


# Grade 5 Learning Advantage



100% Canadian content...

aligned with school curriculum


**Learning Advantage**  
Preparing for success



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Parent-friendly... List of curriculum expectations

## Overall Curriculum Expectations for Grade Five

### SCIENCE AND TECHNOLOGY

#### Structure and Mechanisms

- analyse social and environmental impacts of forces acting on structures and mechanisms;
- investigate forces that act on structures and mechanisms;
- identify forces that act on and within structures and mechanisms, and describe the effects of these forces on structures and mechanisms.
- evaluate the social and environmental impacts of processes used to make everyday products;
- conduct investigations that explore the properties of matter and changes in matter;
- demonstrate an understanding of the properties of matter, changes of state, and physical and chemical change.

#### Energy and Resources

- analyse the immediate and long-term effects of energy and resource use on society and the environment, and evaluate options for conserving energy and resources;
- investigate energy transformation and conservation;
- demonstrate an understanding of the various forms and sources of energy and the ways in which energy can be transformed and conserved.

#### Properties of and Changes in Matter

- demonstrate an understanding of the three states of matter and of changes in state;
- investigate common changes of state (e.g., melting, freezing, condensing, evaporating)






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100% Canadian content... Canadian measurements

## At The Store

**Make your choices from this list of prices:**

(For some products, you may not be able to buy exactly the amount that you need.)

**Milk:** \$4.07 for a 4-L jug of 2% milk  
\$2.75 for a 2L carton of 2% milk




**Meat:** \$9.90 for 1 kg (You can buy as much as you need)  
\$7.95 for 12 pre-made 100 g patties

**Buns:** \$1.99 for 1 package of 12 buns  
\$1.69 for 1 package of 6 buns

**Chips:** \$0.29 per 15g bag  
\$1.79 per 250g bag

**Apples:** \$3.48 for a bag of 10  
\$0.33 each for single apples

**Peaches:** \$8.00 for a basket of 20






Use this space to calculate how much it will cost to get all you need for the lunch at the best possible price.

Milk	Meat	Buns	Chips	Apples	Peaches

"A penny saved is a penny earned."  
*Ben Franklin*

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100% Canadian content...

Canadian Social Studies

## The Government of Canada

Locate each of the following government departments in the phone book, see if you can find those departments on the internet, and name a federal government responsibility in that area.

1. Health Canada \_\_\_\_\_  
\_\_\_\_\_
2. Child and Family Benefits and Services \_\_\_\_\_  
\_\_\_\_\_
3. Natural Resources \_\_\_\_\_



### Prime Minister

The **Prime Minister** is the head of the federal government.

Who is the current Prime Minister of Canada? \_\_\_\_\_

Where is the residence of the Prime Minister? \_\_\_\_\_



### Members of Parliament (MP's)

There are 305 members in the parliament of Canada. The area that you live in has a representative in the Canadian parliament, who was elected in the last election. MP's for your area are listed by name in the phone book. Use your **blue pages** again. Find the section "**Members of Parliament**."

Who is your Member of Parliament? \_\_\_\_\_

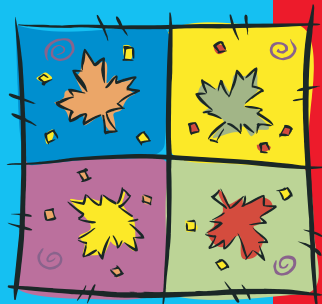
Canada has a formal **head of state**. The king or queen of England is also the king or queen of Canada.

What is the name of Canada's formal head of state? \_\_\_\_\_

The queen or king has a representative who lives in Canada, the Governor General.

Who is the **Governor General** of Canada. \_\_\_\_\_

What is the name of the Governor General's home in Ottawa? \_\_\_\_\_





# Grade 5

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Uses current educational theory...  
integrated learning (Health/ math skills)

### Burn Those Calories



A calorie is a unit we use to measure how much energy comes into our body in the food we eat. We burn off those calories, just by growing, but also by exercise. People who always take in more calories than they burn off may become obese. The labels on food products often tell us how many calories there are in each serving. Read the nutrition label for five different foods, and record the amount of calories for each serving that is indicated.

Food	Calories (per serving)

Did you know that during a simple task such as breathing or reading you actually burn off some of the calories that you gain by eating these foods?

Read the chart below to see how many calories you burn off per hour and per minute during certain activities.

