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Introduction to Quizzes and Tests

We provide a quiz for, on average, every four lessons and a test covering the material of two to three quizzes, with one or two tests per unit. Students should need no more than 10 minutes to complete a quiz and no more than 45 minutes to complete a test.

Quizzes cover material both from lessons that are required to cover the curriculum and lessons labelled as recommended, while tests only cover material from lessons that are required to cover the curriculum.

Quizzes can be used as confidence builders and as formative assessment tools. A quiz should be administered after the last lesson that it covers has been taught. Tests are intended to be used as summative assessment tools. We recommend allowing students time to receive and internalize the feedback from all relevant quizzes before administering the test. The introduction to each unit in the Teacher Resource identifies which lessons are covered by each quiz and test.
Unit 8: Patterns and Algebra

Quiz (Lessons 8–12) — ON

1. Calculate the numerical expression.
   a) \((2 + 3) \times 4 = \) b) \(2 + (3 \times 4) = \)
   c) \(8 \div (6 - 2) = \)

2. Solve the equation by guessing and checking.
   a) \(4 + \square = 11\) b) \(\square - 7 = 6\)
   BONUS►\(32 - \square = 17\)

3. Solve the equation by writing the unknown by itself.
   a) \(4 \times \square = 12\) b) \(\square - 8 = 9\)
   BONUS►\(26 + \square = 2\)

4. Write the mathematical expressions in words.
   a) \((5 + 3) \times 4\) b) \(2 + (7 \times 3)\)
   c) \(9 \div (4 + 2)\)

5. Replace the variable with the given number and evaluate.
   a) \((n + 4) \times 2, \quad n = 3\) b) \(3 + (t \times 2), \quad t = 4\)
   c) \(6 \div (w - 5), \quad w = 8\)

6. Circle the part that is larger. Write the difference two ways to make an equation.
   Then solve the equation.
   a) 8 games \(6\) books \(x\) pens
   b) \(x\) pens \(3\) more pencils than pens \(5\) pencils
   c) 7 apples \(4\) fewer oranges than apples \(x\) oranges
1. a) 20
   b) 14
   c) 2
2. a) 7
   b) 13
   BONUS
   15
3. a) \( \square = 12 + 4 \)
    \( \square = 3 \)
   b) \( \square = 9 + 8 \)
    \( \square = 17 \)
   BONUS
   \( \square = 26 \div 2, \square = 13 \)
4. a) Add 5 and 3. Then multiply by 4.
   b) 2 more than the product of 7 and 3.
   c) 9 divided by the sum of 4 and 2.
5. a) \((3 + 4) \times 2\)
    \(= 7 \times 2\)
    \(= 14\)
   b) \(3 + (4 \times 2)\)
    \(= 3 + 8\)
    \(= 11\)
   c) \(6 \div (8 - 5)\)
    \(= 6 + 3\)
    \(= 2\)
6. a) circle games
    \(8 - 6 = x\)
    \(x = 2\)
   b) circle pencils
    \(5 - 3 = x\)
    \(x = 2\)
   c) circle apples
    \(7 - 4 = x\)
    \(x = 3\)
1. Write the parts and how much each part costs. Write and solve an equation.
   A pen costs $9 and a pencil is $5 cheaper than the pen.
   a) How much does the pencil cost?
   b) How much do the pen and pencil cost altogether?

2. Write an equation to solve the problem.
   Ella read 23 pages on Monday. She read 6 pages in the morning.
   How many pages did she read in the afternoon?

3. Sara is 4 times as old as her brother. Sara is 6 years older than her brother. Finish the model to find out how old Sara is.

4. Draw a model for the story. Then solve the problem.
   There are 42 people on a school bus.
   There are five times as many children as there are adults.
   How many children and how many adults are on the bus?

5. Write an equation to solve the problem.
   Amit is twice as old as John. Clara is 3 years older than John. John is 11 years old.
   a) How old is Amit?
   b) How old is Clara?

BONUS►Phil collects quarters, dimes, and nickels. He has 40 coins in his collection.
   He has 18 quarters and 15 dimes. How many more dimes than nickels does Phil have?
1. a) pen: $9
   pencil: x
   difference: $5
   
   \[ 9 - 5 = x \]
   \[ x = 4 \]
   The pencil costs $4.

   b) pen: $9
   pencil: $4
   total: x
   
   \[ x = 9 + 4 \]
   \[ x = 13 \]
   The pen and pencil cost $13 altogether.

2. \[ x = 23 - 6 \]
   \[ x = 17 \]
   Ella read 17 pages in the afternoon.

3. Teacher to check diagram.
   Sara is 8 years old.

4. Teacher to check diagram.
   There are 35 children and 7 adults on the bus.

5. a) \[ a = 2 \times 11 \]
   \[ a = 22 \]
   Amit is 22 years old.

   b) \[ c = 11 + 3 \]
   \[ c = 14 \]
   Clara is 14 years old.

**BONUS**

\[ n + 15 + 18 = 40 \]
\[ n = 7 \]
\[ 15 - 7 = 8 \]
Phil has 8 more dimes than nickels.
1. Solve the equation.
   a) \( w + 7 = 26 \)  
   b) \( b \times 3 = 27 \)

   \( w = \underline{\text{______}} \)  
   \( b = \underline{\text{______}} \)

2. Write an equation that tells you the relationship between the numbers in Column A and Column B.
   a) \( \begin{array}{|c|c|} \hline A & B \\ \hline 1 & 7 \\ 2 & 14 \\ 3 & 21 \\ \hline \end{array} \)
   b) \( \begin{array}{|c|c|} \hline A & B \\ \hline 1 & 9 \\ 2 & 10 \\ 3 & 11 \\ \hline \end{array} \)

3. Let \( b \) stand for the number of apples in each bag. Write an equation to find \( b \).
   a) 19 apples in total
   
   \( \begin{array}{|c|c|} \hline \text{Bag} & \text{Apples} \\ \hline 1 & 1 \\ 2 & 2 \\ 3 & 3 \\ \hline \end{array} \)
   
   Equation: \( \underline{\text{______}} \)

   \( \underline{\text{______}} \) apples in each bag

   b) 15 apples in total

   \( \begin{array}{|c|c|} \hline \text{Bag} & \text{Apples} \\ \hline 1 & 1 \\ 2 & 1 \\ 3 & 2 \\ \hline \end{array} \)

   Equation: \( \underline{\text{______}} \)

   \( \underline{\text{______}} \) apples in each bag

4. Write the mathematical expressions in words.
   a) \( (3 + 1) \times 5 \)  
   b) \( 13 - 4 \times 3 \)

   a) \( \underline{\text{______}} \)
   b) \( \underline{\text{______}} \)

5. Replace the variable with the given number, then evaluate.
   a) \( 2h - 5, \ h = 3 \)
   b) \( 3x + 7, \ x = 6 \)
   c) \( 9 - 4n, \ n = 2 \)

   \( \underline{\text{______}} \)
   \( \underline{\text{______}} \)

**BONUS**
Anna wants to buy a new MP3-player that costs $35. Anna has already saved $7. Anna decides to save equal amounts of money each month for the next four months. Write an expression to show the amount of money that she has to save each month.
6. Write and solve the equation for the problem.

There are 14 red cars. There are 7 fewer red cars than blue cars. How many blue cars are there?

