

A cartoon illustration of a hand washing station. A silver faucet is dispensing blue water into a clear glass. A white hand with a pink wristband is reaching towards the water. To the left, a white soap dispenser with a blue pump is also shown. The background is a bright yellow gradient.



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Introduction

Drop the Pop Challenge

Every year, the Community Health Representatives (CHRs), dental hygienists and nutritionists of the Cree Board of Health and Social Services of James Bay invite Cree schools, parents and communities to participate in the **Drop the Pop** Challenge. The objectives of the Challenge are to:

- Decrease consumption of **sugary beverages*** by children and adolescents in Eeyou Istchee.
- Make students, parents and community members aware of the harmful health effects of **sugary beverages**.
- Promote water and milk as alternatives to **sugary beverages**.

*The expression « **sugary beverages** » is used throughout this text for ease of reading. « **Sugary beverages** » refers to both soft drinks and sports drinks (such as Gatorade and Powerade) as well as to energy drinks (such as Red Bull and Full Throttle), powdered drinks (such as Tang and Kool-Aid) and fruit drinks, beverages, punches and cocktails.

Introduction

What is the challenge?

- The **Drop the Pop** Challenge is intended for all students of Eeyou Istchee, from kindergarten to grade 11.
- Students will be challenged to avoid drinking **sugary beverages** for 5 consecutive days, while limiting their consumption of 100% pure fruit juice to a maximum of one glass per day (8 oz /250 ml).

When will the challenge take place?

- For 5 consecutive days during the school year.

Educational Activities:

- Educational activities can be held at any time during the school year, not only during the week of the Challenge.
- Educational activities may be led by teachers, community health representatives (CHR), nutritionists, dental hygienists or school nurses.

How

to participate to the challenge

This document is a guide designed to help you incorporate nutrition and oral health activities into your teaching program during *Nutrition Month* (March) and *Dental Health Month* (April). Your community's nutritionist, community health representative or dental hygienist will contact you about planning the Drop the Pop Challenge.

BEFORE the Drop the Pop Challenge

- Step 1** Read this document. The document is divided into two parts. The first part contains general information about the Challenge. In the second part, suggestions of educational activities are presented.
- Step 2** Distribute the letter to parents to inform them about the challenge and the dates during which it will take place. (Annex 1)
- Step 3** Announce the **Drop the Pop** Challenge to students, explain its goal and describe the participation prizes. Write your students' names down on the **Drop the Pop** Score Sheet and post it in the classroom. (Annex 2)
- Step 4** Integrate the educational activities into your teaching program or your schedule based on your availability.

DURING the week of the Drop the Pop Challenge

- Step 5** Once a day, for the five days of the challenge, ask your students if they drank any **sugary beverages**. Put a check mark on the **Drop the Pop** Score Sheet (Annex 2) if the participant **did not drink** any **sugary beverages during an entire day**. E.g.: On Tuesday morning, ask the students if they consumed any **sugary beverages** on Monday, etc.

NB If necessary, inform substitute teachers about the events taking place in your classroom during the challenge to ensure proper follow-up of the activity throughout the five days of the challenge.

AFTER the Drop the Pop Challenge

- Step 6** Complete the **Drop the Pop** Score Sheet for your class (Annex 2).
- Step 7** Complete the Draw Registration Sheet (Annex 3).
- Step 8** Complete the Activity Evaluation Sheet (Annex 4).
- Step 9** Submit these 3 sheets to the person responsible for organizing the challenge in your community. The winning classes and students will be drawn at random once all names will have been received.

**Your opinion and your comments are very important to the evaluation of this project.
They allow for ongoing improvement of the challenge.**

Information for teachers

Why participate in Drop the Pop?

The prevalence of overweight and obesity as well as tooth decay among Cree children is alarming.

The overconsumption of **sugary beverages**, along with lack of physical activity, contributes greatly to excess weight gain in children.

Excess weight, even at a young age, contributes to the development of certain health problems, including:

- **Insulin resistance and glucose intolerance**
- **Type 2 diabetes**
- **Hypertension**
- **Heart disease**
- **Various respiratory problems**
- **Various musculoskeletal problems**

In addition, the sugar and acid contained in **sugary beverages** are largely responsible for tooth decay and tooth enamel erosion, particularly in people with poor oral hygiene habits.

