ACTIVITY BOOK

PRIMARY LEVEL

maple
FROM QUÉBEC

Table of Contents

Hear ye! Hear ye!

If you answer the questions correctly, good students you must be! And you may proudly wear the title of apprentice maple producers.

WORKBOOK A

Exercise A1

READING

Source material: The Production of Maple Syrup

Learning objectives:
Work on reading comprehension.
Integrate new knowledge.

Tap the Sap

Read the text to discover how maple syrup is produced and then answer the questions.

1. Before reading the text, did you know that the sweetened water dripping out of the sugar maple tree is not water but sap?

   _____ Yes _____ No

2. Write down two things you just learned:

   _____

   _____

3. What is it called when the maple sap rises?

   _____

4. From what age does the maple tree produce enough sap to make maple syrup?

   _____

5. In which month and which season does sap start to circulate in the maple tree?

   _____

WORKBOOK A

Exercise A2

VOCABULARY

Source material: Health and Sport

Learning objectives:
Develop vocabulary.
Tap into what you've learned.

Find the Right Word!

Complete the sentences with the following word bank.

sap • bannock • time • bark • champion • athletes • First Nations people • *coureurs des bois*

The _____ of North America have known about maple sap since the dawn of _____. They healed wounds with boiled _____ and drank the _____ to fortify themselves. The First Nations people even taught the _____ to cook a special pancake, _____, which they could eat when they travelled long distances. Even today, some _____ such as Ariane Lavigne and Hugo Houle use maple to improve performance. There's no doubt that maple is a true _____!

WORKBOOK A

Exercise A3

ECOLOGY

Source material: The Ecosystem and its Flora and Fauna

Learning objectives:
Integrate new vocabulary.
Organize what you've learned.

Flora or Fauna?

Name 3 animals and 3 plants that we find in the sugar bush.

Fauna

1. _____

2. _____

3. _____

Flora

1. _____

2. _____

3. _____

WORKBOOK A

Exercise A4

READING

Source material: The History of Maple Syrup

Learning objectives:
Practice what you've learned.
Know what's true and what's false.

True or False?

Read the text and tick the correct answer.

Jacques Cartier discovered Canada.

_____ True _____ False

First Nations people called the sugar maple tree "cotton."

_____ True _____ False

Before the use of sap spouts, maple trees were notched with an axe.

_____ True _____ False

Maple syrup was invented in 1861.

_____ True _____ False

Maple sap might have been discovered by a squirrel.

_____ True _____ False

Brother Marie-Victorin founded the Olympic Stadium.

_____ True _____ False

WORKBOOK A

Exercise A5

READING

Source material: The Circle of the Seasons

Learning objectives:
Learn the seasons. Link each season to an activity or a description (deduction).

1, 2, 3, 4 Seasons!

Link each season to its description.

WINTER	It's sunny! The entire sugar bush grows and matures with the help of heat and water.
SPRING	Nature slows down and offers a festival of colours: red, yellow and orange.
SUMMER	Shh! Did you see fox and deer tracks in the snow?
FALL	Yum! Maple sugar time has finally come!

WORKBOOK A

Exercise A6

READING

Source material: All the texts

Learning objectives:
Tap into what you've learned.
Make the connections.

Who Does What?

Link each person to his or her work.

Ariane Lavigne

Hugo Houle

Jacques Cartier

Brother Marie-Victorin

Botanist

Explorer

Olympic snowboarder

Cyclist

WORKBOOK A

Exercise A7

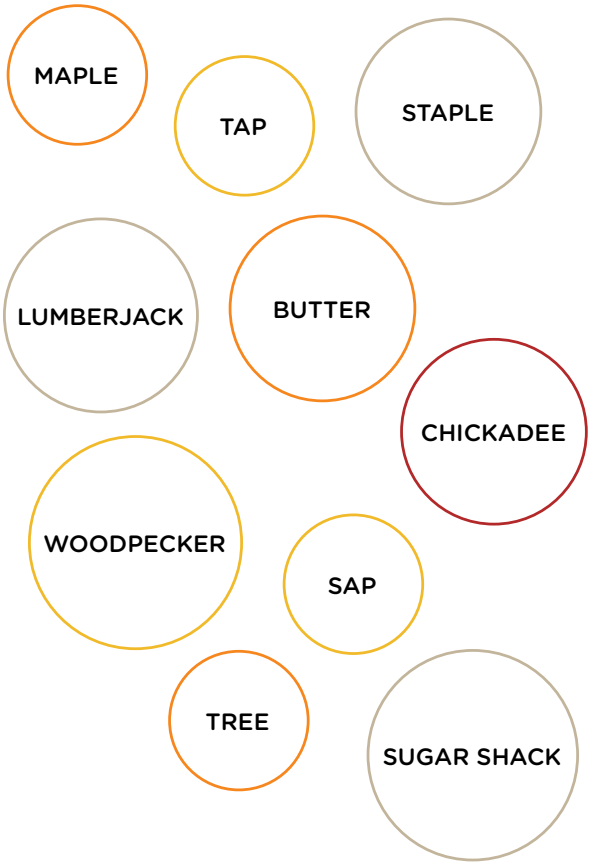
VOCABULARY

Source material: The Circle of the Seasons

Learning objectives:
Practice sounds/rhymes.
Practice new vocabulary.