7. What is the size of each block?

a) \[ \begin{array}{ccc} & & \end{array} \quad 35 \]

b) \[ \begin{array}{ccc} & & \\ & & \end{array} \quad 26 \]

8. Megan is 3 times as old as her brother. Megan is 8 years older than her brother. Finish the model to find out how old Megan is.

9. An apple slicer cuts apples into 6 equal pieces. There are 4 apples and 8 people sharing the apples. Each person gets the same number of pieces. How many pieces of apple does each person get?

10. There are twice as many orange pens as red pens. There are 8 more black pens than red pens. There are 4 red pens. How many pens are there altogether?

BONUS ► Amy is arranging floor tiles. She uses 6 red tiles. There are 10 fewer red tiles than blue tiles and twice as many white tiles as the sum of red and blue tiles.

a) How many tiles of each colour does Amy use?

b) How many tiles does she use in total?
1. a) \( w = 15 \)
   b) \( b = 15 \)
2. a) \( B = 3A \)
   a) \( B = A + 8 \)
3. a) \( 3b + 1 = 19 \)
    \( b = 6 \)
   b) \( 3b + 3 = 15 \)
    \( b = 4 \)
4. a) five times the sum of three and one
   b) thirteen minus the product of 4 and 3
5. a) \( 2(3) - 5 \)
    \( = 6 - 5 \)
    \( = 1 \)
   b) \( 3(6) + 7 \)
    \( = 18 + 7 \)
    \( = 25 \)
   c) \( 9 - 4(2) \)
    \( = 9 - 8 \)
    \( = 1 \)
**BONUS**
\( (35 - 7) + 4 \)
6. \( b - 14 = 7 \)
   \( b = 14 + 7 \)
   \( b = 21 \)
7. a) \( 7 \)
   b) \( 13 \)
8. In the diagram, the bracket represents 8, and each block represents 4.
   Megan is 8 years old.
9. \( 4 \times 6 = 24 \)
   \( 24 \div 8 = 3 \)
   Each person gets 3 pieces.
10. \( r = 4 \)
    \( b = 4 + 8 = 12 \)
    \( o = 2 \times 4 = 8 \)
    \( 4 + 12 + 8 \)
    \( = 24 \) pens altogether
**BONUS**
   a) \( r = 6 \)
    \( b = 6 + 10 = 16 \)
    \( r + b = 22 \)
    \( w = 22 \times 2 = 44 \)
   b) \( 6 + 16 + 44 \)
    \( = 66 \) tiles in total
Unit 9: Number Sense

Quiz (Lessons 34–37) — ON

1. Using a ruler, complete the figure to make a whole.
   a) \[
   \begin{array}{c}
   \hline
   \frac{2}{5}
   \end{array}
   \]
   b) \[
   \begin{array}{c}
   \hline
   \frac{3}{4}
   \end{array}
   \]

2. Complete the sentences.
   a) \[
   \begin{array}{c}
   \square \triangle \bigcirc \square \bigcirc \\
   \end{array}
   \]
   of the shapes are shaded.        of the shapes are squares.
   of the shapes are rectangles.        of the shapes are not triangles.
   b) \[
   \begin{array}{c}
   \square \triangle \bigcirc \square \bigcirc \\
   \end{array}
   \]

BONUS► Shade the strips to show that Kyle finished \(\frac{1}{2}\) of the homework questions, Zara finished \(\frac{3}{4}\) of the questions, and Nina finished \(\frac{12}{28}\) of the questions. Who finished the most questions? Order the fractions from greatest to least in the blanks below.

   Kyle: \[
   \begin{array}{c}
   \hline
   \hline
   \hline
   \end{array}
   \]
   Zara: \[
   \begin{array}{c}
   \hline
   \hline
   \hline
   \end{array}
   \]
   Nina: \[
   \begin{array}{c}
   \hline
   \hline
   \hline
   \hline
   \hline
   \hline
   \hline
   \hline
   \hline
   \hline
   \end{array}
   \]

   \[
   \begin{array}{c}
   > \quad > \quad > \\
   \end{array}
   \]

3. Use the number line to order the fractions from least to greatest. Draw an \(\times\) to mark the position of each fraction.

   \[
   \begin{array}{ccccccccccc}
   0 & \frac{1}{9} & \frac{2}{9} & \frac{3}{9} & \frac{4}{9} & \frac{5}{9} & \frac{6}{9} & \frac{7}{9} & \frac{8}{9} & \frac{9}{9} \\
   \hline
   5 & 3 & 7 & 2 & 9 & 1 & \bigcirc & \bigcirc & \bigcirc & \bigcirc
   \end{array}
   \]
1. Teacher to check.
2. a) \[
\frac{2}{5} \quad \frac{2}{5}
\]
b) \[
\frac{3}{7} \quad \frac{5}{7}
\]

BONUS

Zara finished the most questions.
\[
\frac{3}{4} > \frac{1}{2} > \frac{12}{28}
\]

3. \[
\frac{1}{9} \quad \frac{2}{9} \quad \frac{3}{9} \quad \frac{5}{9} \quad \frac{7}{9} \quad \frac{9}{9}
\]

Unit Quizzes and Tests for Grade 5
1. Circle the greater fraction.
   a) \( \frac{5}{6} \) or \( \frac{5}{9} \)
   b) \( \frac{7}{10} \) or \( \frac{9}{10} \)
   c) \( \frac{8}{11} \) or \( \frac{6}{11} \)
   d) \( \frac{12}{15} \) or \( \frac{12}{14} \)

2. Write any number in the blank that makes the relationship correct.
   a) \( \frac{4}{9} < \frac{9}{9} \)
   b) \( \frac{347}{347} > \frac{345}{347} \)
   c) \( \frac{3}{422} > \frac{422}{422} \)
   BONUS: \( \frac{999}{1000} < \frac{999}{999} \)

3. Order the fractions from least to greatest by considering the numerators and denominators.
   a) \( \frac{1}{6}, \frac{1}{10}, \frac{1}{9}, \frac{1}{11} \)
   b) \( \frac{3}{16}, \frac{3}{20}, \frac{3}{5}, \frac{3}{31} \)

4. Draw lines to cut the whole cake into more equal pieces. Fill in the numerators of the equivalent fractions.
   a) \( \frac{1}{2} = \frac{4}{8} = \frac{8}{16} \)

5. Use multiplication to find the equivalent fraction.
   a) \( \frac{2}{5} \times 5 = \frac{10}{10} \)
   b) \( \frac{3}{4} \times 4 = \frac{12}{28} \)
   c) \( \frac{7}{9} \times 9 = \frac{63}{81} \)

6. Sketch the pies. Then write an equivalent mixed number or improper fraction.
   a) \( 3 \frac{1}{2} \) pies
   b) \( 11 \frac{4}{4} \) pies
Unit 9: Number Sense

Quiz (Lessons 38, 39, 41) — ON

1. a) \( \frac{5}{6} \)
   b) \( \frac{9}{10} \)
   c) \( \frac{8}{11} \)
   d) \( \frac{12}{14} \)

2. a) any number larger than 4
   b) any number larger than 345
   c) any number less than 3
   BONUS any number less than 1000

3. a) \( \frac{1}{11}, \frac{1}{10}, \frac{1}{9}, \frac{1}{8}, \frac{1}{6}, \frac{1}{5}, \frac{1}{2} \)
   b) \( \frac{3}{31}, \frac{3}{20}, \frac{3}{16}, \frac{3}{5}, \frac{3}{4} \)