Information for teachers

Some statistics

Consumption of *sugary beverages*

- 90% of children questioned had consumed one or more “*sugary beverage*” during the last 24 hours (excluding 100% pure fruit juice) (1).
- 1/4 of the total energy consumed by children comes from *sugary beverages* (excluding 100% pure fruit juice) (1).

Overweight/obesity

- 70% of the children in Eeyou Istchee are overweight (2).

Physical activity

- Only 49% of children are physically active enough (2).
- 18% of children participate less than once a week in a physical activity (3).
- Children spend, on average, 3.5 hours per day watching television (3).

Diabetes (2009)

- 12 cases of diabetes were diagnosed in young Crees between 10 and 19 years of age (4).
- In 2009, 1910 Crees were diagnosed with diabetes(4).
- One in four (24,7%) individuals living with Diabetes was under 40 years old (4).

Oral health

- In Eeyou Istchee, one child in 3 aged between 1 and 2 years old has tooth decay, which is 8 times more than in other regions of Quebec. (5)
- 9 out of 10 Cree children between the ages of 4 and 12 have tooth decay. (5)
- While tooth decay has decreased by 39% among children from 7 to 8 years old in Quebec, it has increased by 3% among children of the same age in Eeyou Istchee. (5)

REFERENCES

- (1) *Nituuchischaayihitaau Aschii Multi-Community Environment and Health Longitudinal Study in Eeyou Istchee*, Mistissini 2005.
- (2) *Active School project*. Waskaganish & Mistissini, CBHSSBJ, 2005, Willows N.
- (3) *Eeyou Istchee Aboriginal Peoples Survey*. Chisasibi, CBHSSJB, 2005. Torrie J.
- (4) *Cree Diabetes Information System (CDIS) 2009 Annual Report*, CBHSSJB, 2011, Kuzmina E. and al.
- (5) *Report on Dental Health in Eeyou Istchee*, CHSSJB 2001. Véronneau J, Sirhan H, Hallouche M.
- (6) Edmond V., 2002. *Prévalence du diabète au Québec et dans ses régions : première estimation d’après les fichiers administratifs*. Institut national de santé publique du Québec.

Information for teachers

Facts about Sugary Beverages

Nutrition

- **Sugary beverages** contain **few essential nutrients** (vitamins and minerals), although vitamin C is added to these drinks.
- Children who drink one glass of 100% pure fruit juice per day fulfill their need for vitamin C.
- It is recommended to limit sugar consumption to 10% of the total energy consumed in a day.

This represents:

Category of persons	Number of teaspoons of sugar that represents 10% of total daily energy
Children between 8 and 10 years old	6
Sedentary adolescent	12
Active adolescent	18
Sedentary adult	11

- **Sugary beverages** contain **a lot of sugar**, on average 6 to 12 teaspoons, depending on the size of the can or bottle (see Annex 4). The maximum amount of sugar recommended is quickly reached!
- Following the consumption of **sugary beverages**, the body only feels satisfied for a very short time. Unlike food, sugary drinks **do not appease children's hunger so that they can wait for the next meal**. This contributes to the overconsumption of calories and, thus, to **excess weight gain**.
- The overconsumption of **sugary beverages** tends to decrease consumption of important beverages such as:
 - milk, which is necessary to build and maintain strong teeth and bones
 - water, which is essential to the proper function of the body

REFERENCES

Sugar shaker education kit. Developed by registered dietitians and community health nurses of Capital Health Region, Alberta, www.capitalhealth.ca
Diététistes du Canada, www.dietitiansofcanada.ca
Osteoporosis Society, www.osteoporosis.ca

