Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35)  **Developing Fluency of Addition and Subtraction Computation**  - Fluently recalls complements to 10 (e.g., 6 + 4; 7 + 3). (Activity 32)  - Extends known sums and differences to solve other equations (e.g., using 5 + 5 to add 5 + 6). (Activities 33, 34, 36; MED 7A: 1; MED 7B: 2)  - Fluently adds and subtracts with quantities to 20. (Activities 34, 36; MED 7A: 2; MED 7B: 1, 2)  - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers. (Activity 35; MED 7A: 2)  - Estimates sums and differences of multi-digit numbers. (Activity 35) |
| **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** |
| **Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations**  - Decomposes and combines numbers in equations to make them easier to solve (e.g., 8 + 5 = 3 + 5 + 5). (Activities 34, 35, 36)  - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition). (Activity 32; MED 7A: 1) |

**Newfoundland and Labrador (continued)**

**Master 89d**

**Curriculum Correlation**

**Number Cluster 7: Operational Fluency**

**Curriculum Correlation**

**Master 89e**

**Number Cluster 7: Operational Fluency**

**Manitoba**

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| **Specific Outcomes** | **Mathology Grade 2 Classroom Activity Kit** | **Mathology Little Books** | **Pearson Canada K-3 Mathematics Learning Progression** |
| **General Outcome**  Develop number sense  **Cross Strand**  **Patterns and Relations (Variables and Equations):** Represent algebraic expressions in multiple ways. | | | |
| **2.N.9** Demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by:   * using personal strategies for adding and subtracting with and without the support of manipulatives * creating and solving problems that involve addition and subtraction * explaining that the order in which numbers are added does not affect the sum * explaining that the order in which numbers are subtracted may affect the difference   **2.N.10** Apply mental mathematics strategies, including   * using doubles * making ten * using one more, one less * using two more, two less * building on a known double * using addition for subtraction   to develop recall of basic addition facts to 18 and related subtraction facts | **Below Grade: Intervention**  13: Making 10  14: Finding Doubles  **On Grade: Teacher Cards**  32: Complements of 10 (2.N.10)  33: Using Doubles (2.N.10)  34: Fluency with 20 (2.N.10)  35: Multi-Digit Fluency (2.N.9)  36: Operational Fluency Consolidation (2.N.10)  **On Grade: Math Every Day**  **Card 7A:** Doubles and Near-Doubles (2.N.10)  I Have… I Need… (2.N.10)  **Card 7B:** Hungry Bird (2.N.10)  Make 10 Sequences (2.N.10) | **Below Grade:**   * That’s 10!  (Activity 32) * Buy 1─Get 1 (Activities 33, 34, 36) * Canada’s Oldest Sport (Activities 34, 36)   **On Grade:**   * What Would You Rather? (Activity 33) * Array’s Bakery  (Activities 34, 36) * Marbles, Alleys, Mibs, and Guli! (Activity 35) * A Class-full of Projects (Activities 35, 36) * The Money Jar  (Activity 35) * The Great Dogsled Race (Activity 35)   **Above Grade:**   * Planting Seeds  (Activity 33) * Math Makes Me Laugh  (Activities 35, 36) * The Street Party (Activities 35, 36) | **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** |
| **Developing Conceptual Meaning of Addition and Subtraction**  - Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35)  **Developing Fluency of Addition and Subtraction Computation**  - Fluently recalls complements to 10 (e.g., 6 + 4; 7 + 3). (Activity 32)  - Extends known sums and differences to solve other equations (e.g., using 5 + 5 to add 5 + 6). (Activities 33, 34, 36; MED 7A: 1; MED 7B: 2)  - Fluently adds and subtracts with quantities to 20. (Activities 34, 36; MED 7A: 2; MED 7B: 1, 2)  - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers. (Activity 35; MED 7A: 2)  - Estimates sums and differences of multi-digit numbers. (Activity 35) |
| **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** |
| **Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations**  - Decomposes and combines numbers in equations to make them easier to solve (e.g., 8 + 5 = 3 + 5 + 5). (Activities 34, 35, 36)  - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).  (Activity 32; MED 7A: 1) |