4. Teacher to check drawings.
   2, 4, 8

5. a) \( \times 2, \times 2, 5 \)
   b) \( \times 7, \times 7, 21 \)
   c) \( \times 9, \times 9, 63 \)

6. Teacher to check sketches.
   a) \( \frac{7}{2} \)
   b) \( 2 \frac{3}{4} \)
Unit 9: Number Sense

Quiz (Lessons 42–45) — ON

Name: __________________________
Date: ___________________

1. Find the number of thirds or fourths. Write the answer as an improper fraction.
   a) \(5\frac{2}{3}\) pies = ___ thirds + ___ thirds = [ ]
   b) \(3\frac{3}{4}\) pies = ___ fourths + ___ fourths = [ ]

2. Write the improper fraction as a mixed number by dividing.
   a) \(\frac{8}{3}\) \(8 \div 3 = \) ___ R ___
   b) \(\frac{19}{5}\) \(19 \div 5 = \) ___ R ___

   So \(\frac{8}{3} = \) [ ]
   So \(\frac{19}{5} = \) [ ]

3. Circle the greater mixed number or improper fraction.
   a) \(9\frac{2}{3}\) \(9\frac{2}{5}\)
   b) \(\frac{42}{30}\) \(\frac{51}{30}\)

   BONUS ► \(\frac{2439}{53}\) \(\frac{2395}{53}\)

4. Draw a picture to find \(\frac{3}{5}\) of 20 pencils.

5. A car travels 60 kilometres in one hour.
   a) How many kilometres will the car travel in 3 hours? ________
   b) How many kilometres will the car travel in half an hour? ________
   c) How many kilometres will the car travel in \(3\frac{1}{2}\) hours? ________

BONUS ► Carl walked \(\frac{10}{110}\) kilometres in one minute. Blanca walked \(\frac{10}{120}\) kilometres in one minute.

**Unit 9: Number Sense**

*Quiz (Lessons 42–45) — ON*

1. a) $15, 2, \frac{17}{3}$
   
b) $12, 3, \frac{15}{4}$

2. a) $2 \text{ R } 2$
   
   $2 \frac{2}{3}$

   b) $3 \text{ R } 4$
   
   $3 \frac{4}{5}$

3. a) $9 \frac{2}{3}$
   
   b) $51 \frac{30}$

**BONUS**

$\frac{2439}{53}$

4. Teacher to check drawing.

   12 pencils

5. a) 180
   
   b) 30
   
   c) 210

**BONUS**

The denominator of the first fraction is smaller, so $\frac{10}{110} > \frac{10}{120}$. So Carl walked farther and faster.
Unit 9: Number Sense

Test (Lessons 34–37, 39, 41, 42, 44, 45) — ON

1. Complete the sentence.

![Shapes](image)

a) □ of the shapes are shaded.  
b) □ of the shapes are squares.

c) □ of the shapes are rectangles.  
d) □ of the shapes are not triangles.

2. Use the number line to order the fractions from least to greatest.
   Draw an × to mark the position of each fraction.

   ![Number Line](image)

   \[
   \frac{3}{12} < \frac{1}{12} < \frac{9}{12} < \frac{4}{12} < \frac{11}{12} < \frac{7}{12}
   \]

3. Use each fraction twice to describe the set of shapes: \(\frac{1}{9}, \frac{4}{9}, \frac{5}{9}\).

   ![Shapes](image)

4. What fraction of the letters in the word “Saskatchewan” are …
   a) vowels? □  
   b) consonants? □
5. Use multiplication to find the equivalent fraction.
   a) \(\frac{3}{5} \times \frac{\_}{\_} = \frac{20}{\_}\)  
   b) \(\frac{5}{8} = \frac{48}{\_}\)  
   c) \(\frac{8}{11} = \frac{\_}{99}\)

6. Explain why each picture does (or does not) show \(\frac{2}{5}\).
   a) 
   b) 
   c) 

   BONUS

7. Sketch the pies. Then write an equivalent mixed number or improper fraction.
   a) \(2\frac{1}{4}\) pies 
   b) \(\frac{11}{3}\) pies

8. Find the number of thirds or fourths. Write the answer as an improper fraction.
   a) \(4\frac{1}{3}\) pies = ___ thirds + ___ third = 
   b) \(5\frac{2}{4}\) pies = ___ fourths + ___ fourths = 
9. Write the improper fraction as a mixed number by dividing.
   a) $\frac{17}{5} \div 5 = ___ R ___$
   b) $\frac{22}{7} \div 7 = ___ R ___$
   So $\frac{17}{5} = ___$
   So $\frac{22}{7} = ___$

10. Circle the greater mixed number or improper fraction.
   a) $8\frac{1}{4}$  $8\frac{3}{4}$
   b) $\frac{37}{21}$  $\frac{42}{21}$
   BONUS $\frac{3979}{22}$  $\frac{3979}{21}$

11. A train travels 130 kilometres in one hour.
   a) How many kilometres will the train travel in 4 hours? __________
   b) How many kilometres will the train travel in half an hour? __________
   c) How many kilometres will the train travel in $4\frac{1}{2}$ hours? __________
1. a) $\frac{6}{11}$
b) $\frac{3}{11}$
c) $\frac{5}{11}$
d) $\frac{8}{11}$

2. $\frac{1}{12}, \frac{3}{12}, \frac{4}{12}, \frac{7}{12}, \frac{9}{12}, \frac{11}{12}$

3. Answers will vary.
   Sample answers:
   - $\frac{1}{9}$ unshaded circles,
   - $\frac{1}{9}$ shaded triangles,
   - $\frac{4}{9}$ unshaded shapes,
   - $\frac{4}{9}$ circles,
   - $\frac{5}{9}$ shaded shapes,
   - $\frac{5}{9}$ polygons

4. a) $\frac{4}{12}$ or $\frac{1}{3}$
b) $\frac{8}{12}$ or $\frac{2}{3}$

5. a) $\times 4, \times 4, 12$
b) $\times 6, \times 6, 30$
c) $\times 9, \times 9, 72$

6. a) yes, because 2 equal parts out of 5 are shaded
   b) no, because there are 6 equal parts
   c) no, because the parts are not equal

BONUS
   yes, because 2 equal parts out of 5 are shaded

7. Teacher to check sketches.
   a) $\frac{9}{4}$

8. a) $12, \frac{13}{3}$
b) $20, \frac{22}{4}$

9. a) $3 R 2$
   b) $3 R 1$

10. a) $8 \frac{3}{4}$
b) $\frac{42}{21}$

BONUS
   $\frac{3979}{21}$

11. a) 520 km
   b) 65 km
   c) 585 km
1. Write a fraction for the shaded part of the hundreds block. Then write the fraction as a decimal. Hint: Count by 10s for each column or row that is shaded.

   a)  
   
   b)  
   BONUS  
   

2. Write the fraction as a decimal with 2 digits after the decimal point.

   a) \( \frac{39}{100} = 0.\underline{\underline{3}} \underline{9} \)  
   b) \( \frac{4}{100} = 0.\underline{\underline{0}} \underline{4} \)

   c) \( \frac{8}{10} = 0.\underline{\underline{8}} \)  
   d) \( \frac{4}{10} = 0.\underline{\underline{4}} \)