Information for teachers

Oral health

- Healthy teeth and gums are needed to properly chew and taste the food we eat daily.
- The sugar contained in food and beverages also feeds the bacteria responsible of tooth decay. Certain bacteria transform sugar into acid, which attacks tooth enamel and contributes to the formation of tooth decay (Annex 5).
- An adequate oral hygiene is necessary to eliminate bacteria and food debris in the mouth.
- Soft drinks, fruit juices and sports drinks (such as Gatorade) or energy drinks (such as Red Bull) also contain **acid** (phosphoric, citric, etc.) in sufficient quantities to attack tooth enamel and cause tooth erosion.
- When one is dehydrated, one has less saliva in the mouth. Yet, saliva protects and cleans the mouth by diluting sugar and acid levels. Drinking **sugary beverages** when one is thirsty is more harmful than doing so during a meal. Drinking water is the best way to quench thirst!
- When one consumes sweet food or a **sugary beverage** the acid produced stays in the mouth for approximately half an hour. If one sips a **sugary beverage** all day long, one's tooth enamel is in permanent contact with acid. Thus, the teeth are constantly being attacked and demineralized. This can lead to the erosion of tooth enamel and to cavities (Annex 5).

Points to remember

- Limit the consumption of sugary foods, soft drinks, fruit juices, sports drinks and energy drinks
- Choose snacks that are “healthy” for teeth, such as cheese, vegetables and fruit.
- To quench thirst, drink water or milk.
- Avoid sipping **sugary beverages** over a long period of time.
- Use a straw to limit the contact between **sugary beverages** and your teeth.
- After consuming sweet food or **sugary beverages**, while waiting to brush your teeth, rinse your mouth with water to reduce the amount of sugar and acid in your mouth.
- Brush teeth regularly after meals with fluoride toothpaste and use dental floss to remove dental plaque.
- Visit the dental clinic regularly (twice a year) to be examined and to have your teeth cleaned.

The sugar and acid contained in sugary beverages contributes to the erosion of tooth enamel and the formation of tooth decay.

Facts about Juice and Fruit Drinks

- Both fruit and fruit juice that is 100% “pure” or “without added sugar” supply vitamins, minerals and fructose (a naturally occurring sugar found in all fruit). One half-cup (125 ml or 4 oz) of 100% pure juice contains **as much sugar as the average fruit** (the equivalent of 3 teaspoons of sugar).
- For example, if a child drinks 2 glasses (500 ml or 16 oz) of 100% pure fruit juice at meals, he or she is consuming about 12 teaspoons of sugar (or the equivalent of 4 average fruits). **One glass (250 ml or 8 oz.) of 100% pure fruit juice is sufficient to meet a child’s daily vitamin C needs.**
- Eating fruit satisfies a child’s hunger for longer than drinking a glass of juice does. It is thus recommended to eat fruit instead and to **limit the consumption of 100% pure fruit juice to 1 glass per day (8 oz or 250 ml)**. Consider, also, that any excess juice drunk generally takes the place of milk, water and food.
- Punches or fruit juice cocktails (Tang, Kool-Aid, Tropicana Twister, Sunny Delight, etc.) **provide few nutrients** (except for vitamin C). These beverages often contain only water, sugar, food colouring, artificial flavours and more or less 10% of real juice. These beverages are the equivalent of “liquid candy”
a n d
they are not recommended.
- To identify fruit juices, look for the expression **100% fruit juice** or **100% pure fruit juice** on the label. If you see “beverage,” “drink,” “cocktail,” or “punch,” it’s liquid candy!

You can also consult the list of ingredients on the label. If sugar, sucrose, glucose or fructose is among the ingredients, a beverage contains added sugar.

Facts about Milk and Water

- **Calcium and vitamin D** are important for building bone mass during childhood and adolescence. Milk products are the main source of calcium:
 - Milk, powdered milk, chocolate milk and Yop are “healthy” choices.
 - **Brand name milk shakes** (such as Nesquik^{MD}, Rolo^{MD} and Coffee Crisp^{MD} milk shakes, etc.) do not replace milk and **are not “healthy” choices**. They contain a lot of added sugar (12 to 15 teaspoons).
 - Coffee whiteners (like Coffee Mate^{MD}) do not contain milk. They are mainly composed of fat and sugar.
- Some individuals are **lactose intolerant**. For these persons, the consumption of milk or milk products leads to intestinal problems (flatulence, diarrhea, bloating and cramps). Lactose tolerance varies from one person to another. Most lactose intolerant persons can eat or drink small quantities of dairy products at a time (1/2 cup of milk, 1/2 cup of yoghurt, approximately 30 grams of cheese). These persons can drink lactose-free milk (Lactaid^{MD}) or a soy beverage enriched with sufficient amounts of calcium and vitamin D.

