

Curriculum Correlation

Number Cluster 7: Operational Fluency

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

Ontario

Curriculum Expectations	Mathology Grade 2 Classroom Activity Kit	Mathology Little Books	Pearson Canada K-3 Mathematics Learning Progression
<p>Overall Expectation</p> <p>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¢</p> <p>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</p> <p>Cross Strand: Patterning and Algebra</p> <p>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</p>	<p>Below Grade: Intervention</p> <p>13: Making 10</p> <p>14: Finding Doubles</p> <p>On Grade: Teacher Cards</p> <p>32: Complements of 10 (N3.1, N3.2, P2.2, P2.4)</p> <p>33: Using Doubles (N3.1)</p> <p>34: Fluency with 20 (N3.1, N3.2, P2.1)</p> <p>35: Multi-Digit Fluency (N3.1, N3.2, N3.5)</p> <p>36: Operational Fluency Consolidation (N3.1, N3.2)</p> <p>On Grade: Math Every Day Card 7A:</p> <p>Doubles and Near-Doubles (N3.1)</p> <p>I Have... I Need... (N1.3, N3.1, N3.5)</p>	<p>Below Grade:</p> <ul style="list-style-type: none"> • That's 10! (Activity 32) • Buy 1—Get 1 (Activities 33, 34, 36) • Canada's Oldest Sport (Activities 34, 36) <p>On Grade:</p> <ul style="list-style-type: none"> • What Would You Rather? (Activity 33) • Array's Bakery (Activities 34, 36) • Marbles, Alleys, Mibs, and Gull! (Activity 35) • A Class-full of Projects (Activities 35, 36) • The Money Jar (Activity 35) • The Great Dogsled Race (Activity 35) 	<p>Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.</p> <p>Developing Conceptual Meaning of Addition and Subtraction</p> <ul style="list-style-type: none"> - Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35) <p>Developing Fluency of Addition and Subtraction Computation</p> <ul style="list-style-type: none"> - 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)

Curriculum Correlation

Number Cluster 7: Operational Fluency

Ontario (continued)

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

Card 7B:

Hungry Bird (N3.1, N3.2, N3.5)
Make 10 Sequences (N3.1, N3.5)

Above Grade:

- Planting Seeds (Activity 33)
- Math Makes Me Laugh (Activities 35, 36)
- The Street Party (Activities 35, 36)

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)

Curriculum Correlation

Number Cluster 7: Operational Fluency

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

British Columbia/Yukon Territories

Learning Standards	Mathology Grade 2 Classroom Activity Kit	Mathology Little Books	Pearson Canada K-3 Mathematics Learning Progression
<p>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.</p> <p>N3 Addition and subtraction facts to 20 (introduction of computational strategies)</p> <ul style="list-style-type: none"> N3.1 adding and subtracting numbers to 20 N3.2 fluency with math strategies for addition and subtraction <p>N4 Addition and subtraction to 100</p> <ul style="list-style-type: none"> 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 	<p>Below Grade: Intervention 13: Making 10 14: Finding Doubles</p> <p>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)</p> <p>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)</p> <p>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)</p>	<p>Below Grade:</p> <ul style="list-style-type: none"> That's 10! (Activity 32) Buy 1—Get 1 (Activities 33, 34, 36) Canada's Oldest Sport (Activities 34, 36) <p>On Grade:</p> <ul style="list-style-type: none"> What Would You Rather? (Activity 33) Array's Bakery (Activities 34, 36) Marbles, Alleys, Mibs, and Gull! (Activity 35) A Class-full of Projects (Activities 35, 36) The Money Jar (Activity 35) The Great Dogsled Race (Activity 35) <p>Above Grade:</p> <ul style="list-style-type: none"> Planting Seeds (Activity 33) Math Makes Me Laugh (Activities 35, 36) The Street Party (Activities 35, 36) 	<p>Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.</p> <p>Developing Conceptual Meaning of Addition and Subtraction</p> <ul style="list-style-type: none"> Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35) <p>Developing Fluency of Addition and Subtraction Computation</p> <ul style="list-style-type: none"> 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) <p>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</p> <p>Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations</p> <ul style="list-style-type: none"> Decomposes and combines numbers in equations to make them easier to solve (e.g., 8 + 5 = 3 + 5 + 5). (Activities 34, 35, 36)

Curriculum Correlation

Number Cluster 7: Operational Fluency

British Columbia/Yukon Territories (continued)

<ul style="list-style-type: none"> • 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 <p>P2 Change in quantity using pictorial and symbolic representation</p> <ul style="list-style-type: none"> • P2.1 numerically describing a change in quantity <p>P3 symbolic representation of equality and inequality</p>		<p>- Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition). (Activity 32; MED 7A: 1)</p>
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Curriculum Correlation