   = 0.\underline{\underline{0}} \underline{8}  
   = 0.\underline{\underline{4}} \underline{0} 

3. Cross out the equalities that are incorrect.

   \( \frac{47}{100} = 0.47 \)  
   \( \frac{9}{100} = 0.9 \)  
   \( \frac{0.05}{10} = \frac{5}{10} \)  
   \( 0.60 = \frac{6}{10} \)

4. Fill in the blanks.

   a) 53 hundredths = \( \underline{5} \) tenths + \( \underline{3} \) hundredths
   b) 7 hundredths = \( \underline{0} \) tenths + \( \underline{7} \) hundredths

5. Estimate and mark the location of the decimals on the number line.

   A. 0.83  
   B. 0.26  
   C. 0.95  
   D. 0.54  
   E. 0.79

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.1</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
<td>0.5</td>
</tr>
</tbody>
</table>

6. Change the improper fraction to a mixed number and then to a decimal.

   a) \( \frac{82}{10} = \)
   b) \( \frac{791}{10} = \)

7. Write the decimal as an improper fraction with denominator 10 or 100.

   a) 4.6 =  
   b) 52.67 =
1. a) \( \frac{18}{100} = 0.18 \)
   
   b) \( \frac{71}{100} = 0.71 \)

**BONUS**

\( \frac{91}{100} = 0.91 \)

2. a) 0.39
   
   b) 0.04
   
   c) 0.8
      0.80
   
   d) 0.4
      0.40

3. Cross out \( \frac{9}{100} = 0.9 \) and \( \frac{0.05 = 5}{10} \).

4. a) 5, 3
   
   b) 0, 7

5. Teacher to check.

6. a) \( \frac{22}{10} = 8.2 \)
   
   b) \( \frac{79.1}{10} = 79.1 \)

7. a) \( \frac{46}{10} \)
   
   b) \( \frac{5267}{100} \)
1. Write the place value of the underlined digit.
   a) 35.8
   b) 17.4
   c) 950.81
   d) 0.7
   e) 108.35
   f) 71.92

2. Put a decimal point in the number so that the digit 7 has the value \( \frac{7}{10} \).
   a) 5 9 7 0
   b) 3 5 6 7
   c) 2 7
   d) 6 7 9

3. Mark the decimal or fraction on the number line with a dot and a letter.
   A. 0.67
   B. 0.12
   C. 0.05
   D. \( \frac{43}{100} \)
   E. \( \frac{2}{100} \)
   BONUS► F. \( \frac{990}{1000} \)

4. Change all decimals to fractions with the denominator 100. Write the fractions in order from greatest to least.
   a) 0.42
   b) 0.08
   \( \frac{74}{100} \)
   0.80

   \( \square > \square > \square \)

   \( \square > \square > \square \)
1. a) tens  
b) tenths  
c) hundreds  
d) ones  
e) hundredths  
f) tenths  
2. a) 59.70  
b) 356.7  
c) 2.7  
d) 6.79  
3. Teacher to check.  
4. a) \[
\begin{array}{ccc}
42 & 50 & 40 \\
100 & 100 & 100 \\
50 & 42 & 40 \\
100 & 100 & 100 \\
\end{array}
\]  
b) \[
\begin{array}{ccc}
8 & 74 & 80 \\
100 & 100 & 100 \\
80 & 74 & 8 \\
100 & 100 & 100 \\
\end{array}
\]
1. Write equivalent fractions.

   a) \( \frac{1}{5} = \frac{10}{100} \)
   b) \( \frac{3}{5} = \frac{10}{100} \)
   c) \( \frac{4}{5} = \frac{10}{100} \)

2. Circle the greater number in the pair. Hint: First change all fractions and decimals to fractions with denominator 100.

   a) 0.37 \( \frac{2}{5} \)
   b) \( \frac{1}{2} \) 0.49
   c) \( \frac{4}{5} \) 0.81

3. Regroup so that each place value has a single digit.

   a) 5 ones + 14 tenths = _____ ones + _____ tenths
   b) 3 tenths + 17 hundredths = _____ tenths + _____ hundredths
   c) 0 tenths + 19 hundredths = _____ tenth + _____ hundredths

4. Add the decimals by lining up the decimal points. You may need to regroup.

   a) 0.8 + 0.64
   b) 1.27 + 3.45
   BONUS \( 1.46 + 0.38 + 2.51 \)

5. Subtract the decimals on the grid.

   a) 0.75 − 0.34
   b) 6.23 − 3.15
   c) 3.46 − 0.52
Unit 10: Number Sense
Quiz (Lessons 53–55) — ON

1. a) 2, 20
   b) 6, 60
   c) 8, 80

2. a) Circle \(\frac{2}{5}\)
   \[
   \frac{37}{100}, \quad \frac{40}{100}
   \]
   b) Circle \(\frac{1}{2}\)
   \[
   \frac{50}{100}, \quad \frac{49}{100}
   \]
   c) Circle 0.81,
   \[
   \frac{80}{100}, \quad \frac{81}{100}
   \]

3. a) 6, 4
   b) 4, 7
   c) 1, 9

4. a) 1.44
   b) 4.72
   **BONUS**
   4.35

5. a) 0.41
   b) 3.08
   c) 2.94
1. Mark the decimal or fraction on the number line with a dot and a letter.

A. 0.83       B. 0.19       C. 0.02       D. $\frac{73}{100}$      E. $\frac{6}{100}$      F. $\frac{9}{10}$

2. Write the decimals as hundredths to compare the decimals. Then write < or > in the box.

\[\begin{array}{lllll}
a) 0.6 & 0.58 & b) 0.06 & 0.60 & c) 0.81 & 0.9 \\
& = \frac{\square}{100} = \frac{\square}{100} & = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square}
\end{array}\]

3. Estimate and mark the location of the decimals on the number line.

A. 0.92       B. 0.07       C. 0.30       D. 0.41       E. 0.84

4. Write the decimal as an improper fraction with denominator 10 or 100.

a) 6.8 =  
    b) 42.35 =  
    c) 523.9 =  

5. Write the place value of the underlined digit.

a) 432.8 _______  
    b) 17.04 _______  
    c) 9.81 _______  

    d) 601.73 _______  
    e) 108.55 _______  
    f) 71.49 _______  


6. Vicky thinks \( \frac{40}{100} \) is greater than 0.4 because 40 is greater than 4. Do you agree? Explain.

7. Write the numbers in order from least to greatest. Explain how you found your answer.

\[
\begin{align*}
0.28 & \quad \frac{3}{4} & \quad 0.7 & \quad \frac{3}{5} & \quad \frac{1}{2} \\
\end{align*}
\]

8. Add the decimals by lining up the decimal points. You may need to regroup.

\[
\begin{align*}
a) \quad 5.72 + 0.26 & \quad b) \quad 0.7 + 3.45 & \quad \text{BONUS} \quad 2.55 + 0.43 + 3.64 \\
\end{align*}
\]

9. Tony made a fruit drink by mixing 0.48 L of juice with 0.63 L of ginger ale. How many more litres of ginger ale than juice did he use?
1. Teacher to check.