Time to Rhyme!

Connect words that rhyme.



WORKBOOK A

Exercise A8

MATHEMATICS

Source material: The Production of Maple Syrup

Learning objectives:
Work on how numbers are expressed (written out and in digits).

Does it Add Up?

How many numbers can you find in Chapter 6 of the Encyclopedia of Maple?

PSSt! Look carefully! Some are written out as words and some as digits.

WORKBOOK A

Exercise A9

PHONETICS

Source material: Health and Sport

Learning objectives:
Practice sounds.
Integrate vocabulary.

How does it sound?

Classify the following words according to their sound.

syrup • sap • infusions • energizing • abscess • base • Quebecer • virtues • bark

I hear [s]

- _____
- _____
- _____
- _____

I hear [z]

- _____
- _____
- _____
- _____

I hear [k]

- _____
- _____
- _____
- _____

WORKBOOK A

Exercise A10

VOCABULARY

Source material: The Production of Maple Syrup

Learning objectives:
Work with notions of time and chronology.
Integrate what you've learned.

When does it happen?

Complete the sentences adding the following words:

days • Once • starting • nights • beginning • In the springtime

_____, the maple tree wakes up, and water in its roots starts to rise up. It is the _____ of a fascinating process. For this to happen, it takes warm _____ and cold _____. The sap circulates six to eight weeks _____ in early March. _____ collected, the sap goes to the sugar shack where it is transformed into syrup.

WORKBOOK A

Exercise A11

VOCABULARY

Source material: The Ecosystem and its Flora and Fauna

Learning objectives:
Expand vocabulary.
Practice synonyms.

Brainstorming Session

Tick the right answer.

1. Rainwater helps:
   - ○ cook pasta
   - ○ grow flowers and plants
   - ○ fill the pool

2. The mole is:
   - ○ an insect that bites
   - ○ a car shelter
   - ○ an animal that lives underground

3. Photosynthesis:
   - ○ produces oxygen
   - ○ takes photos
   - ○ changes TV channels

4. Trilliums are:
   - ○ songbirds
   - ○ rare plants
   - ○ porcupine pups

5. Humus is:
   - ○ soil made of decomposing plants
   - ○ a rabbit hole
   - ○ a synonym for human

WORKBOOK A

Exercise A12

MATHEMATICS

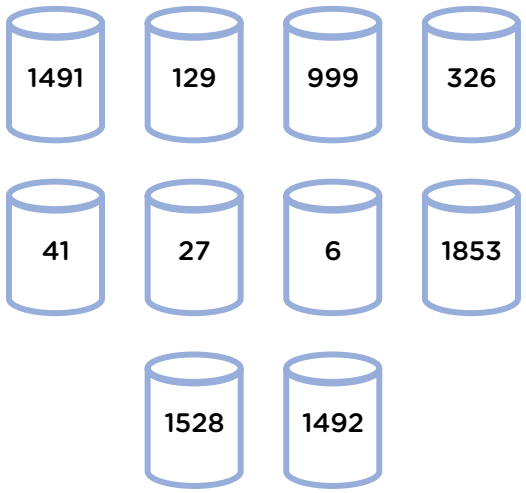
Source material: The History of Maple Syrup

Learning objectives:
Practice problem-solving.
Practice numbers.

Figure it Out!

Follow the steps to reveal the year Jacques Cartier was born.

1. Mark with a cross the cans smaller than 100.
2. Cross out the cans that show an even number.
3. Circle the cans that don't have a figure in the thousands.
4. Mark with a cross the can that has 5 tens, 3 ones, 8 one-hundreds and 1 one-thousand.



WORKBOOK A

Exercise A13

GEOMETRY

Source material: None

Learning objectives:
Develop observation skills and practice adverbs of place.

Put Things in Perspective!

Look at the drawing carefully and complete the sentences with the following expressions or words.

to the left of • to the right of • on • in front of • behind • in • in the middle of

1. Siropcool is waiting for his friends _____ the sugar shack.
2. Mr. Owl is sleeping _____ the roof of the shack.
3. The shack is _____ the sugar bush.
4. The Sugar Fairy is flying _____ the sky.
5. Carl is hiding _____ a tree so he can surprise Siropcool.
6. Squirrel is playing in the snow _____ Siropcool.