Number Cluster 7: Operational Fluency

New Brunswick/Prince Edward Island

Specific Outcomes	Mathology Grade 2 Classroom Activity Kit	Mathology Little Books	Pearson Canada K-3 Mathematics Learning Progression
<p>General Outcome Develop number sense</p> <p>Cross Strand: Patterns and Relations (Variables and Equations): Represent algebraic expressions in multiple ways.</p> <p>N8 Demonstrate and explain the effect of adding zero to or subtracting zero from any number.</p> <p>N9 Demonstrate an understanding of addition (limited to 1 and 2-digit numerals) with answers to 100 and the corresponding subtraction by:</p> <ul style="list-style-type: none"> 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 	<p>Below Grade: Intervention 13: Making 10 14: Finding Doubles</p> <p>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)</p> <p>On Grade: Math Every Day Card 7A: Doubles and Near-Doubles (N10a, N10e) I Have... I Need... (N9a, N10f)</p> <p>Card 7B: Hungry Bird (N9a, N9b, N10f) Make 10 Sequences (N10b)</p>	<p>Below Grade:</p> <ul style="list-style-type: none"> That's 10! (Activity 32) Buy 1—Get 1 (Activities 33, 34, 36) Canada's Oldest Sport (Activities 34, 36) <p>On Grade:</p> <ul style="list-style-type: none"> 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 Dogsdog Race (Activity 35) <p>Above Grade:</p> <ul style="list-style-type: none"> Planting Seeds (Activity 33) Math Makes Me Laugh (Activities 35, 36) The Street Party (Activities 35, 36) 	<p>Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.</p> <p>Developing Conceptual Meaning of Addition and Subtraction</p> <ul style="list-style-type: none"> Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35) <p>Developing Fluency of Addition and Subtraction Computation</p> <ul style="list-style-type: none"> 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) <p>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</p> <p>Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations</p> <ul style="list-style-type: none"> 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)

Curriculum Correlation

Number Cluster 7: Operational Fluency

New Brunswick/Prince Edward Island (continued)

<ul style="list-style-type: none"> • N9d explaining that the order in which numbers are subtracted may affect the difference <p>N10 Apply mental mathematics strategies, such as:</p> <ul style="list-style-type: none"> • 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. <p>PR4 Record equalities and inequalities symbolically using the equal symbol or the not equal symbol.</p>			
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Curriculum Correlation

Number Cluster 7: Operational Fluency

Newfoundland and Labrador

Specific Outcomes	Mathology Grade 2 Classroom Activity Kit	Mathology Little Books	Pearson Canada K-3 Mathematics Learning Progression
<p>General Outcome Develop number sense</p> <p>Cross Strand Patterns and Relations (Variables and Equations): Represent algebraic expressions in multiple ways.</p> <p>2N8 Demonstrate and explain the effect of adding zero to or subtracting zero from any number.</p> <p>2N9 Demonstrate an understanding of addition (limited to 1 and 2-digit numerals) with answers to 100 and the corresponding subtraction by:</p> <ul style="list-style-type: none"> 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 	<p>Below Grade: Intervention 13: Making 10 14: Finding Doubles</p> <p>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)</p> <p>On Grade: Math Every Day Card 7A: Doubles and Near-Doubles (2N10) I Have... I Need... (2N9a, 2N10)</p> <p>Card 7B: Hungry Bird (2N9a, 2N9b, 2N10) Make 10 Sequences (2N10)</p>	<p>Below Grade:</p> <ul style="list-style-type: none"> That's 10! (Activity 32) Buy 1—Get 1 (Activities 33, 34, 36) Canada's Oldest Sport (Activities 34, 36) <p>On Grade:</p> <ul style="list-style-type: none"> What Would You Rather? (Activity 33) Array's Bakery (Activities 34, 36) Marbles, Alleys, Mibs, and Gull! (Activity 35) A Class-full of Projects (Activities 35, 36) The Money Jar (Activity 35) The Great Dogsgled Race (Activity 35) <p>Above Grade:</p> <ul style="list-style-type: none"> Planting Seeds (Activity 33) Math Makes Me Laugh (Activities 35, 36) The Street Party (Activities 35, 36) 	<p>Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.</p> <p>Developing Conceptual Meaning of Addition and Subtraction</p> <ul style="list-style-type: none"> Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35) <p>Developing Fluency of Addition and Subtraction Computation</p> <ul style="list-style-type: none"> 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) <p>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</p> <p>Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations</p> <ul style="list-style-type: none"> Decomposes and combines numbers in equations to make them easier to solve (e.g., $8 + 5 = 3 + 5 + 5$). (Activities 34, 35, 36)