2. a) \[ \frac{60}{100}, \frac{58}{100} \]
   \[0.6 > 0.58\]
   \[0.08 < 0.60\]
   \[0.81 < 0.9\]

3. Teacher to check.

4. a) \[ \frac{68}{10} \]
   b) \[ \frac{4235}{100} \]
   c) \[ \frac{5239}{10} \]

5. a) tens
   b) hundredths
   c) ones
   d) hundreds
   e) tenths
   f) hundredths

6. I do not agree with Vicky.
   \[ \frac{40}{100} = 0.4 \]

7. \[ 0.28 < \frac{1}{2} < \frac{3}{5} < 0.7 < \frac{3}{4} \]
   Sample explanation:
   I wrote all the numbers as fractions with denominator 100:
   \[ 0.28 = \frac{28}{100}, \frac{3}{4} = \frac{75}{100}, \frac{3}{5} = \frac{60}{100}, \frac{1}{2} = \frac{50}{100} \]

8. a) 5.98
   b) 4.15
   c) 6.62

9. \[ 0.63 - 0.48 = 0.15 \text{ L} \]
   Tony used 0.15 L more ginger ale than juice.
Unit 11: Number Sense

Quiz (Lessons 56–58) — ON

Name: ______________________

Date: ________________

1. Write the amount in cent notation.
   a) $8.00 = _______  
   b) $0.39 = _______  
   c) $3.07 = _______

2. Write the amount in dollar notation.
   a) 547¢ = _______  
   b) 9¢ = _______  
   c) 1301¢ = _______

3. Write the amount in cent notation and then in dollar notation.
   a) 7 nickels = _______ = _______
   b) 4 quarters = _______ = _______
   c) 11 dimes = _______ = _______
   BONUS ► 5 toonies, 2 loonies, 3 quarters, and 1 dime = _______ = _______

4. Add or subtract. You will have to regroup.
   a) $15.03 − $12.95  
   b) $32.16 + $24.85  
   c) $90.00 − $82.50

   $  
   $  
   $  

5. Lynn has $45. If she buys a sweater for $24.50 and a book for $10.20, will she have enough money to buy another book for $10.35?

6. Round to the nearest whole number.
   a) 2.3 ______  
   b) 5.7 ______  
   c) 9.5 ______

7. Round to the nearest tenth. Underline the tenths digit first. Then put your pencil on the digit to the right (the hundredths digit). This digit tells you whether to round up or down.
   a) 6.43 ______  
   b) 7.86 ______  
   c) 3.15 ______
Unit 11: Number Sense

Quiz (Lessons 56–58) — ON

1. a) 800¢
   b) 39¢
   c) 307¢
2. a) $5.47
   b) $0.09
   c) $13.01
3. a) 35¢, $0.35
   b) 100¢, $1.00
   c) 110¢, $1.10
   BONUS
   1285¢, $12.85
4. a) $2.08
   b) $57.01
   c) $7.50
5. No. The sweater and the first book cost $24.50 + $10.20 = $34.70 altogether. Lynn will have $45 - $34.70 = $10.30 left, so she does not have enough to buy the other book.
6. a) 2
   b) 6
   c) 10
7. Teacher to check underlining.
   a) 6.4
   b) 7.9
   c) 3.2
1. Estimate by rounding to the nearest tenth. Then add or subtract.
   a) $0.81 + 1.07 \approx \underline{\hspace{1cm}}$
   b) $5.79 - 1.42 \approx \underline{\hspace{1cm}}$
   BONUS ► $999.96 - 9.99 \approx \underline{\hspace{1cm}}$

2. Multiply by 10 by shifting the decimal point one place to the right.
   a) $10 \times 4.6 = \underline{\hspace{1cm}}$
   b) $8.9 \times 10 = \underline{\hspace{1cm}}$
   c) $95.3 \times 10 = \underline{\hspace{1cm}}$

3. Multiply by 100. Do your rough work in the grid.
   a) $8.9 \times 100 = \underline{\hspace{1cm}}$
   b) $100 \times 0.06 = \underline{\hspace{1cm}}$

4. Convert the measurement.
   a) $3.06 \text{ km} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \text{ m}$
   b) $0.51 \text{ m} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \text{ cm}$

5. Shift the decimal point one or two places to the left. Draw an arrow to show a shift.
   Hint: If there is no decimal point, write it to the right of the number first.
   a) $8.7 \div 10 = \underline{\hspace{1cm}}$
   b) $59 \div 100 = \underline{\hspace{1cm}}$

6. Estimate by rounding both numbers to the nearest tenth. Then use the grid to add or subtract.
   a) $57.16 - 42.34$
   b) $108.01 + 58.85$
1. a) $0.8 + 1.1 = 1.9$
b) $5.8 - 1.4 = 4.4$

**BONUS**

1000 - 10 = 990

2. a) 46
b) 89
c) 953

3. a) 890
b) 6

4. a) 1000, 3060
b) 100, 51

5. Teacher to check arrows.
a) 0.87 or .87
b) 0.59 or .59

6. a) $57.2 - 42.3 = 14.9$
b) $108.0 + 58.9 = 166.9$
1. Write the amount in cent notation.
   a) $9.02 = _______  b) $0.18 = _______  c) $15.70 = _______

2. Write the amount in dollar notation.
   a) 607¢ = _______  b) 9¢ = _______  c) 1465¢ = _______

3. Write the amount in cent notation and then in dollar notation.
   a) 8 nickels = _____ = _____  b) 5 quarters = _____ = _____  c) 9 dimes = _____ = _____

4. Add or subtract. You will have to regroup.
   a) $65.31 − $42.15  b) $43.27 + $14.84  c) $80.00 − $29.59

5. Round to the nearest whole number.
   a) 8.2 _____  b) 15.6 _____  c) 29.5 _____

6. Estimate by rounding to the nearest tenth. Then add or subtract.
   a) 86.44 + 2.37 ≈ __________________
   b) 15.68 − 2.51 ≈ __________________

7. Multiply by 10 by shifting the decimal point one place to the right.
   a) 10 × 8.5 = _____  b) 42.9 × 10 = _____  c) 95.32 × 10 = _____

8. Shift the decimal point one or two places to the left. Draw an arrow to show a shift.
   Hint: If there is no decimal point, write it to the right of the number first.
   a) 81.3 ÷ 10 = ____________  b) 657 ÷ 100 = ____________
9. a) To multiply by 1000, I move the decimal point ______ places to the ___________.
   b) To divide by 100, I move the decimal point ______ places to the ___________.