Activity	Rate of Calories Burned (per hour)	Rate of Calories Burned (per minute)
Breathing, reading, watching a movie	90-100	1.5
getting dressed, taking a shower	140-150	2.4
walking, doing chores	200-210	3.4
playing a sport	300-350	5.2



# Grade 5 Learning Advantage



Uses current educational theory...  
tactile learning activities

## Experiment #2: Changes of State

Be sure that you have permission from an adult to try this experiment.  
Hot liquids are involved.

This experiment takes many days to complete!



### Changes of State

#### WHAT YOU NEED!

- 500 ml (2 cups) of sugar
- 250 ml (1 cup) of water
- tall, thin glass jar (canning jar, olive jar)
- 15 cm piece of string
- pencil
- paper clip or small nail
- saucepan (optional)
- microwave or stove

#### WHAT TO DO!

1. Tie the string to the middle of the pencil.
2. Tie the paper clip to the end of the string. (It's just a weight to keep the string from floating.)
3. Lay the pencil across the top of the jar, so the string hangs down without touching the sides or bottom of the jar. (Roll up the string on the pencil if necessary.)
4. Now take the pencil and string out of the jar and set them aside.



**Get an adult to help you with the next step.**

5. Pour the water into the jar and bring it to a boil in the microwave (or use a saucepan on the stove). **Be very careful when handling the jar or pot of boiling water!**
6. Stir in about 50 ml of sugar, until it dissolves completely.
7. Add more sugar a bit at a time, each time stirring until it dissolves. You can re-heat the water as often as you need, but you have to be patient and keep stirring until the sugar disappears each time.
8. When all the sugar has been dissolved in the water, ask the adult to pour it into the jar (if it's not in the jar already).
9. Now replace the pencil, string and paper clip, hanging down inside the jar, submerged in the water.
10. Let the water cool, and put it somewhere safe where you can observe the changes for a few weeks.




# Grade 5 Learning Advantage




Uses current educational theory...  
information provided to engage pupil inquiry

## What's in Your Food?

 When we talked about the digestive system, we said that your food turns into yummy slop in your stomach, and then goes into the small intestine.

The nutrients in your food pass through the wall (or skin) of the intestine into your blood stream, and your blood takes them throughout your body to give you energy, to help you grow, to make sure all your **organs** are working properly, and to heal any injuries you may have suffered.

 Do you know...  
What is the biggest **organ** in the human body?  
Answer below.

If you read the second paragraph above carefully, you might have asked yourself, "What's a nutrient?"


"Nutrient" is the word we use for the good stuff in your food – the part of food that nourishes you and keeps you well.

Sometimes in a commercial you can hear them say, "This product is a source of seven essential nutrients!"

**Find a cereal box, juice container or any other item in your house that says something like that on the label, and see what nutrients are in it.**

On the next pages is a chart about nutrients.

**The largest organ in the human body is your skin!** Its jobs as an organ are to protect what's inside, to keep water out, and keep body moisture in, to help you sense (hot and cold, hard and soft etc.), and to regulate body heat. (When you sweat, your skin is actually cooling you down, because when the sweat evaporates, you feel a bit cooler!) Skin is amazing! And it looks nice too.



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Kid-friendly... Colourful graphics

The cover page for Unit 7, 'Proud to Be Canadian'. At the top is the 'Learning Advantage' logo with a sun icon and the tagline 'Preparing for success'. Below this is the title 'Unit 7' in a large, bold, black font, followed by 'Proud to Be Canadian' in a bold, red font. The central illustration shows a cartoon moose with large antlers, smiling broadly and holding a yellow and red beanie. A speech bubble above the moose says 'O CANADA...'. The background of the illustration includes blue musical notes, purple mountains, and a green patch of grass. At the bottom left, the tagline 'Preparing for success' is repeated. At the bottom right, there is a red maple leaf icon with the number '153' inside it.

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## Unit 7

### Proud to Be Canadian

"O CANADA..."

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# Grade 5 Learning Advantage



Kid-friendly... Guided practice

## Multiplying Decimals

You know that **multiplying is just a fast way of adding**. When the price of something is \$5.00 and you want 7 of them, you can multiply \$5.00 times 7, rather than writing out \$5.00 seven times and adding them up.

In this unit, you are asked to multiply a price, dollars and cents, by a whole number.  
For example,  $\$5.35 \times 3 = \$16.05$   
or  $\$184.15 \times 12 = \$2209.80$



It's probably good to put the numbers you're multiplying under each other, if that's how you usually do multiplication questions.