WORKBOOK A

Exercise A14

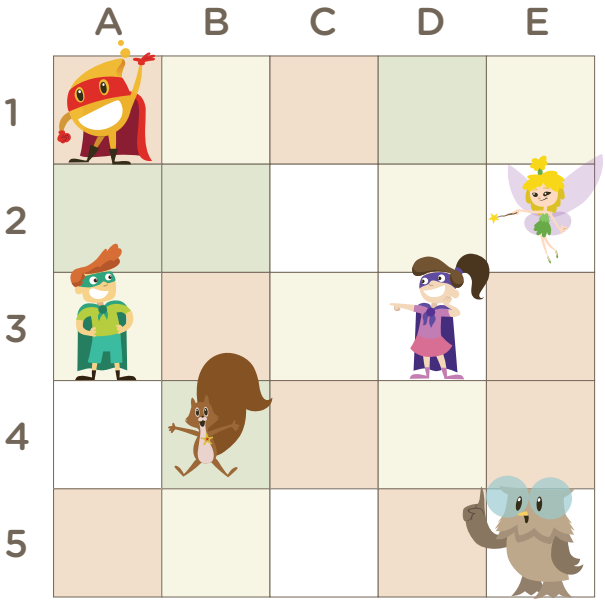
GEOMETRY

Source material: None

Learning objectives:
Practice coordinates.

Find the characters

Study the plan and follow the instructions.



1. Which character is jumping in **Box B,4**?

   _____

2. Draw a drop of syrup in **Box C,5**.
3. Which character is flying in **Box E,2**?

   _____

4. What are Siropcool's coordinates?

   _____

5. What are Simone's coordinates?

   _____

WORKBOOK A

Exercise A15

MEASUREMENTS

Source material: None

Learning objectives:
Practice measurements.
Integrate new vocabulary.

True or False?

Circle your answer.

1. A sugar shack measures more than one centimetre.

   TRUE FALSE

2. Carl uses metres to measure Mr. Owl.

   TRUE FALSE

3. A squirrel can be measured in millimetres.

   TRUE FALSE

4. A maple tree cannot be taller than one metre.

   TRUE FALSE

5. The Sugar Fairy flies at a speed of one millimetre per hour.

   TRUE FALSE

WORKBOOK A

Exercise A16

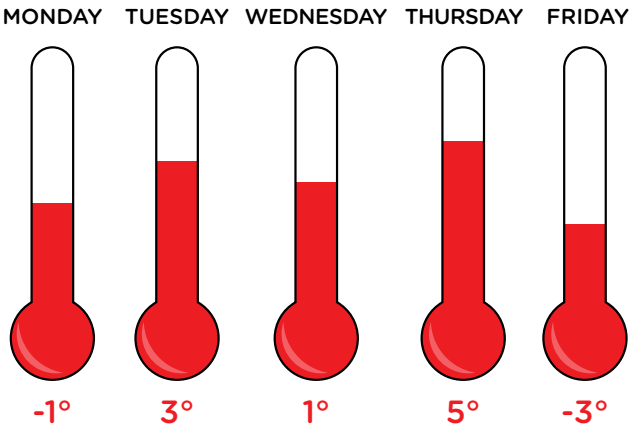
WEATHER

Source material: The Production of Maple Syrup

Learning objectives:
Practice using and reading a thermometer.

Is it Flowing?

Siropcool has read the temperature every day during the week of March 7. Here are the results.



Which days were warm enough to make maple sap flow?

(***PSST!*** Read your text over to remember the minimum and maximum temperatures needed for the sap to flow.)

Your answer:

_____

_____

WORKBOOK

B

Hear ye! Hear ye!

If you answer the questions correctly, good students you must be! And you may proudly wear the title of apprentice maple producers.

WORKBOOK B

Exercise B1

READING

Source material: The Production of Maple Syrup

Learning objectives:
Work on reading comprehension.
Integrate new knowledge.
Practice classes of words.

Tap the Sap

Read the text to discover how maple syrup is produced and then answer the questions.

Before reading the text, did you know that the sweet water dripping out of the sugar maple tree is not water but maple sap? ___ Yes ___ No

1. Write down two things you just learned:

_____

_____

2. From what age does the maple tree produce enough sap to make maple syrup?

_____

3. What is it called when the maple sap rises?

_____

4. In which season does sap start to circulate in the maple tree?

_____

5. Classify the words into the right categories:

water • wakens • evaporator • tiny • wait • vitamins • spring • healthy • collected • syrup • smooth • starch • tree • alternate • warm