10. Estimate by rounding both numbers to the nearest tenth. Then use the grid to add or subtract.

   a) 48.63 + 27.29  
   BONUS ► 199.97 − 69.95

11. Emma wants to buy 2 children’s tickets and 1 adult ticket for a show. Children’s tickets cost $5.25 and adult tickets cost $10.25. She has $20. Does she have enough money?

   a) Estimate by rounding to the nearest whole number. Write “yes” or “no” in the blank.
   b) Calculate. Write “yes” or “no” in the blank.

   c) If you rounded to the nearest tenth instead of the whole number in part a), would you have said Emma has enough money to pay for the tickets? Explain.
1. a) 902¢
   b) 18¢
   c) 1570¢

2. a) $6.07
   b) $0.09
   c) $14.65

3. a) 40¢, $0.40
   b) 125¢, $1.25
   c) 90¢, $0.90

4. a) $23.16
   b) $58.11
   c) $50.41

5. a) 8
   b) 16
   c) 30

6. a) 86.4 + 2.4 = 88.8
   b) 15.7 − 2.5 = 13.5

7. a) 85
   b) 429
   c) 953.2

8. Teacher to check arrows.
   a) 8.13
   b) 6.57

9. a) 3, right
    b) 2, left

10. a) 48.6 + 27.3 = 75.9

BONUS
200.0 − 70.0 = 130.0

11. a) $5 + $5 + $10 = $20, yes

   b) $5.25 + $5.25 + $10.25 = $20.75, no

   c) No, because when rounded to the nearest tenth, the tickets cost $5.30 + $5.30 + $10.30 = $20.90, which is more than $20.
1. Translate the dot.
   a) 3 units left, 2 units up  
   b) 5 units right, 3 units down

   ![Graph showing translation](image1)

2. Slide the shape 4 units right and 2 units down.

   ![Graph showing slide](image2)

3. Is the dashed line a line of symmetry?
   a)  
   b)  
   c)  

   ![Graph showing symmetry](image3)

BONUS ➤ Draw at least 5 lines of symmetry on the regular octagon.

   ![Octagon with lines of symmetry](image4)
Unit 12: Geometry

Quiz (Lessons 12–16) — ON

4. Circle the dot in the given position.
   a) (2, 3)  
   b) (4, 1)  
   c) (3, 2)

5. a) Find the coordinates of the points.
   A (___, ___)  B (___, ___)  C (___, ___)

   b) Plot and label the points.
   D (2, 4)  E (0, 3)

6. This map shows part of Feral Cat Island.
   a) Fill in the blanks.
      From the Rose Bush, walk ____ paces west
      and ____ paces north to the Large Birch.
      From the Large Birch, walk _______________________
      and ___________________ to the Tall Fir.
   
   b) Gold is buried 15 paces east and 10 paces south of the
      Red Rock. Mark the point on the map where gold is buried.
      Label the point “G.”
Unit 12: Geometry

Quiz (Lessons 12–16) — ON

1. a)

   ![Diagram]

b)

   ![Diagram]

2. 

   ![Diagram]

3. a) no
   b) yes
   c) no

BONUS

Teacher to check for 5 of 8
lines shown below:

4. a)

   ![Diagram]

b)

   ![Diagram]

c)

5. a) $A \ (0, 0), \ B \ (7, 4), \ C \ (2, 8)$$

b)

   ![Diagram]

6. a) 5, 20

   10 paces east,
   10 paces south

b)
Unit 12: Geometry

1. Draw the reflections of the shape and points in the line.
   a) ![Reflection](image1)
   b) ![Reflection](image2)

2. a) Extend the pattern by reflecting the shape in vertical lines.
   ![Pattern](image3)
   b) Draw the 12th shape in the pattern.
   ![Pattern](image4)

3. Draw the line of reflection or a translation arrow.
   a) ![Line of Reflection](image5)
   b) ![Translation Arrow](image6)
   BONUS: ![BONUS](image7)
Unit 12: Geometry

Quiz (Lessons 17, 18) — ON

1. a) 
   ![Diagram](image1)

   b) 
   ![Diagram](image2)

2. a) 
   ![Diagram](image3)

   b) 
   ![Diagram](image4)

3. a) 
   ![Diagram](image5)

   b) 
   ![Diagram](image6)

BONUS 
   ![Diagram](image7)
1. Slide the shape 5 units left and 2 units up.

2. Can the pair of shapes be created by a translation? If so, describe the translation. If not, explain why not.
   a) ____________________________   ____________________________
   b) ____________________________   ____________________________

3. Each square on the map has sides 2 km long.
   a) Give the coordinates for each landmark.
      Round Lake ________
      Fang Cliff ________
   b) What is located at each point?
      (4, 4) ____________________________
      (3, 12) ____________________________
   c) Complete the directions.
      From Clear Spring to the Swamp, walk ____________________________.
4. Draw the reflection of the shape by first finding the reflections of its vertices.

a) 

b)  BONUS

5. Jodi made a pattern by alternating between translating and reflecting a shape.

a) Continue the pattern.

b) Draw the core of the pattern.

c) Draw the 23rd shape in the pattern.
Unit 12: Geometry

Test (Lessons 12, 13, 15–18) — ON

1.

2. a) Yes, move 4 units right, 2 units down.
   b) No, because the shapes are not congruent.

3. a) (4, 8)
    (13, 7)
   b) Swamp
   Ear Wood
   c) 8 km west and 6 km south

4. a) 
   b) 

BONUS

5. a) Teacher to check.
   b) 
   c)
Unit 13: Geometry

Quiz (Lessons 21–23) — ON

1. Do the marked edges or faces intersect? Write “yes” or “no.” If they intersect, trace the edge or mark the vertex where they meet.

   a) [Diagram]
   b) [Diagram]
   c) [Diagram]
   d) [Diagram]

2. Cross out the objects that are not prisms. Shade the bases of the triangular prisms. Circle the rectangular prisms.

3. Ali makes a 3-D shape. Any two faces in the shape intersect. Can the shape be a prism?

4. Shade the base or bases. Then name the prism or pyramid.

   a) [Diagram]
   b) [Diagram]
   c) [Diagram]
   d) [Diagram]

BONUS ▶ A pyramid has a 9-sided base.
   a) How many faces does the pyramid have? _________
   b) How many vertices does the pyramid have? _________
   c) How many edges does the pyramid have? _________
**Unit 13: Geometry**

**Quiz (Lessons 21–23) — ON**

1. Teacher to check pictures.
   a) yes
   b) yes
   c) yes
   d) no

2. Teacher to check.

3. no

4. Teacher to check shading.
   a) pentagon-based pyramid
   b) triangle-based prism
   c) triangle-based pyramid
   d) pentagon-based prism

**BONUS**

a) 10
b) 10
c) 18
Unit 13: Geometry
Quiz (Lessons 25, 26) — ON

1. Match the net to the 3-D object.

   A. 
   B. 
   C. 
   D. 

   a) 
   b) 
   c) 
   d) 

2. Match the net to the 3-D object.

   A. 
   B. 
   C. 
   D. 

   a) 
   b) 
   c) 
   d) 

3. Sketch the missing face for the net.

   a) 
   b) 
   c) 
   BONUS ➤ 

Name: ______________________
Date: ____________________
4. Create a net for the object.
Unit 13: Geometry
Quiz (Lessons 25, 26) — ON

1. a) C
   b) D
   c) A
   d) B

2. a) D
   b) C
   c) A
   d) B

3. Sample answers:

   a) 
   b) 
   c) 

   BONUS

4. Teacher to check.
Unit 13: Geometry

Test (Lessons 21–23, 25, 26) — ON

1. Do the marked edges or faces intersect? Write “yes” or “no.” If they intersect, trace the edge or mark the vertex where they meet.

   a)  
   b)  
   c)  
   d)  

2. Hannah finds a face in a triangular prism that intersects with every other face. What is the shape of this face? Explain how you know.

   ________________________________________________________________
   ________________________________________________________________

3. Shade the base or bases. Then name the prism or pyramid.

   a)  
   b)  
   c)  
   d)  

   __________  __________  __________  __________

BONUS ► A 3-D shape has 11 vertices and 20 edges.
   a) Is it a pyramid or a prism? ____________
   b) How many sides does its base have? ______
   c) Explain how you know.
Unit 13: Geometry

Test (Lessons 21–23, 25, 26) — ON

4. Match the net to the 3-D object.

A.  

