

READY FOR THE NEW MATH CURRICULUM?

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FINANCIAL LITERACY UNITS



CURRICULAR COMPETENCIES



ABORIGINAL APPLICATIONS



grades 4 to 9



practice questions



guided examples



unit tests

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NEW FOR THE 2016 BC MATH CURRICULUM

- All new resources that are directly aligned with the new BC Math Curriculum for 2016
- Each grade (from 4 to 9) includes special units on Financial Literacy and Curriculum Competencies
- Special Aboriginal Applications are included for each unit within each grade
- Lots of guided examples and practice questions to help ensure full understanding of the topics

HAVE QUESTIONS?

WE WOULD LOVE TO HEAR FROM YOU!

1-866-888-8967

CHECK OUT SOME SAMPLES



FINANCIAL LITERACY

4.1 Our Money System

- Money is often referred to as **currency** and currency is made up of coins and banknotes. Coins and banknotes have different values and these values are called **denominations**. A listing of the denominations in the Canadian money system is next.

Denominations of Money

- Several denominations of coins and bills make up our money system. Coins, for example, consist of nickels, dimes, toonies. A picture of each is shown below.

1 nickel = 5¢



1 dime = 10¢



1 loonie = \$1



1 toonie = \$2



Dollar denominations include the following.

\$5 dollar bill

\$10 dollar bill

UNIT 4

FINANCIAL LITERACY

4.1 Our Money System

4.2 Purchasing Goods and Making Change

4.3 Making Money Decisions

9.4 Savings and Interest

- Interest** is money that is paid for the use of your money. If money is borrowed, interest has to be paid to the lender, either an institution like a bank, credit union or an individual. If money is saved in a savings account, interest is paid to the holder of the account for the use of it by the bank.

The formula to calculate "simple interest" is given by:

$$I = P \times R \times T \quad \text{where } I = \text{amount of interest}$$

$$P = \text{principal (amount borrowed or lent)}$$

$$R = \text{rate of interest per year}$$

$$T = \text{time in years}$$

Example 1 Find the simple interest on \$3000 invested for 2 years @ a rate of

$$\text{Solution: } I = P \times R \times T$$

$$= 3000 \times 6\% \times 2$$

$$= 3000 \times 0.06 \times 2 = \$300$$

The simple interest is \$300.

Example 2 Find the simple interest on \$500 invested for 6 months @ a rate of 7 1/2 %

$$\text{Solution: } I = P \times R \times T$$

$$= 500 \times 0.075 \times 0.5 \text{ (6 months is } \frac{1}{2} \text{ or 0.5 of a year)} = \$18.75$$

The simple interest is \$18.75.

- Compound interest** is interest on your interest. When interest is added to the principal that is in an account, it also earns interest. Interest can be compounded annually (once a year), semi-annually (twice a year or every 6 months), quarterly (four times a year or every 3 months), or even daily.

Example 3 Find the amount in an account after one year if \$2000 is compounded semi-annually at a rate of 7%.

Solution: Find the interest after the first payment period (6 months, $t = \frac{1}{2}$)

$$I = P \times R \times T$$

$$= \$2000 \times 7\% \times \frac{1}{2} = 2000 \times 0.07 \times 0.5 = \$70$$

This interest is now added to the principal \$2000 + \$70 = \$2070 for the second period. (6 months, semiannually, $t = \frac{1}{2}$)

$$I = P \times R \times T$$

$$= \$2070 \times 7\% \times \frac{1}{2} = 2070 \times 0.07 \times \frac{1}{2}$$

$$I = \$72.45$$

3.1 Money Calculations and Change

- Last year you worked with the **addition and subtraction of decimals** to solve money problems. Now this year you will be able to include the **multiplication and division of decimals** to your tool kit for solving money problems. First, let's review some money questions involving the **addition and subtraction of decimals**.