COMMON NOUN	VERB	ADJECTIVE

WORKBOOK B

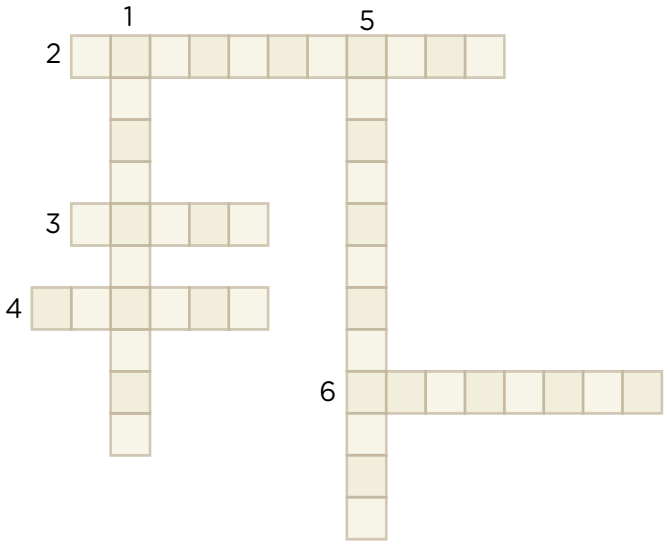
Exercise B2

SPELLING

Source material: The Production of Maple Syrup

Learning objectives:
Integrate new knowledge.
Make connections.

Supercool Crossword



1. I am essential for heating the sap.
2. I must be warm during the day and cold at night.
3. The age of a maple tree that produces enough sap to make syrup.
4. I am hidden in the maple tree's roots.
5. I carry the maple syrup to the shack.
6. I am a small rodent that lives in the trees.

WORKBOOK B

Exercise B3

GRAMMAR

Source material: Health and Sport

Learning objectives:
Work on spelling
and capitals.

Unscramble the Letters

Put the letters into the right order.

apcnhomi

letathes

onckanb

eerponracfm

rrocuuse

WORKBOOK B

Exercise B4

ECOLOGY

Source material: The Ecosystem and its Flora and Fauna

Learning objectives:
Integrate new vocabulary.
Organize what you've learned.

Flora or Fauna?

The sugar bush provides a habitat for a lot of animals, plants and flowers. Put each of the following into the correct column.

Careful! There is an intruder and you must find it!

mole • humus • ginseng • red-backed salamander • ramp (wild garlic) • raccoon • owl • trillium • chipmunk • black-capped chickadee

Fauna	Flora

Intruder:

WORKBOOK B

Exercise B5

PUNCTUATION

Source material: The History of Maple Syrup

Learning objectives:
Work on grammar and punctuation.
Integrate sentence structure.

A Capital Case

Rewrite the following text, adding uppercase letters where they're needed.

according to brother marie-victorin, the celebrated botanist who founded the montreal botanical garden, a squirrel led to the discovery of maple sap's power. Since first nations people passed on their knowledge orally, it is impossible to say if the story is true or if it is simply a legend. did you know that jacques cartier not only discovered canada but that he is also the first european to have written about maple?

WORKBOOK B

Exercise B6

VOCABULARY

Source material: The Maple Producer

Learning objectives:
Work on reading comprehension.
Integrate new vocabulary.

Who am I?

Identify the objects by their description.

I am a little hole in the bark of the tree out of which maple sap drips.

I am a spout inserted through the bark to help maple sap drip out.

I am a metal pail hooked to the maple tree that collects the sap.

I am a tube that connects the maple tree to the sugar shack.

I am a mega-boiler that transforms maple sap into syrup.

I help the maple producer walk on snow in the winter.

WORKBOOK B

Exercise B7

ECOLOGY

Source material: The Circle of the Seasons

Learning objectives:
Tap into what you've learned.
Use what you know (deduction).

The Mystery Creature

Use arrows to connect each creature of the summer forest to the feature that makes it so unique.

I have a black mask, but I am not a thief...

My cousins live in the water, but I prefer the woods.

I am one of the largest owls in the sugar bush.

Unlike the rabbit, I don't dig a burrow.

Don't come too close to me!

Maple trees don't like my beak!

WORKBOOK B

Exercise B8

MATHEMATICS

Source material: The Production of Maple Syrup

Learning objectives:
Develop deduction skills.
Practice numbers.

The Secret is in the Code

The maple syrup recipe is hidden in the safe! Solve the following riddle to discover the code.

- The 1st number is the freezing point.
- The 2nd number is the % of the maple tree's sap that is harvested.
- The 3rd number is the minimum number of weeks that the sap circulates in the tree.
- The 4th number is the maximum temperature that must be reached during the day for the maple sap to climb up the trunk.

Answer: _____

WORKBOOK B

Exercise B9

MATHEMATICS

Source material: The Production of Maple Syrup

Learning objectives:
Develop deduction skills.
Practice numbers.

History in Figures

Complete the following sentences and place the historical dates you found on the timeline below.

Jacques Cartier was the first to have written about maple sap in _____.

Until _____, maple trees were notched with an axe.

It was in _____ that the first meal was served in a Quebec sugar shack.

Preserving maple syrup by canning it began between _____ and 1930.