B.  

C.  

D.  

a)  

b)  

c)  

d)  

5. Ravi is making a model of a pyramid out of cardboard. The base of the pyramid is a square that is 4 cm by 4 cm. The height of the triangular faces is 3 cm. Fill in the measurements and draw a net for the model.
Unit 13: Geometry

Test (Lessons 21–23, 25, 26) — ON

1. Teacher to check pictures.
   a) yes
   b) no
   c) yes
   d) no

2. a rectangle
   Sample explanation: The triangular faces are bases and do not intersect each other.

3. Teacher to check shading.
   a) hexagon-based prism
   b) rectangle-based pyramid
   c) triangle-based prism
   d) pentagon-based pyramid

BONUS
   a) pyramid
   b) 10
   c) Sample explanation: In a pyramid, there is one more vertex than the number of sides in the base, and twice as many edges as sides in the base. In a prism, the number of vertices is always an even number.

4. a) C
   b) B
   c) D
   d) A

5. Teacher to check.
1. Find the perimeter and area of the rectangle using the length and the width. Include the units.
   a) Length = 8 cm
      Width = 9 cm
      Perimeter = ______________________
      = ___________
      Area = _______________
      = ___________
   b) Width = 5 m
      Length = 7 m
      Perimeter = ______________________
      = ___________
      Area = _______________
      = ___________

2. Anna wants to use ribbon to decorate the edge of a rectangular box. The box is 60 mm long and 45 mm wide. She has 20 cm of ribbon. Is that enough? Explain how you know.

3. a) Estimate the length and the width of the rectangle in centimetres.
    Then estimate the perimeter.

   b) Measure the length and the width of the rectangle to the nearest tenth of a centimetre. Then calculate the perimeter.

BONUS ► Each square side is 2 cm long. Find the perimeter and the area of the shape.
Unit 14: Measurement

Quiz (Lessons 12–16) — ON

1. a) 8 + 9 + 8 + 9
   34 cm
   8 × 9
   72 cm²
b) 5 + 7 + 5 + 7
   24 m
   5 × 7
   35 m²

2. 60 + 45 + 60 + 45
   = 210 mm = 21 cm
   Anna does not have enough ribbon.

3. a) Answers will vary.
   Sample estimates:
   Length: 3 cm
   Width: 4 cm
   Perimeter: 14 cm
b) Length: 3.1 cm
   Width: 3.8 cm
   Perimeter: 13.8 cm

BONUS

Perimeter: 28 cm
Area: 32 cm²
1. Write a multiplication equation for the number of blocks in the top layer.

   a) ___________________   b) ___________________   c) ___________________

2. How many blocks are in the shaded row?

   a) ______ blocks   b) ______ blocks   c) ______ blocks

3. Find the volume of the object made from unit cubes. Include the units.

   a) Volume = _________   b) Volume = _________   c) Volume = _________

4. Find the volume of the prism.

   Volume = _________
5. The rectangular prism at right is made with 1 cm cubes.
   a) What is the area of the shaded layer? _________________
   b) What is the height of the prism? _________
   c) Find the volume of the prism using your answers to parts a) and b).
Unit 14: Measurement

Quiz (Lessons 17–19) — ON

1. a) 2 × 3 = 6
   b) 2 × 3 = 6
   c) 4 × 3 = 12

2. a) 3
   b) 6
   c) 12

3. a) 8 cm³
   b) 11 m³
   c) 18 m³

4. 5 × 3 × 2 = 30 mm³

**BONUS**

Teacher to check that dimensions of sketches are 8 × 1, 4 × 2, and 2 × 2 × 2

5. a) 2 × 3 = 6 cm²
   b) 4 cm
   c) 6 × 4 = 24 cm³
Unit 14: Measurement
Quiz (Lessons 20–24) — ON

1. Convert the measurements in litres to millilitres.
   a) 2.3 L = _______ mL
   b) 0.45 L = _______ mL
   c) 1.07 L = _______ mL
   d) 10.5 L = _______ mL
   e) 0.008 L = _______ mL
   f) 20.060 L = _______ mL

2. Convert the measurements in millilitres to a mixed measurement.
   a) 2450 mL = _____ L _____ mL
   b) 3040 mL = _____ L _____ mL
   c) 750 mL = _____ L _____ mL
   d) 2065 mL = _____ L _____ mL
   e) 4008 mL = _____ L _____ mL
   BONUS ► 90 040 mL = _____ L _____ mL

3. To make fruit punch, Fran needs:
   970 mL of apple juice
   250 mL of cranberry juice
   330 mL of mango juice
   1.5 L of lemonade

   Should Fran use a 3 L jar or a 4 L jar to mix the punch? Explain.

4. Find the volume and the capacity of the aquarium. Include the units.
   Volume = ______________________
   = ____________
   Capacity = ____________

5. Circle the measurement that fills the blank best.
   a) Each pill contains about _____ of vitamins. 500 mg 500 g 500 kg
   b) A banana weighs about ____. 120 mg 120 g 120 kg
   c) A five-dollar bill weighs _____. 930 mg 930 g 930 kg
   d) A computer chair weighs about _____. 20 mg 20 g 20 kg
Unit 14: Measurement

Quiz (Lessons 20–24) — ON

1.  a) 2300 mL  
   b) 450 mL  
   c) 1070 mL  
   d) 10 500 mL  
   e) 8 mL  
   f) 20 060 mL

2.  a) 2,450  
   b) 3,40  
   c) 0,750  
   d) 2,65  
   e) 4,8

   **BONUS**
   90,40

3.  970 + 250 + 330 + 1500  
    = 3050 mL  
    = 3 L 50 mL  
    Fran should use the 4 L jar.

4.  40 × 30 × 20  
    24 000 cm³  
    24 000 mL or 24 L

5.  Circle the following:  
   a) 500 mg  
   b) 120 g  
   c) 930 mg  
   d) 20 kg
1. Write an addition equation to find the perimeter of the swimming pool. Include the units.

   a) \[ \text{Perimeter} = 7 \text{ m} + 4 \text{ m} + 7 \text{ m} + 4 \text{ m} \]

   b) \[ \text{Perimeter} = 3 \text{ m} + 1 \text{ m} + 3 \text{ m} + 2 \text{ m} \]

2. Find the missing sides. (The pictures are not drawn to scale.)

   a) Perimeter = 16 cm

   \[ \text{Perimeter} = 3 \text{ cm} + \_ \text{ cm} + \_ \text{ cm} \]

   BONUS: Perimeter = 36 m

   b) Perimeter = 12 m

   \[ \text{Perimeter} = \_ \text{ cm} + 2 \text{ m} + \_ \text{ m} \]

3. Write an equation for the area of the rectangle. Then find the unknown length.

   a) Width = 3 cm

   \[ \text{Length} = \ell \text{ cm} \]

   \[ \text{Area} = 27 \text{ cm}^2 \]

   BONUS: Width = 10 m

   \[ \text{Length} = \ell \text{ m} \]

   \[ \text{Area} = 46 \text{ m}^2 \]

4. Find the length and the area of the rectangle. Include the units.

   a) Width = 2 cm   Perimeter = 14 cm

   \[ \text{Length} = \_ \text{ cm} \]

   \[ \text{Area} = \_ \text{ cm}^2 \]

   b) Width = 4 cm   Perimeter = 20 cm

   \[ \text{Length} = \_ \text{ cm} \]

   \[ \text{Area} = \_ \text{ cm}^2 \]
5. a) Draw two rectangles that have the same perimeter but different areas.

b) Mike thinks that a rectangle with a larger area than another rectangle will also always have a larger perimeter. Is he correct? Explain.