Money Problems Involving the Addition and Subtraction of Decimals

Question	Solution
<p>1. If .65 ch</p> <p>Total cost = $7.80 + 1.75 = 9.55$</p> <p>Maurice spent \$9.55.</p>	
<p>2. If .65 ch</p> <p>Total cost = $20.65 + 11.85 = \\$32.50$</p> <p>Difference $40.00 - 32.50 = 7.50$</p> <p>Maureen had \$7.50 left.</p>	
<p>3. If .65 ch</p> <p>Total cost of purchases</p> <p>$1.75 + 0.25 + 1.80 + 2.25 + 0.65 = \\6.70</p> <p>Difference $20.00 - 6.70 = 13.30$</p> <p>Jason should receive \$13.30 in change.</p>	
<p>4. If .65 ch</p> <p>Milk \$0.25</p> <p>shake \$1.80</p> <p>Bus ticket \$2.25</p> <p>Gum \$0.65</p>	

3.2 Planning and Budgeting

A Budget

- A **budget** is a plan for spending your money. It contains a set of guidelines which shows how much you have available to spend in major areas. A budget will help you to avoid spending more money than you bring in. If you spend more than you have it will result in going into debt.

Fixed and Variable Costs

- A budget includes both **fixed costs** and **variable costs**. Certain expenses such as rent, car payments and insurance are fixed. These types of costs which are the same each month are called **fixed costs**. Costs for food, clothing and recreational expenses can be different from one time to another. These are called **variable costs**.
- While it is important for you to have a budget, it is even more important for families because of the many types of expenses they need to deal with. It is important for the budget to have a section for savings or unexpected costs. In this way the family will be able to cope when it encounters unexpected expenses.

Surplus and Deficit

- If you bring in more money than you spend, this amount is called a **surplus**. On the other hand, if you spend more than you bring in, it is called a **deficit**.
- You should plan a budget so that you always have a surplus for unexpected expenses or for savings.

Example

A family had the following costs for the year: Rent \$16 500, Food \$4122, Entertainment \$1250, Gifts \$840, Car Payments \$3545, Utilities \$3320, Other \$1240.

- Classify the costs as fixed or variable and show them in a table.
- If the family income was \$29 500 did they have a surplus or a deficit?

Fixed Costs	Variable Costs
Rent \$16 500	Food \$4122
Car Payments \$3545	Entertainment \$1250
	Gifts \$840
	Utilities \$3320
	Other \$1240

- The expenses total \$30 817 and the family income was \$29 500. Since income was less than expenses the family ran a deficit. The amount of the deficit was \$1317. If the income remains the same the following year, some of the variable costs should be reduced.

APPLYING CURRICULAR COMPETENCIES

9.1 COMMUNICATING

9.2 REPRESENTING

- Representations of ideas that look at mathematical : the use of drawings, physical models, equations, cha: important to be able to use or do the following:
 - drawings to highlight various features of problems
 - physical models to represent and understand ideas and place value.
 - equations, charts, and graphs to model and solve pr
 - describe in words or with a picture the important fe when they translate aspects of a problem into an eq
 - display data using cha

- Among the questions ab should explore in this ar

“Is a number that is d all of its factors? Is it answer.”

“Can you use the exp question simpler?”

“Can you show perce

“Write an equation t of a number.”

“Can you use a 12 ho

- Several examples of co are shown next. They

- Communicating is the process of expressing mathematical ideas and understanding orally, visually and in writing. This is done by using numbers, symbols, pictures, graphs, diagrams and words.

- It is important that you are able to **communicate** to express, describe, explain and apply mathematical ideas in several different ways. Using this as a tool should help you in describing, creating and interpreting relationships.

- Keep in mind the following questions related to this competency in Grade 5 mathematics.

- “Can you ...
- write a word number for a numeral? What is the difference between these terms?”
 - express a numeral using expanded notation?”
 - describe the difference between an improper and a proper fraction?”

o you?”
?”

slide, a turn, and a flip?”

ons?”,
; and objects?”
ise to solve this question?”
tions and decimals?”

on several curriculum content areas are
tions that you should try.

UNIT 9 GRADE 7

APPLYING

CURRICULAR COMPETENCIES

9.1 Communicating

9.2 Representing

9.3 Connecting

9.4 Reasoning

10.4 Reasoning

- Reasoning involves an understanding about numbers, shapes, or operations. It could be undertaking this application you will make skills. Reasoning is needed when

- first encountering a new challenge.
- logical thinking is required.
- a range of starting points is possible.
- there are different strategies to solve a problem.
- there is missing information.
- selecting a problem-solving skill.

- When selecting a **problem-solving** skill consider one or more of the following approaches.

- working systematically
- trial and improvement
- logical reasoning
- identifying patterns
- visualising
- working backwards
- conjecturing

- Among the Reasoning questions about mathematical ideas and processes the should be able to answer at Grade 8 include the following:

“Is there enough information to solve this problem?”