_____|_____|_____|_____
1500 2000

WORKBOOK
B

Exercise B10

ART

Source material: The Circle of the Seasons

Learning objectives:
Develop creativity.
Familiarize yourself with expressions.

Ready, Set, Colour!

Use your coloured pencils to draw a picture that illustrates each of the following expressions. You can be serious or silly—it's up to you!

FUN IN THE SUN

FESTIVAL OF COLOURS

BLANKET OF SNOW

NATURE IS REBORN

WORKBOOK B

Exercise B11

VOCABULARY

Source material: The History of Maple Syrup

Learning objectives:
Practice antonyms.
Integrate vocabulary.

Friends or Enemies?

Replace the word in brackets with an antonym. Sometimes you will find the answer in the list of words; sometimes you must think of it yourself.

hard • celebrated • bitter • without • earliest • first • sweet • orally

Jacques Cartier is the (last) _____ European to have written about maple sap. Maple sap is not (sweet) _____. Brother Marie-Victorin was a (unknown) _____ botanist. The (latest) _____ inhabitants of Canada made candies with maple sap. Before people began canning it, preserving syrup was (easy) _____. For those with a (bitter) _____ tooth, the sugar shack is a true paradise. A squirrel (full of) _____ energy? Never seen that! Legends often survived for centuries by being passed down (in writing) _____ . One thing is (unsure) _____: children love maple sugar time!

WORKBOOK B

Exercise B12

PHONETICS

Source material: Health and Sports

Learning objectives:
Work on sounds.
Integrate vocabulary.

How does it sound?

Classify the words into the following lists according to the way they sound.

calcium • essential • visits • magnesium • bark • joyous • bannock • virtues • *coureurs*

I hear [s]

- _____
- _____
- _____
- _____

I hear [z]

- _____
- _____
- _____
- _____

I hear [k]

- _____
- _____
- _____
- _____

WORKBOOK B

Exercise B13

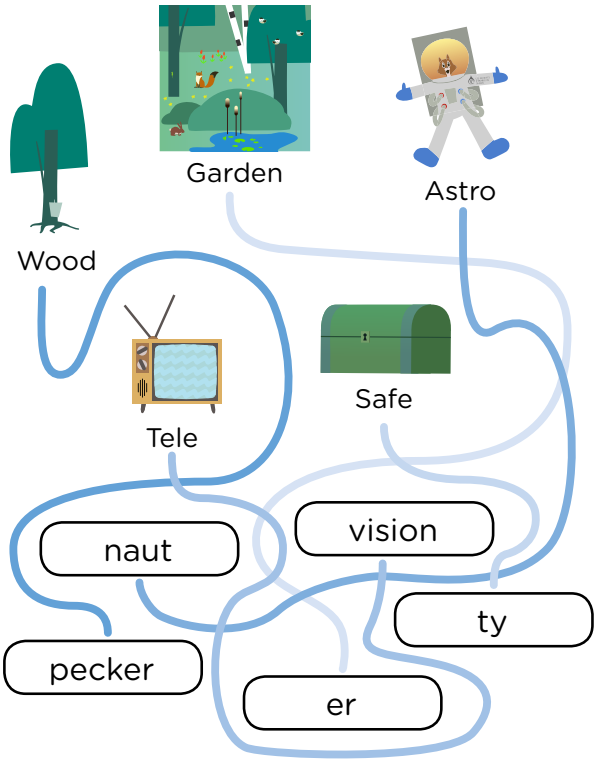
PHONETICS

Matériel de base: The Maple Producer

Learning objectives:
Work on suffixes.
Integrate vocabulary.

Would YOU be a Good Maple Producer?

Follow each tube toward the suffix and make a new word by combining the noun with the suffix you found.



WORKBOOK B

Exercise B14

GRAMMAR

Matériel de base: Health and Sport

Learning objectives:
Work on verb tenses.
Practice spelling.

Participate by Colouring Participles

Following the path, colour the eight present participles and then write down the first letters of each one to find out who really discovered maple sap.

s	n	o	w	b	o	a	r	d	i	n	g
											x
w	r	e	v	e	a	l	i	n	g		q
i									m		u
m		x	f	h	v				r		a
a		l							e		l
g		i							a		i
i		v							c		f
n		i							h		y
i		n							i		i
n		g							n		n
g		x	e	a	t	i	n	g	x		g
k											b
s	g	h	e	x	u	n	i	t	i	n	g

Character:

WORKBOOK B

Exercise B15

MATHEMATICS

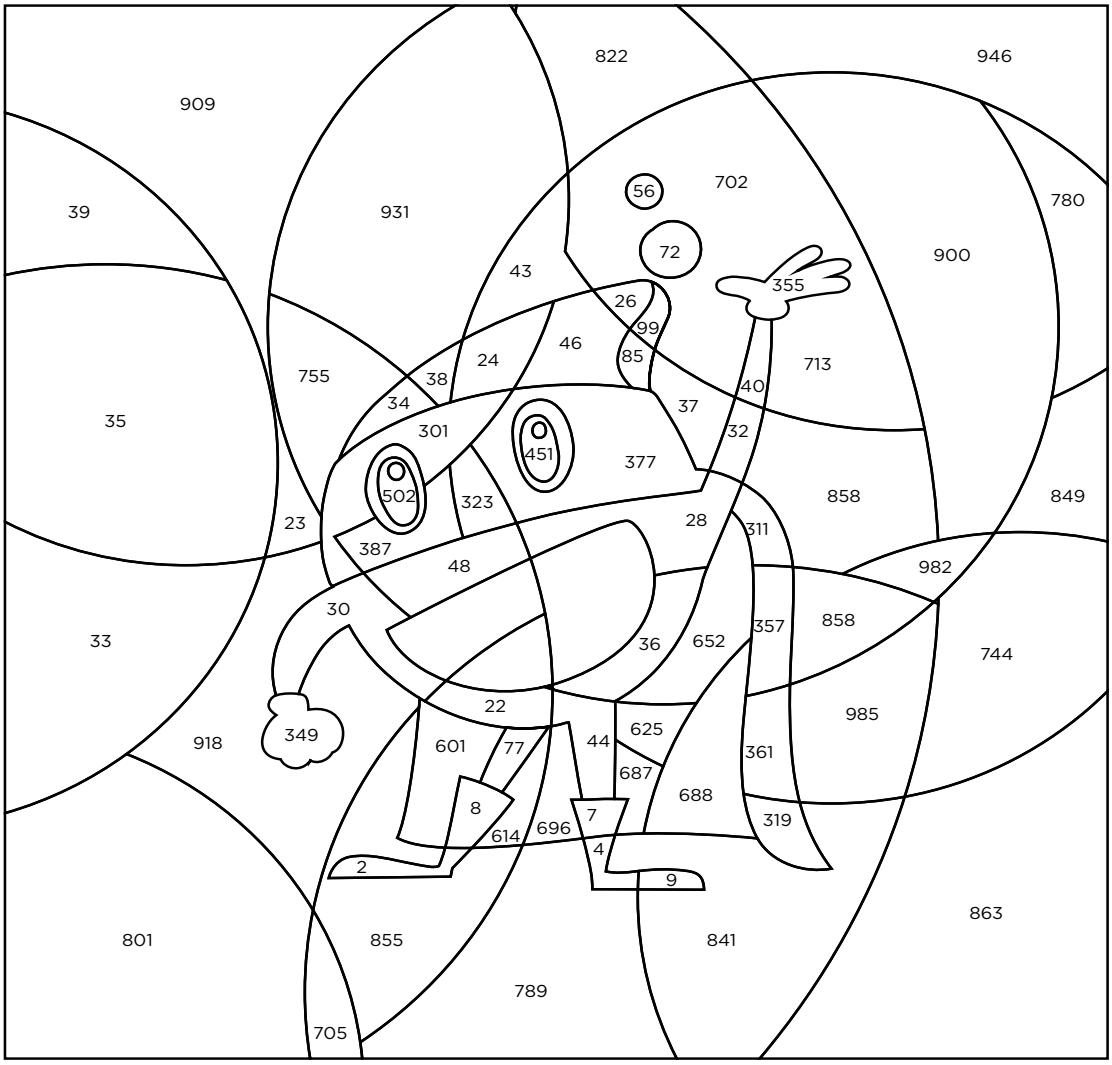
Source material: None

Learning objectives:
Integrate greater than/smaller than numbers and even/odd numbers.
Work on hundreds and colours.

Search Me!

Nobody knows maple better than he does! Find out who he is by colouring:

- in YELLOW the even numbers greater than 20 but smaller than 50;
- in ORANGE the numbers smaller than 100 but greater than 51;
- in RED the odd numbers smaller than 388 but greater than 299;
- in **BLACK** the numbers greater than 420 but smaller than 509;
- in DARK RED the numbers between 600 and 700;
- in BROWN the numbers smaller than 10;
- in GREEN the remaining numbers.



WORKBOOK B

Exercise B16

WEATHER

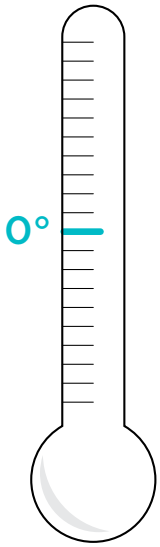
Source material: The Production of Maple Syrup

Learning objectives:
Practice using and reading a thermometer.

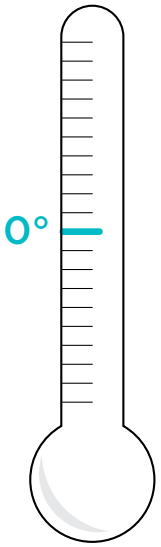
Weather Gone Nuts!