BONUS ► The length of a square field is about 5 cars. A car is about 4 m long.

a) About how many metres long is the field? ________

b) What is the perimeter of the field? about ________

6. Find the volume of the object made from unit cubes. Include the units.

a) Volume = __________________

b) Volume = __________________

7. Find the volume of the prism.

a) Length = ______
   Width = ______
   Height = ______
   Volume = ______________ = ________

b) Length = ______
   Width = ______
   Height = ______
   Volume = ______________ = ________
8. Find the volume and the capacity of the aquarium. Include the units.

a) Volume = ____________
   = ____________
   Capacity = ____________

b) Volume = ____________
   = ____________
   Capacity = ____________

9. The volume of the prism is 42 m$^3$. What is the length of the prism?

10. An aquarium has a length of 40 cm and a width of 25 cm. The water in the aquarium is 10 cm high. How much water is in the aquarium?

**BONUS** ▶ Dory added 4 L of water to the aquarium. What is the new height of the water in the aquarium?

11. Find the volume of the prism. Include the units.

a) Volume = ____________

b) Volume = ____________

12. Which two units of length are related in the same way as grams and kilograms? Explain.

13. A box contains 200 bags of spices. Each bag weighs about 30 g. What is the total mass of spices in kilograms? Show your work.
1. a) \[4 + 7 + 4 + 7 = 22 \text{ m}\]
   b) \[3 + 3 + 1 + 3 + 2 + 6 = 18 \text{ m}\]

2. a) 5, 5
   b) 4, 4
   **BONUS**

   10

3. a) \[3 \times \ell = 27 \text{ cm}^3\]
   \[\ell = 27 \div 3 = 9 \text{ cm}\]
   b) \[10 \times \ell = 46 \text{ m}^2\]
   \[\ell = 46 \div 10 = 4.6 \text{ m}\]

4. a) 5 cm
   10 cm
   b) 6 cm
   24 cm

5. a) Sample rectangles: 4 \times 1 and 3 \times 2
   b) He is not correct.
   Sample explanation: A 4 \times 1 rectangle and a 3 \times 2 rectangle have the same area but different perimeters.
   **BONUS**

   a) 20 m
   b) 80 m

6. a) 12 cm³
   b) 24 m³

7. a) 2 cm
   3 cm
   5 cm
   \[2 \times 3 \times 5 = 30 \text{ cm}^3\]
   b) 11 m
   5 m
   6 m
   \[11 \times 5 \times 6 = 330 \text{ m}^3\]

8. a) \[50 \times 20 \times 20 = 20000 \text{ cm}^3\]
   \[20000 \text{ mL or } 20 \text{ L}\]
   b) \[30 \times 30 \times 60 = 54000 \text{ cm}^3\]
   \[54000 \text{ mL or } 54 \text{ L}\]

9. \[2 \times 3 \times \ell = 42\]
   \[\ell = 42 \div 6 = 7 \text{ m}\]

10. \[40 \times 25 \times 10 = 10000 \text{ cm}^3\]
    There is 10 000 mL or 10 L of water in the aquarium.
    **BONUS**

    The total amount of the water is now 14 L, so the height is now 14 cm.

   a) \[12 \text{ cm}^3 \times 3 = 36 \text{ cm}^3\]
   b) \[22 \text{ mm}^2 \times 5 = 110 \text{ mm}^3\]

12. Metres and kilometres.
   Sample explanation: There are 1000 metres in a kilometre, just like there are 1000 grams in a kilogram.

13. \[30 \text{ g} \times 200 = 6000 \text{ g} = 6 \text{ kg}\]
    The total mass of spices is 6 kg.
1. Write the number of outcomes for the event.
   a) spinning A ______
   b) spinning B ______
   c) spinning D ______
   d) spinning a letter in “CANADA” ______
   e) spinning one of the first four letters of the alphabet ______

2. You are rolling a regular die with numbers from 1 to 6. Fill in the table. Write the probability as a fraction with the smallest numbers possible.

<table>
<thead>
<tr>
<th>Event</th>
<th>Number of Outcomes</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Rolling a 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Not rolling a 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Rolling an odd number</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. a) If you spin the spinner 6 times, how many times do you expect it to land on each colour?
   yellow ______ blue ______ red ______
   b) If you spin the spinner 12 times, how many times do you expect it to land on each colour?
   yellow ______ blue ______ red ______

BONUS ► If John spins the spinner 30 times, which tally chart is he most likely to get? ______
Unit 15: Probability and Data Management

Quiz (Lessons 9, 12–15) — ON

1. a) 2  
   b) 1  
   c) 0  
   d) 3  
   e) 4  

2. a) \( \frac{1}{6} \)  
   b) \( \frac{5}{6} \)  
   c) \( \frac{3}{6} = \frac{1}{2} \)  

3. a) 1, 2, 3  
   b) 2, 4, 6  
   BONUS  
   B
1. How many outcomes are there in total? How many blue outcomes are there?
   a) ______ outcomes
   ______ blue outcomes
   b) ______ outcomes
   ______ blue outcomes

2. a) You are rolling a regular die with numbers from 1 to 6. Fill in the table. Write the probability as a fraction with the smallest numbers possible.

<table>
<thead>
<tr>
<th>Event</th>
<th>Number of Outcomes</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Rolling a 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii) Not rolling a 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii) Rolling an even number</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   b) If you roll the die 30 times, how many times do you expect to …
   i) roll a 1? ______
   BONUS ► roll a 3 or 6? ______

3. a) How many times do you expect grey when you spin the spinner …
   i) 5 times? ______
   ii) 10 times? ______
   iii) 15 times? ______

   b) How many times do you expect white when you spin the spinner …
   i) 5 times? ______
   ii) 10 times? ______
   iii) 15 times? ______

   c) Is there an equal chance of landing on white or grey? ______

   BONUS ► If you spin the spinner 30 times, which tally chart are you most likely to get? ______
4. Write numbers on the spinner for the given probability.

a) The probability of spinning a 2 or 3 is \( \frac{3}{5} \).

b) The probability of spinning an odd number is \( \frac{1}{2} \).

5. Alice and Liz play a game with a die. If they roll 2 or 5, Alice wins. If they roll 3 or 6, Liz wins.

Is the game fair? ______ Explain. ____________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
Unit 15: Probability and Data Management

Test (Lessons 9, 12–15) — ON

1. a) 6
   b) 5

2. a) i) $\frac{1}{6}$
   ii) $\frac{5}{6}$
   iii) $\frac{3}{6} = \frac{1}{2}$
   b) i) 5

BONUS
   10

3. a) i) 2
   ii) 4
   iii) 6
   b) i) 3
   ii) 6
   iii) 9
   c) no

BONUS
   C

4. Answers will vary.
   Sample answers:
   a) 
   b) 

5. yes
   Alice and Liz have the same probability of winning $\left( \frac{2}{6} = \frac{1}{3} \right)$. 