“Can you work backwards to solve a problem?”

“Can you use trial and error to find combinations of numbers that certain conditions?”

“What pattern is evident in the information given?”

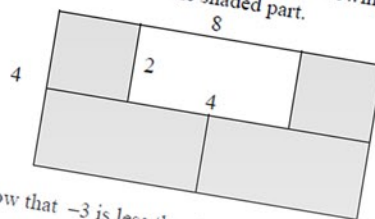
“What values could replace the unknowns and still form a relat

“What relationships exist that are needed to solve the problem?”

Several examples of reasoning from several curriculum content areas are shown next. They are followed by questions that you should try.

Examples with Solutions

- Describe how you would use the following diagram to find the area of the shaded part.



- Show that -3 is less than 2 using a number line.

Solution

Find the area of the large rectangle and the area of the unshaded part. Next, subtract the unshaded area from the total area.

Area large rectangle $8 \times 4 = 32$

Area unshaded part $2 \times 4 = 8$

Area shaded part $32 - 8 = 24$

Solution

$-5 -4 -3 -2 -1 0 1 2 3 4 5$
Since -3 is to the left of 2 it is less than 2 .

Solution

$\frac{1.26}{3} = \frac{x}{8}$; $x = 3.36$

It would cost $\$3.36$ for 8 oranges.

Solution

ABORIGINAL APPLICATIONS

ABORIGINAL APPLICATIONS

THE POTLACH



Talking Stick



BT Collection

The Potlatch is a feast in which gifts are given out to celebrate a wedding, commemorate a death in a family, or for custom adoptions into a family. Gifts are frequently passed on from one person or family to another. The status of a family hosting a Potlatch is raised by the gifts that are given out.

Ceremonies at a Potlatch include songs and dances.

Since they are frequently held in the winter months...

ABORIGINAL APPLICATIONS

THE KILLER WHALE



Artist: T. Isaac



The Killer Whale is also referred to as the Orca Whale and sometimes as the Blackfish. It hunts in pods consisting of family groups of up to 40 individuals. Males can have a mass (weight) of more than 9 000 kilograms and their dorsal fins can be taller than 2 metres. This animal is the largest of the Dolphin family and features strongly in the mythologies of Aboriginal people on the West Coast of Canada.

ABORIGINAL APPLICATIONS

THE WOLF



Artist: T. Isaac

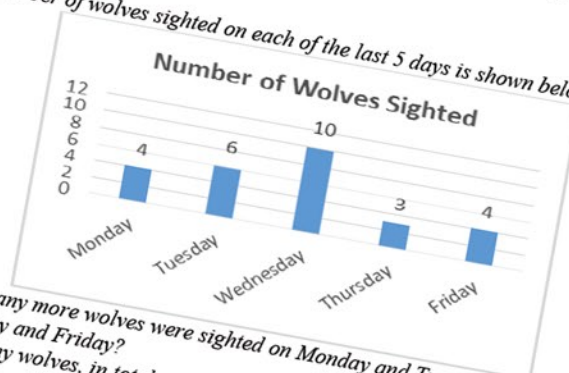


Wolves are major figures in the mythology of Aboriginal people. The Wolf is associated with courage, strength, loyalty, and success at hunting. Similar to bears, wolves are often considered closely related to humans.

The Wolf's symbol signifies strength and endurance, linked with intelligence and family values. It is associated with new thoughts and wisdom, combined with loyalty and courage. Wolves are team players and represent strength in relationships.

Math Applications

The number of wolves sighted on each of the last 5 days is shown below.



- How many more wolves were sighted on Monday and Tuesday than on Thursday and Friday?
- How many wolves, in total, were sighted over the 5 days?

Answers
1. 3 2. 27

ABORIGINAL APPLICATIONS

THE MOON



Artist: T. Isaac



Aboriginal people view the moon as the protector of the earth and of life. It is a symbol of power and often used to show esteem or respect.

The Moon forms the basis for Aboriginal calendars. Different time periods are closely linked to nature and reflect events that occur with the seasons and the phases of life. There are 13 moons in a typical lunar year compared to 12 months in the western calendar year. There are 7 full moons to the next.

Math Applications

- How many moons are there in 4 lunar calendar years?
- How many days are there between two full moons?

Answers

1. $4 \times 13 = 52$
There are 52 moons in 4 lunar years.

2. $2 \times 28 = 56$
There are 56 days between two full moons.