Water, the source of life!

- Drinking water is the best way to quench your thirst and it is calorie-free.
- Drink more water when it is hot and/or when engaged in physical activities
- The body is composed of 70% water. Water plays a very important role:
 - It lubricates joints.
 - It forms the basis of body fluids (blood, saliva, etc.).
 - It maintains body temperature.
- Lack of water, known as dehydration, can lead to headaches, fatigue, and poor concentration.

Caffeinated beverages

- “Cola” style soft drinks contain caffeine (the equivalent of 1/3 a cup of filtered coffee per 335 ml can) (Source: Health Canada).
- Energy drinks (such as Red Bull, Full Throttle, SoBe, Adrenaline Rush, Red Rain, Hype, etc.) contain the same amount of caffeine as 1 cup (250 ml or 8 oz) of filtered coffee per can.
- According to Health Canada, **caffeinated beverages are not recommended for children under 12 years of age.**
- The body becomes use to caffeine.
- Suddenly cutting out caffeinated beverages after regular consumption can result in headaches and fatigue. Children may be in a bad mood, impatient and have trouble concentrating. Some children may experience insomnia.
- Children should be encouraged to stop consuming caffeinated beverages gradually.
- Caffeine has a diuretic effect. Consequently, it speeds up dehydration. Thus, caffeinated beverages produce the opposite effect of water.
- Caffeine contributes to the demineralization of bones and teeth, and thus weakens them.

For more information on energy drinks, consult the following resources:

Safe Use of Energy Drinks, Health Canada, 2010, http://www.hc-sc.gc.ca/hl-vs/alt_formats/pdf/iyh-vsv/food-aliment/boissons-energ-drinks-eng.pdf

Dossier spécial sur les boissons sucrées, ASPQ, 2010, <http://www.aspq.org/DL/bspsept2010.pdf>
(available in French only)

Dubé and al., «Boissons énergisantes: risqué lies à la consommation et perspectives de santé publique», INSPQ, 2010, http://www.inspq.qc.ca/pdf/publications/1167_BoissonsEnergisantes.pdf
(available in French only)

Protecting our environment!

Containers such as unrecycled cans and bottles increase the amount of waste in the natural environment and contribute to its deterioration.

- Note that it takes:*
 - 4,000 years for glass to decompose
 - 400 years for plastic to decompose
 - 200 years for aluminium cans to decompose
- To take an example, the consumption of one bottle of water per day by one person results in 365 plastic containers per year, a considerable amount of waste. Now, do the calculation for a family!
- Recommendations:
 - Prefer reusable containers to limit the amount of waste added to the environment.
 - Drink water from a tap whenever possible. It is controlled and tested regularly.