**Multiply first; put the decimal point in afterwards.**

$$\begin{array}{r} \text{So: } \$5.35 \\ \quad \times 3 \\ \hline 16.05 \end{array} \qquad \begin{array}{r} \$184.15 \\ \quad \times 12 \\ \hline 36830 \\ \underline{184150} \\ \$2209.80 \end{array}$$

The only trick in **multiplying** is to **always show the cents**, and make sure you **put the decimal point in the answer to separate the dollars from the cents**.

Even when you get to more complicated multiplication of decimals, **you must always have the same number of places after the decimal in the answer as you have in the question**.

**Try a few!**

1. $\$99.00 \times 10$	2. $\$69.99 \times 7$	3. $\$20.50 \times 8$

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Kid-friendly... confidence-building activities

## Classifying Matter

In previous grades, you classified things into groups according to shape or colour or other categories. For example, we could classify rocks, trees, bicycles and cats into groups called "living" and "non-living" things.

Matter can also be classified into groups.

Here are nine objects that have matter:

apple oxygen milk vinegar hydrogen helium water computer pencil

See if you can figure out the three classifications of matter, by putting those nine objects into three columns in the table below. We have started each column for you.

A	B	C
apple	milk	oxygen



Did you figure out a good system for classifying matter?

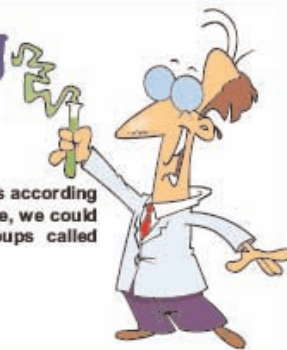
**The scientific terms:**

For column A: solid (apple, computer, pencil)

For column B: liquid (milk, vinegar, water)

For column C: gas (oxygen, hydrogen, helium)

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# Grade 5 Learning Advantage



Kid-friendly...

Challenging activities for inquisitive minds

## Common TM Shorthand

Here is a list of common TM shorthand terms. Try to figure them out before you ask someone (or check the answers on page 191) for help.

TM term	My guess	Common Answer
1. 2nite		
2. BTW		
3. B4N		
4. BCNU		
5. BFF		
6. CU LBR		
7. FWIW		
8. IMHO		
9. ISO		
10. J/K		
11. LYLAS		
12. MHOTY		
13. NIMBY		
14. NUB		
15. OIC		
16. OT		
17. POV		
18. RBTL		
19. ROTFL		
20. RTM		
21. SITD		
22. THX		
23. TLC		
24. TMI		
25. TTYL		
26. TYVM		
27. VBG		
28. WYWH		
29. XOXO		



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Kid-friendly... reasonable drills



## Do You Get it?

It's not that much fun to try a test, but knowing how to handle money will have benefits for the rest of your life!

Try these twelve questions, and check your answers at the back of the book. Use the open space or a separate page for your rough work.

1.  $\$14.13 + \$16.55 =$  \_\_\_\_\_

2.  $\$8.24 + \$29.95 =$  \_\_\_\_\_

3.  $\$29.95 - \$8.24 =$  \_\_\_\_\_

4.  $\$38.19 - \$29.95 =$  \_\_\_\_\_

5.  $\$30.68 - \$16.55 =$  \_\_\_\_\_

6.  $\$12.34 + \$56.78 =$  \_\_\_\_\_

7.  $\$12.34 \times 6 =$  \_\_\_\_\_

8.  $\$9.07 \times 14 =$  \_\_\_\_\_

9.  $\$69.95 \times 10 =$  \_\_\_\_\_

10.  $\$74.04 \div 6 =$  \_\_\_\_\_

11.  $\$126.98 \div 14 =$  \_\_\_\_\_

12.  $\$699.50 \div 5 =$  \_\_\_\_\_



How did you do? \_\_\_\_\_ /12

Whatever your score was, show your work to a parent and talk about what you have learned and what you need to understand decimals better.

P.S. Did you notice anything about number families in some of those questions?



# Grade 5

## Learning Advantage



Kid-friendly... Interesting activities

### YOU ARE THE ENGINEER!

## CREATE YOUR OWN BEAM BRIDGE



#### WHAT YOU NEED!

- 6 books
- 4 sheets of paper
- a lot of coins



#### THE CHALLENGE

Using sheets of paper as the bridge, build a bridge that will support as many coins as possible.

A bridge must support its own weight (the dead load) as well as the weight of anything placed on it, like the coins (the live load). The ends of your bridge must rest on the books and cannot be taped or attached to the books or the table. You may vary the span (the distance between the books) and take notes to see which works best, but the span can't be less than 10 cm.