**Master 89e**

**Curriculum Correlation**

**Number Cluster 7: Operational Fluency**

**Manitoba (continued)**

**Manitoba (continued)**

**Master 83j**

**Curriculum Correlation**

**Master 89f**

**Number Cluster 7: Operational Fluency**

**Nova Scotia**

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| **Specific Outcomes** | **Mathology Grade 2 Classroom Activity Kit** | **Mathology Little Books** | **Pearson Canada K-3 Mathematics Learning Progression** |
| **General Outcome**  Students will be expected to demonstrate number sense.  **Cross Strand**  **Patterns and Relations (Variables and Equations):** Students will be expected to represent algebraic expressions in multiple ways. | | | |
| **N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.  **N09** Students will be expected to demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by   * **N09a** using personal strategies for adding and subtracting with and without the support of manipulatives * **N09b** creating and solving problems that involve addition and subtraction * **N09c** explaining that the order in which numbers are added does not affect the sum * **N09d** explaining and demonstrating that the order in which numbers are subtracted matters when finding a difference   **N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.  **PR04** Students will be expected to record equalities and inequalities symbolically, using the equal symbol or not equal symbol. | **Below Grade: Intervention**  13: Making 10  14: Finding Doubles  **On Grade: Teacher Cards**  32: Complements of 10 (N08, N09c, N10)  33: Using Doubles (N10, PR04)  34: Fluency with 20 (N10, PR04)  35: Multi-Digit Fluency  36: Operational Fluency Consolidation (N10)  **On Grade: Math Every Day**  **Card 7A:** Doubles and Near-Doubles (N10)  I Have… I Need… (N09a, N10)  **Card 7B:** Hungry Bird (N09a, N09b, N10)  Make 10 Sequences (N10) | **Below Grade:**   * That’s 10!  (Activity 32) * Buy 1─Get 1 (Activities 33, 34, 36) * Canada’s Oldest Sport (Activities 34, 36)   **On Grade:**   * What Would You Rather? (Activity 33) * Array’s Bakery  (Activities 34, 36) * Marbles, Alleys, Mibs, and Guli! (Activity 35) * A Class-full of Projects (Activities 35, 36) * The Money Jar  (Activity 35) * The Great Dogsled Race (Activity 35)   **Above Grade:**   * Planting Seeds  (Activity 33) * Math Makes Me Laugh  (Activities 35, 36) * The Street Party (Activities 35, 36) | **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** |
| **Developing Conceptual Meaning of Addition and Subtraction**  - Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35)  **Developing Fluency of Addition and Subtraction Computation**  - Fluently recalls complements to 10 (e.g., 6 + 4; 7 + 3). (Activity 32)  - Extends known sums and differences to solve other equations (e.g., using 5 + 5 to add 5 + 6). (Activities 33, 34, 36; MED 7A: 1; MED 7B: 2)  - Fluently adds and subtracts with quantities to 20. (Activities 34, 36; MED 7A: 2; MED 7B: 1, 2)  - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers. (Activity 35; MED 7A: 2)  - Estimates sums and differences of multi-digit numbers. (Activity 35) |
| **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** |
| **Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations**  - Decomposes and combines numbers in equations to make them easier to solve (e.g., 8 + 5 = 3 + 5 + 5). (Activities 34, 35, 36)  - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).  (Activity 32; MED 7A: 1) |

**Master 89f**

**Curriculum Correlation**

**Number Cluster 7: Operational Fluency**

**Nova Scotia (continued)**

**Master 83l**

**Curriculum Correlation**

**Master 89g**

**Number Cluster 7: Operational Fluency**

**Alberta/Northwest Territories/Nunavut**

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| **Learning Outcomes** | **Mathology Grade 2 Classroom Activity Kit** | **Mathology Little Books** | **Pearson Canada K-3 Mathematics Learning Progression** |
| **General Outcome**  Develop number sense  **Cross Strand**  **Patterns and Relations (Variables and Equations):** Represent algebraic expressions in multiple ways. | | | |
| **Number**  **8.** Demonstrate and explain the effect of adding zero to or subtracting zero from any number.  **9.** Demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by:   * **9a.** using personal strategies for adding and subtracting with and without the support of manipulatives * **9b.** creating and solving problems that involve addition and subtraction * **9c.** using the commutative property of addition (the order in which numbers are added does not affect the sum) * **9d.** using the associative property of addition (grouping a set of numbers in different ways does not affect the sum) * **9e.** explaining that the order in which numbers are subtracted may affect the difference   **10.** Apply mental mathematics strategies for basic addition facts and related subtraction facts to 18.  **Patterns and Relations**  **5** Students will be expected to record equalities and inequalities symbolically, using the equal symbol or not equal symbol. | **Below Grade: Intervention**  13: Making 10  14: Finding Doubles  **On Grade: Teacher Cards**  32: Complements of 10 (N8, N9c, N10)  33: Using Doubles (N10, PR5)  34: Fluency with 20 (N10, PR5)  35: Multi-Digit Fluency  36: Operational Fluency Consolidation (N10)  **On Grade: Math Every Day**  **Card 7A:** Doubles and Near-Doubles (N10)  I Have… I Need… (N9a, N10)  **Card 7B:** Hungry Bird (N9a, N9b, N10)  Make 10 Sequences (N10) | **Below Grade:**   * That’s 10!  (Activity 32) * Buy 1─Get 1 (Activities 33, 34, 36) * Canada’s Oldest Sport (Activities 34, 36)   **On Grade:**   * What Would You Rather? (Activity 33) * Array’s Bakery  (Activities 34, 36) * Marbles, Alleys, Mibs, and Guli! (Activity 35) * A Class-full of Projects (Activities 35, 36) * The Money Jar  (Activity 35) * The Great Dogsled Race (Activity 35)   **Above Grade:**   * Planting Seeds  (Activity 33) * Math Makes Me Laugh  (Activities 35, 36) * The Street Party (Activities 35, 36) | **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** |
| **Developing Conceptual Meaning of Addition and Subtraction**  - Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35)  **Developing Fluency of Addition and Subtraction Computation**  - Fluently recalls complements to 10 (e.g., 6 + 4; 7 + 3). (Activity 32)  - Extends known sums and differences to solve other equations (e.g., using 5 + 5 to add 5 + 6). (Activities 33, 34, 36; MED 7A: 1; MED 7B: 2)  - Fluently adds and subtracts with quantities to 20. (Activities 34, 36; MED 7A: 2; MED 7B: 1, 2)  - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers. (Activity 35; MED 7A: 2)  - Estimates sums and differences of multi-digit numbers. (Activity 35) |
| **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** |
| **Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations**  - Decomposes and combines numbers in equations to make them easier to solve (e.g., 8 + 5 = 3 + 5 + 5). (Activities 34, 35, 36)  - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).  (Activity 32; MED 7A: 1) |

