

## NUMBER

**General Outcome**  
*Develop number sense.*

4.N.1. Represent and describe whole numbers to 10 000, pictorially and symbolically.  
 [C, CN, V]

4.N.2. Compare and order numbers to 10 000.  
 [C, CN]

4.N.3. Demonstrate an understanding of addition of numbers with answers to 10 000 and their corresponding subtractions (limited to 3- and 4-digit numerals), concretely, pictorially, and symbolically, by

- using personal strategies
- using the standard algorithms
- estimating sums and differences
- solving problems

[C, CN, ME, PS, R]

4.N.4. Explain the properties of 0 and 1 for multiplication, and the property of 1 for division.  
 [C, CN, R]

4.N.5. Describe and apply mental mathematics strategies such as

- skip-counting from a known fact
- using halving/doubling
- using doubling and adding one more group
- using patterns in the 9s facts
- using repeated doubling to develop an understanding of basic multiplication facts to  $9 \times 9$  and related division facts.

[C, CN, ME, PS, R]

Recall of the multiplication and related division facts up to  $5 \times 5$  is expected by the end of Grade 4.

4.N.6. Demonstrate an understanding of multiplication (2- or 3-digit numerals by 1-digit numerals) to solve problems by

- using personal strategies for multiplication with and without concrete materials
- using arrays to represent multiplication
- connecting concrete representations to symbolic representations
- estimating products

[C, CN, ME, PS, R, V]

4.N.7. Demonstrate an understanding of division (1-digit divisor and up to 2-digit dividend) to solve problems by

- using personal strategies for dividing with and without concrete materials
- estimating quotients
- relating division to multiplication

[C, CN, ME, PS, R, V]

4.N.8. Demonstrate an understanding of fractions less than or equal to one by using concrete and pictorial representations to

- name and record fractions for the parts of a whole or a set
- compare and order fractions
- model and explain that for different wholes, two identical fractions may not represent the same quantity
- provide examples of where fractions are used

[C, CN, PS, R, V]

4.N.9. Describe and represent decimals (tenths and hundredths) concretely, pictorially, and symbolically.  
 [C, CN, R, V]

4.N.10. Relate decimals to fractions (to hundredths).  
 [CN, R, V]

4.N.11. Demonstrate an understanding of addition and subtraction of decimals (limited to hundredths) by

- using compatible numbers
- estimating sums and differences
- using mental math strategies to solve problems.

[C, ME, PS, R, V]

## PATTERNS AND RELATIONS

**General Outcome**  
*Use patterns to describe the world and solve problems.*

4.PR.1. Identify and describe patterns found in tables and charts, including a multiplication chart.  
 [C, CN, PS, V]

4.PR.2. Reproduce a pattern shown in a table or chart using concrete materials.  
 [C, CN, V]

4.PR.3. Represent and describe patterns and relationships using charts and tables to solve problems.  
 [C, CN, PS, R, V]

4.PR.4. Identify and explain mathematical relationships using charts and diagrams to solve problems.  
 [CN, PS, R, V]

**General Outcome**  
*Represent algebraic expressions in multiple ways.*

4.PR.5. Express a problem as an equation in which a symbol is used to represent an unknown number.  
 [CN, PS, R]

4.PR.6. Solve one-step equations involving a symbol to represent an unknown number.  
 [C, CN, PS, R, V]

## SHAPE AND SPACE

**General Outcome**  
*Use direct or indirect measurement to solve problems.*

4.SS.1. Read and record time using digital and analog clocks, including 24-hour clocks.  
 [C, CN, V]

4.SS.2. Read and record calendar dates in a variety of formats.  
 [C, V]

4.SS.3. Demonstrate an understanding of area of regular and irregular 2-D shapes by

- recognizing that area is measured in square units
- selecting and justifying referents for the units  $\text{cm}^2$  or  $\text{m}^2$
- estimating area by using referents for  $\text{cm}^2$  or  $\text{m}^2$
- determining and recording area ( $\text{cm}^2$  or  $\text{m}^2$ )
- constructing different rectangles for a given area ( $\text{cm}^2$  or  $\text{m}^2$ ) in order to demonstrate that many rectangles may have the same area.

[C, CN, ME, PS, R, V]

**General Outcome**  
*Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.*

4.SS.4. Solve problems involving 2-D shapes and 3-D objects.  
 [C, CN, PS, R, V]

4.SS.5. Describe and construct rectangular and triangular prisms.  
 [C, CN, R, V]

**General Outcome**  
*Describe and analyze position and motion of objects and shapes.*

4.SS.6. Demonstrate an understanding of line symmetry by

- identifying symmetrical 2-D shapes
- creating symmetrical 2-D shapes
- drawing one or more lines of symmetry in a 2-D shape

[C, CN, V]

## STATISTICS AND PROBABILITY

**General Outcome**  
*Collect, display, and analyze data to solve problems.*

4.SP.1. Demonstrate an understanding of many-to-one correspondence.  
 [C, R, T, V]

4.SP.2. Construct and interpret pictographs and bar graphs involving many-to-one correspondence to draw conclusions.  
 [C, PS, R, V]