#### INSTRUCTIONS:

Make 2 equal piles of books, 20 cm apart.

Put 1 piece of paper flat across the books.

Put on pennies until the paper bridge can no longer hold the weight.

Record the number of coins:

Change the span of your bridge (not less than 10 cm). Which span works best? \_\_\_\_\_

What is the difference in the load your bridge can hold if you put the coins in the centre of the bridge, or spread out across the bridge?

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# Grade 5 Learning Advantage



Parent-friendly... Encourages parent involvement

## Parent Tips for Internet Safety

No doubt, as a parent you are well aware of the value of the internet as an important tool for learning. Children can do research, play games and socialize with children from all over the world on the internet. Since this book suggests that students make use of the internet, we offer these safety tips as reminders for responsible parents.

1. Talk with your children about the value and dangers of the internet.

**After discussion, post the following rules near your computer:**

- a) Never give out personal information such as your full name, phone number, address, school, clubs you belong to, etc.
- b) Do not send a picture of yourself unless you have a parent's permission.
- c) Never agree to meet someone you have met on-line unless you have talked to a parent and one of them goes with you, and you meet in a public place.
- d) If you read something that makes you feel uncomfortable, let a parent know right away.
- e) Be courteous and never do or say anything on-line to hurt someone.

2. Children value their privacy, even if the computer is in a "public place" in your home. When chatting with friends on the net, many students use codes such as P911 or PIR (parent in room) or even just the single number 1 to advise their correspondent that a parent is approaching. Don't force them to be sneaky. Negotiate with your children, ask for their cooperation, and trust them to be wise in avoiding danger.

3. Ask them to let you be aware of their internet friends just as you would their neighbourhood friends.



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# Grade 5 Learning Advantage



Parent-friendly... Family follow-up activities

## Follow Up Fun

### Extension Activities

The Ontario Science Centre in Toronto has impressive activities to help your child learn more about the human body. Visit [www.ontariosciencecentre.ca](http://www.ontariosciencecentre.ca) for more details.

Engage in 20-30 minutes of physical activity each day with your child and keep a journal that shows your progress.

### Extra Reading

**The Human Body for Every Kid**  
By Janice P. Vancleave

**How the Body Works**  
By Steve Parker

**101 Things Every Kid Should Know About the Human Body**  
By Beres Samantha

**Where Does My Spaghetti Go When I Eat It?**  
By Neil Morris

**Lintball Leo's Not-So-Stupid Questions About Your Body**  
By Walter Larimore



### Websites

Have your child explore the following websites:

[www.kidshealth.org](http://www.kidshealth.org) The Website of the Nemours Foundation, a subsidiary of the DuPont Corporation.

[www.bbc.co.uk/health/kids/](http://www.bbc.co.uk/health/kids/) A page from website of the British Broadcasting Corporation.

[www.lung.ca](http://www.lung.ca) The website of the Canadian Lung Association. (click on 'Kids Corner')




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# Grade 5 Learning Advantage



Kid-friendly... Activities for classroom sharing



## Make your own Mummy!




### Make your own mummy!

**WHAT YOU NEED!**

- 2 fresh apples
- large box of table salt
- large box of Epsom salts
- large box of baking soda
- knife
- **eight** 400 ml (12 oz) disposable plastic cups


- measuring cup
- large mixing bowl
- permanent marking pen
- roll of masking tape
- food scale that measures small amounts
- piece of graph paper and pencil




### WHAT TO DO!

1. Slice the two apples into quarters so that you have eight slices similar in size.
2. Place a piece of masking tape on each cup and write the words "starting weight."
3. a) Select one slice, weigh it, and record the weight on the outside of cup 1.  
b) Follow the same procedure with the other seven apple slices until each cup has been labeled with the appropriate starting weight of its apple.
4. a) Add exactly 1/2 cup of baking soda to cup 1, making sure to completely cover the apple. Write the words "baking soda only" on the outside label.  
b) Fill cup 2 with 1/2 cup Epsom salts.  
c) Fill cup 3 with 1/2 cup table salt. Make sure you label each cup.  
d) Repeat the same procedure for cups 4-6 using a 50:50 mix of Epsom and table salts in cup 4, 50:50 mix of table salt and baking soda in cup 5, and 50:50 mix of baking soda and Epsom salts in cup 6.

Again, make sure each cup has the correct label.



*More instructions on next page!*



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