Maple sap rises only when there is an alternation of cold nights and warm days. On each thermometer, colour in red the minimal and maximal temperature variations that allow the sap to flow.

MINIMAL VARIATION
DAYTIME TEMPERATURE



MAXIMAL VARIATION
NIGHTTIME TEMPERATURE



WORKBOOK B

Exercise B17

GRAMMAR

Source material: The Ecosystem and its Flora and Fauna

Learning objectives:
Practice sentence structure.
Insert punctuation.

Order, Please!

Place the words in the right order with the help of the text if needed. Add the correct punctuation (. ? ! , ... -).

1. shelters a plants large The of variety sugar bush

2. sugar bush life is of full The

3. die trees they The born grow are they and

4. is life Such cycle the of

5. is know an the Did that you ecosystem sugar bush

6. living oxygen The all Earth and need things the

7. looks beautiful sugar bush The like good that a garden smells

WORKBOOK B

Exercise B18

ALPHABET

Source material: The Ecosystem and its Flora and Fauna

Learning objectives:
Integrate vocabulary.
Practice alphabet.

OF ANIMALS AND THE ALPHABET

Pair each number with its corresponding letter in the alphabet (e.g. 1=A, 2=B, etc.) and find out what all these words have in common.

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M

14	15	16	17	18	19	20	21	22	23	24	25	26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

__ __ __ __
6 18 15 7

__ __ __ __ __ __ __ __ __ __
19 1 12 1 13 1 14 4 5 18

__ __ __ __ __ __ __ __
3 8 9 16 13 21 14 11

__ __ __ __
8 1 18 5

__ __ __ __ __ __ __ __ __
16 1 18 20 18 9 4 7 5

__ __ __ __ __ __
3 15 25 15 20 5

Answer:

_____

EXTRA: SCIENCE

EXTRA: SCIENCES

1, 2, 3... Reaction!

The mysterious chemistry of sap and its transformation into maple syrup depend on the maple producer's talents (not such a secret after all!). True! These producers are a bit like modern alchemists and, thanks to them, we better understand the role of the Maillard reaction in this process.

One day, a French scientist named Maillard discovered that a chemical reaction occurs when food is cooked at a temperature of 145 degrees Celsius or higher. He was so proud of this discovery that he gave it his own name: the Maillard reaction! The heat that accumulates during cooking modifies the food's characteristics—its colour, odour and flavour—besides producing delicious aromas.

Possible additional exercise:
One of the best examples for understanding the Maillard reaction (and to explain it to children) is to heat white bread in a toaster to transform it into toast. A nice chemical experiment that would delight children, don't you think?

EXTRA: SCIENCE

Fall, the Festival of Colours and Chlorophyll

During the fall, days get shorter and shorter, and temperatures cool down. As leaves start to lack sunlight, the sugar bushes turn yellow, orange and red. These colour changes are caused by the transformation of pigments, such as chlorophyll, in the leaves. This green pigment is produced by the solar energy that plants capture. Chlorophyll is not available all year long, because its presence in plants depends on sunlight. In short, the less sun there is, the less chlorophyll, and therefore less green. This continues until the leaves fall. The leaves' main activity is based on light so, as the days shorten, light becomes insufficient and chlorophyll production stops. And that's when what is commonly called the Festival of Colours begins!

Fall benefits the maple producer. When the ground is frozen, the producer is less likely to trample plants, flowers or young maple shoots. It is the perfect time to take care of the sugar bush by, for example, checking the condition of the tubing system and cutting dead branches and trees that are too old or sick. Often the maple producer will leave behind piles of branches that serve as shelters for animals in winter.

Possible additional exercise:
During the fall, ask your students to make their own "Festival of Colours" herbarium to illustrate photosynthesis as the season progresses and the maple tree's leaves redden and fall.

EXTRA: SCIENCE AND GASTRONOMY

Maple: Much More than just Syrup!

From the sap of a tree found only in North America, our ancestors and today's maple producers have created iconic Quebec products that are now exported to more than 50 countries around the world. When you think about it, that's quite impressive. Entirely natural and often made using traditional methods, these products inspire chefs across the globe, along with local foodies—and children everywhere. That's rather extraordinary!

Exploring the range of maple products also means learning about the natural chemistry behind these gourmet treats and their production processes. That's a science lesson in itself.

Maple Sap

Everything starts with maple sap, which is natural and 100% pure. Maple sap owes its fresh, authentic and slightly sweet taste to Quebec's majestic sugar maple trees. It has been consumed for its fortifying properties since time immemorial. An excellent eco-friendly product, maple sap carries 46 nutritional compounds essential to the tree's life, development and protection. This authentic bioactive cocktail includes many vitamins and minerals, organic acids, amino acids, polyphenols, phytohormones—all with only 5 g of carbohydrates and 20 calories per 250 ml.