Curriculum Correlation

Number Cluster 7: Operational Fluency

Newfoundland and Labrador (continued)

<p>N10 Apply mental mathematics strategies for the basic addition and related subtraction facts to 18.</p> <p>PR4 Record equalities and inequalities symbolically using the equal symbol or the not equal symbol.</p>			<p>- Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition). (Activity 32; MED 7A: 1)</p>
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Curriculum Correlation

Number Cluster 7: Operational Fluency

Manitoba

Specific Outcomes	Mathology Grade 2 Classroom Activity Kit	Mathology Little Books	Pearson Canada K-3 Mathematics Learning Progression
<p>General Outcome Develop number sense</p> <p>Cross Strand Patterns and Relations (Variables and Equations): Represent algebraic expressions in multiple ways.</p> <p>2.N.9 Demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by:</p> <ul style="list-style-type: none"> 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 	<p>Below Grade: Intervention 13: Making 10 14: Finding Doubles</p> <p>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)</p> <p>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)</p>	<p>Below Grade:</p> <ul style="list-style-type: none"> That's 10! (Activity 32) Buy 1—Get 1 (Activities 33, 34, 36) Canada's Oldest Sport (Activities 34, 36) <p>On Grade:</p> <ul style="list-style-type: none"> What Would You Rather? (Activity 33) Array's Bakery (Activities 34, 36) Marbles, Alleys, Mibs, and Guit! (Activity 35) A Class-full of Projects (Activities 35, 36) The Money Jar (Activity 35) The Great Dogsled Race (Activity 35) <p>Above Grade:</p> <ul style="list-style-type: none"> Planting Seeds (Activity 33) Math Makes Me Laugh (Activities 35, 36) The Street Party (Activities 35, 36) 	<p>Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.</p> <p>Developing Conceptual Meaning of Addition and Subtraction</p> <ul style="list-style-type: none"> Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35) <p>Developing Fluency of Addition and Subtraction Computation</p> <ul style="list-style-type: none"> 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) <p>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</p> <p>Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations</p> <ul style="list-style-type: none"> Decomposes and combines numbers in equations to make them easier to solve (e.g., $8 + 5 = 3 + 5 + 5$). (Activities 34, 35, 36)

Mathology 2

Curriculum Correlation

Number Cluster 7: Operational Fluency

Manitoba (continued)

- 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

- Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).
(Activity 32; MED 7A: 1)

Curriculum Correlation

Number Cluster 7: Operational Fluency

Nova Scotia

Specific Outcomes	Mathology Grade 2 Classroom Activity Kit	Mathology Little Books	Pearson Canada K-3 Mathematics Learning Progression
<p>General Outcome Students will be expected to demonstrate number sense.</p> <p>Cross Strand Patterns and Relations (Variables and Equations): Students will be expected to represent algebraic expressions in multiple ways.</p>			
<p>N08 Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.</p> <p>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</p> <ul style="list-style-type: none"> 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 	<p>Below Grade:</p> <ul style="list-style-type: none"> That's 10! (Activity 32) Buy 1—Get 1 (Activities 33, 34, 36) Canada's Oldest Sport (Activities 34, 36) <p>On Grade: Teacher Cards</p> <p>32: Complements of 10 (N08, N09c, N10)</p> <p>33: Using Doubles (N10, PR04)</p> <p>34: Fluency with 20 (N10, PR04)</p> <p>35: Multi-Digit Fluency</p> <p>36: Operational Fluency Consolidation (N10)</p> <p>On Grade: Math Every Day Card 7A: Doubles and Near-Doubles (N10) I Have... I Need... (N09a, N10)</p> <p>Card 7B: Hungry Bird (N09a, N09b, N10) Make 10 Sequences (N10)</p>	<p>Below Grade:</p> <ul style="list-style-type: none"> 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) <p>Above Grade:</p> <ul style="list-style-type: none"> Planting Seeds (Activity 33) Math Makes Me Laugh (Activities 35, 36) The Street Party (Activities 35, 36) 	<p>Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.</p> <p>Developing Conceptual Meaning of Addition and Subtraction</p> <ul style="list-style-type: none"> Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35) <p>Developing Fluency of Addition and Subtraction Computation</p> <ul style="list-style-type: none"> 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) <p>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</p> <p>Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations</p> <ul style="list-style-type: none"> Decomposes and combines numbers in equations to make them easier to solve (e.g., $8 + 5 = 3 + 5 + 5$). (Activities 34, 35, 36)

Curriculum Correlation

Number Cluster 7: Operational Fluency

Nova Scotia (continued)