**Master 89g**

**Alberta/Northwest Territories/Nunavut (continued)**

**Curriculum Correlation**

**Number Cluster 7: Operational Fluency**

**Curriculum Correlation**

**Master 89h**

**Number Cluster 7: Operational Fluency**

**Saskatchewan**

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| **Specific Outcomes** | **Mathology Grade 2 Classroom Activity Kit** | **Mathology Little Books** | **Pearson Canada K-3 Mathematics Learning Progression** |
| **Goals**  Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour  **Cross Strand:** Patterns and Relations | | | |
| **N2.2** Demonstrate understanding of addition (limited to 1 and 2-digit numerals) with answers to 100 and the corresponding subtraction by:   * N2.2a representing strategies for adding and subtracting concretely, pictorially, and symbolically * N2.2b creating and solving problems involving addition and subtraction * N2.2c estimating * N2.2d using personal strategies for adding and subtracting with and without the support of manipulatives * N2.2e analyzing the effect of adding or subtracting zero * N2.2f analyzing the effect of the ordering of the quantities (addends, minuends, and subtrahends) in addition and subtraction statements**.**   **Patterns and Relations**  **P2.3** Demonstrate understanding of equality and inequality concretely and pictorially (0 to 100) by:   * P2.3c recording equalities with an equal sign | **Below Grade: Intervention**  13: Making 10  14: Finding Doubles  **On Grade: Teacher Cards**  32: Complements of 10 (N2.2a, N2.2e, N2.2f)  33: Using Doubles (N2.2a, P2.3c)  34: Fluency with 20 (N2.2a, P2.3c)  35: Multi-Digit Fluency  36: Operational Fluency Consolidation (N2.2a)  **On Grade: Math Every Day**  **Card 7A:** Doubles and Near-Doubles (N2.2a)  I Have… I Need… (N2.2a, N2.2d)  **Card 7B:** Hungry Bird (N2.2a, N2.2b, N2.2d)  Make 10 Sequences (N2.2a) | **Below Grade:**   * That’s 10!  (Activity 32) * Buy 1─Get 1 (Activities 33, 34, 36) * Canada’s Oldest Sport (Activities 34, 36)   **On Grade:**   * What Would You Rather? (Activity 33) * Array’s Bakery  (Activities 34, 36) * Marbles, Alleys, Mibs, and Guli! (Activity 35) * A Class-full of Projects (Activities 35, 36) * The Money Jar  (Activity 35) * The Great Dogsled Race (Activity 35)   **Above Grade:**   * Planting Seeds  (Activity 33) * Math Makes Me Laugh  (Activities 35, 36) * The Street Party (Activities 35, 36) | **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** |
| **Developing Conceptual Meaning of Addition and Subtraction**  - Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35)  **Developing Fluency of Addition and Subtraction Computation**  - Fluently recalls complements to 10 (e.g., 6 + 4; 7 + 3). (Activity 32)  - Extends known sums and differences to solve other equations (e.g., using 5 + 5 to add 5 + 6). (Activities 33, 34, 36; MED 7A: 1; MED 7B: 2)  - Fluently adds and subtracts with quantities to 20. (Activities 34, 36; MED 7A: 2; MED 7B: 1, 2)  - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers. (Activity 35; MED 7A: 2)  - Estimates sums and differences of multi-digit numbers. (Activity 35) |
| **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** |
| **Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations**  - Decomposes and combines numbers in equations to make them easier to solve (e.g., 8 + 5 = 3 + 5 + 5). (Activities 34, 35, 36)  - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).  (Activity 32; MED 7A: 1) |

**Master 89h**

**Saskatchewan (continued)**

**Curriculum Correlation**

**Number Cluster 7: Operational Fluency**

**Master 83h**

**Master 83p**