Maple Syrup

We make Quebec's famous maple syrup by boiling the trees' sap. Maple syrup's colour and flavour change throughout the sugaring-off season in a perfectly natural process. At the beginning of the season, the syrup is generally clearer with a delicately sweet taste. It becomes increasingly darker and caramelized as the season progresses. This natural gradation leads to four categories of syrup—golden, amber, dark and very dark—whose taste varies from delicate to rich, robust and strong. You can find them all at the sugar shack and at the grocery store.

Maple Butter

Despite its name, this spread is made without dairy products.
It owes its smooth texture to the cooking and churning of maple syrup.

Maple Taffy

This sugar shack classic is made by boiling maple syrup to concentrate it. During sugaring-off season, hot maple taffy is poured over snow to cool it, and *voilà*! It's ready to eat!

Maple Sugar

Pure granulated maple sugar may have the texture of table sugar, icing sugar or superfine sugar. It can be used whenever recipes call for white or brown sugar.

Hard Maple Sugar

Also called block maple sugar because of its compact form, it was highly prized by ancestors who called it "country sugar" ("*sucre pays*" in French) or sap sugar. In the days of New France, country sugar competed with sugar cane from the West Indies.

Maple Flakes

Maple flakes are created by freeze-drying (dehydrating) maple syrup. They are found in stores in plain and flavoured versions.

Specialty Products

There's a host of gourmet products flavoured with maple syrup, such as vinaigrettes, vinegars, mustards, and jellies, to delight maple lovers.

Maple Spirits

Maple vodka, maple port and maple cream are some of the fermented alcohols produced from maple sap. Other liqueurs are naturally flavoured with maple.

Possible additional exercise:
Let's make taffy! A container of clean, compacted snow, one or more cans of maple syrup, wooden sticks, a classroom of children with a sweet tooth... and the party's on! Just boil the syrup about ten minutes, pour it in lines over the snow, twirl it up on the sticks, and enjoy. If the syrup is too thick to harden properly, add some water. If it is too thin, boil it a little longer.

Who'll be the most popular teacher this year?!?

EXTRA: SCIENCE

Focus on Colours and Flavours

Mother Nature is largely responsible for the difference in colours and flavours of maple syrup. They vary throughout the season because the natural composition of maple sap changes. This does not, however, affect the syrup's quality.

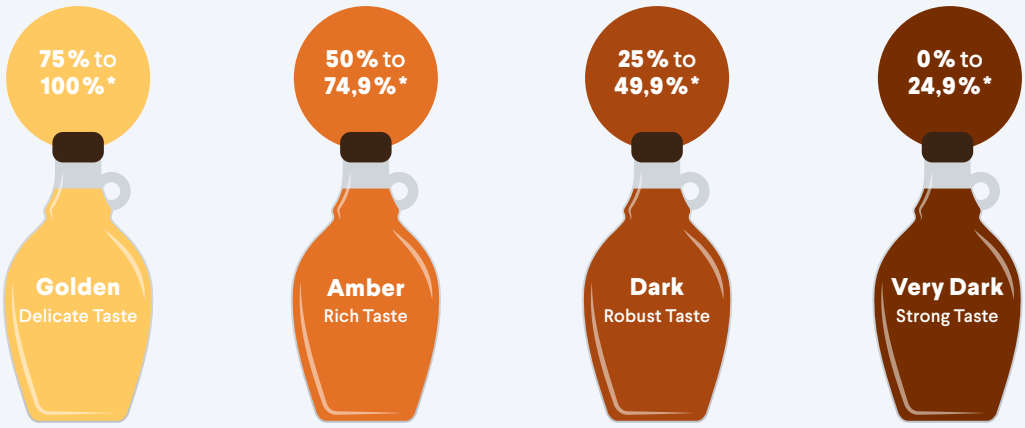
As the season progresses, the following phenomena are generally observed:

- the types of sugar in the maple sap change: fructose and glucose content increases while sucrose content decreases slightly
- the content of other natural compounds in the maple sap also varies during the season (amino acids, minerals)

These transformations in the maple sap's composition lead to a change in the maple syrup's colour and taste, according to when it is harvested.

Early on, the syrup is usually clear and slightly sweet (golden colour, delicate taste to amber in colour, rich taste). Later, the syrup becomes darker and more caramelized (dark colour, robust taste to very dark, strong taste) without ever losing any of its high quality.

The four official colours of maple syrup are governed and determined by the percentage of light that passes through the syrup. To determine the colour, it takes a specialized device called a spectrometer that measures the syrup's opacity. That being said, every class of syrup has, to some degree, that wonderful amber colour that distinguishes our precious Quebec liquid gold.



Proposed additional exercise:
Let's work on colours! Ask your students to draw a gradient, or various shades, of colours.

* The percentages refer to light transmission in the maple syrup.

Fédération des producteurs acéricoles du Québec