<p>when finding a difference</p> <p>N10 Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.</p> <p>PR04 Students will be expected to record equalities and inequalities symbolically, using the equal symbol or not equal symbol.</p>			<p>- Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition). (Activity 32; MED 7A: 1)</p>
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Curriculum Correlation

Number Cluster 7: Operational Fluency

Alberta/Northwest Territories/Nunavut

Learning Outcomes	Mathology Grade 2 Classroom Activity Kit	Mathology Little Books	Pearson Canada K-3 Mathematics Learning Progression
<p>General Outcome Develop number sense</p> <p>Cross Strand Patterns and Relations (Variables and Equations): Represent algebraic expressions in multiple ways.</p> <p>Number</p> <p>8. Demonstrate and explain the effect of adding zero to or subtracting zero from any number.</p> <p>9. Demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by:</p> <ul style="list-style-type: none"> 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 	<p>Below Grade: Intervention</p> <p>13: Making 10</p> <p>14: Finding Doubles</p> <p>On Grade: Teacher Cards</p> <p>32: Complements of 10 (N8, N9c, N10)</p> <p>33: Using Doubles (N10, PR5)</p> <p>34: Fluency with 20 (N10, PR5)</p> <p>35: Multi-Digit Fluency</p> <p>36: Operational Fluency Consolidation (N10)</p> <p>On Grade: Math Every Day Card 7A: Doubles and Near-Doubles (N10) I Have... I Need... (N9a, N10)</p> <p>Card 7B: Hungry Bird (N9a, N9b, N10) Make 10 Sequences (N10)</p>	<p>Below Grade:</p> <ul style="list-style-type: none"> That's 10! (Activity 32) Buy 1—Get 1 (Activities 33, 34, 36) Canada's Oldest Sport (Activities 34, 36) <p>On Grade:</p> <ul style="list-style-type: none"> 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 Dogsdog Race (Activity 35) <p>Above Grade:</p> <ul style="list-style-type: none"> Planting Seeds (Activity 33) Math Makes Me Laugh (Activities 35, 36) The Street Party (Activities 35, 36) 	<p>Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.</p> <p>Developing Conceptual Meaning of Addition and Subtraction</p> <ul style="list-style-type: none"> Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35) <p>Developing Fluency of Addition and Subtraction Computation</p> <ul style="list-style-type: none"> 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) <p>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</p> <p>Understanding Equality and Inequality, Building on Generalized Properties of Numbers and Operations</p> <ul style="list-style-type: none"> Decomposes and combines numbers in equations to make them easier to solve (e.g., $8 + 5 = 3 + 5 + 5$). (Activities 34, 35, 36)

Curriculum Correlation

Number Cluster 7: Operational Fluency

Alberta/Northwest Territories/Nunavut (continued)

- 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.

- Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).
(Activity 32; MED 7A: 1)

Curriculum Correlation

Number Cluster 7: Operational Fluency

Saskatchewan

Specific Outcomes	Mathology Grade 2 Classroom Activity Kit	Mathology Little Books	Pearson Canada K-3 Mathematics Learning Progression
<p>Goals Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour Cross Strand: Patterns and Relations</p> <p>N2.2 Demonstrate understanding of addition (limited to 1 and 2-digit numerals) with answers to 100 and the corresponding subtraction by:</p> <ul style="list-style-type: none"> 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. 	<p>Below Grade: Intervention 13: Making 10 14: Finding Doubles</p> <p>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)</p> <p>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)</p>	<p>Below Grade:</p> <ul style="list-style-type: none"> That's 10! (Activity 32) Buy 1—Get 1 (Activities 33, 34, 36) Canada's Oldest Sport (Activities 34, 36) <p>On Grade:</p> <ul style="list-style-type: none"> What Would You Rather? (Activity 33) Array's Bakery (Activities 34, 36) Marbles, Alleys, Mibs, and Gull! (Activity 35) A Class-full of Projects (Activities 35, 36) The Money Jar (Activity 35) The Great Dogstled Race (Activity 35) <p>Above Grade:</p> <ul style="list-style-type: none"> Planting Seeds (Activity 33) Math Makes Me Laugh (Activities 35, 36) The Street Party (Activities 35, 36) 	<p>Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.</p> <p>Developing Conceptual Meaning of Addition and Subtraction - Uses symbols and equations to represent addition and subtraction situations. (Activities 33, 34, 35)</p> <p>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)</p> <p>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</p> <p>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)</p>

Curriculum Correlation

Number Cluster 7: Operational Fluency

Saskatchewan (continued)

<p>Patterns and Relations P2.3 Demonstrate understanding of equality and inequality concretely and pictorially (0 to 100) by:</p> <ul style="list-style-type: none"> • P2.3c recording equalities with an equal sign 			<p>- Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition). (Activity 32; MED 7A: 1)</p>
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