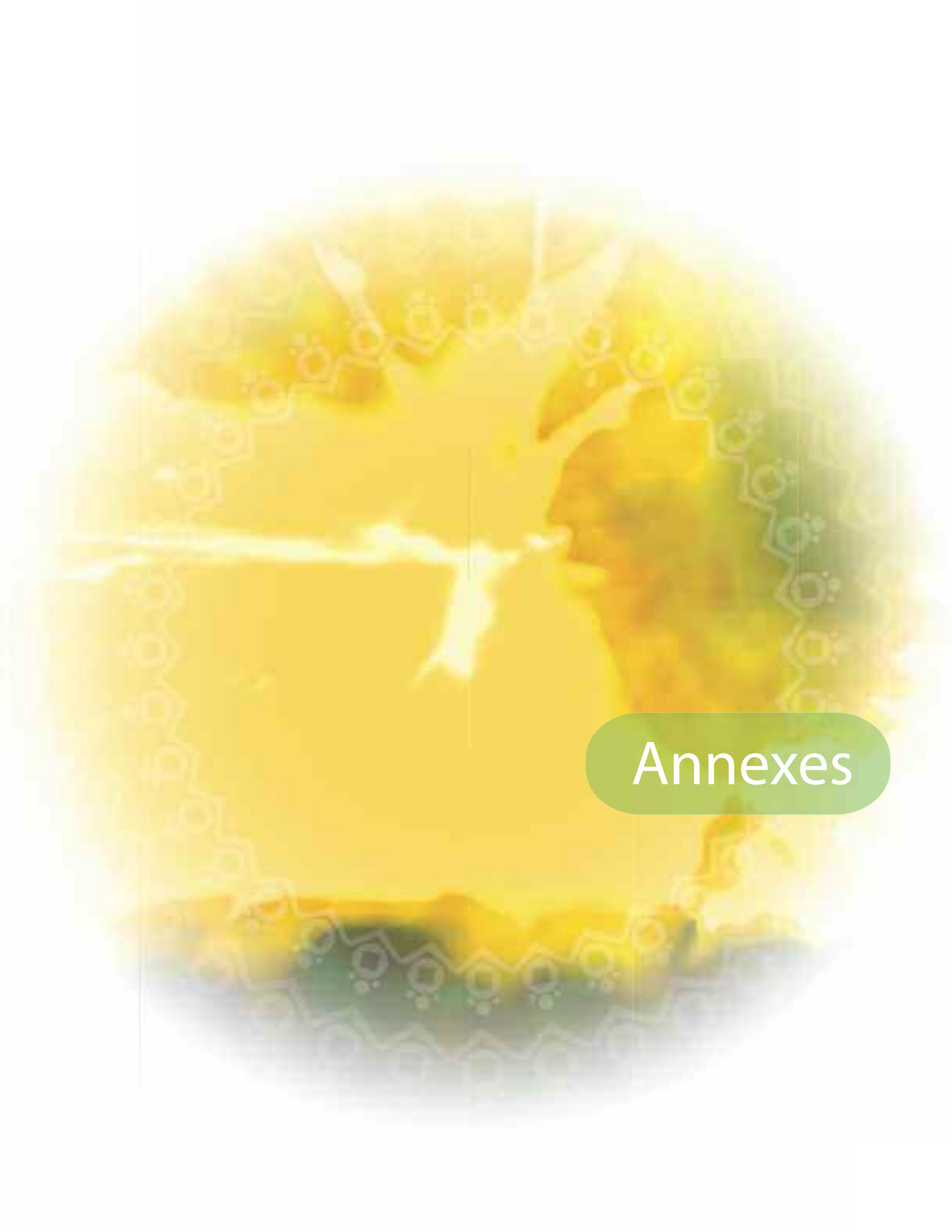
For more complete information on the quality of the water in your community visit the following site: www.envcree.ca.

Recycling tips for the classroom:

- Wash and re-use plastic yoghurt containers, glass jars and empty water bottles to store school supplies in your classroom.
- Re-use cardboard packaging and other paper in craft projects
- Ask the Band Council in your community about how your class can collect empty pop cans to raise funds for a school activity.
- Make your own shopping bag from recycled clothes
- Make recycling and conservation a theme for your school science fair

REFERENCE

* www.wikipedia.org
www.recyc-quebec.gouv.qc.ca



Annexes

Information for parents

Drop the POP week!

Dear Parents:

Students at _____ school will be participating in the **Drop the Pop Challenge** during the week of _____ to _____ year _____

During the five days of the challenge, your child will try not to drink any **sugary beverages**.*

***Sugary beverages refers to both soft drinks and sports drinks (such as Gatorade and Powerade) as well as to energy drinks (such as Red Bull and Full Throttle), powdered drinks (such as Tang and Kool-Aid) and fruit drinks, beverages, punches and cocktails.**

If your child is used to drinking more than one soft drink per day, he or she may need more rest and extra patience and understanding from you to achieve his or her goal.

Growing children need to drink **water and milk** to grow up healthy and build strong teeth and bones. Unfortunately, **sugary beverages** often replace these two important drinks.

In addition, most soft drinks contain **caffeine**, which is not good for children and can even negatively affect their concentration at school and have a harmful effect on the health of their bones and teeth.

For growing children, it is recommended to drink

- **water, as desired**
- **2 glasses of milk per day** (500 ml or 16 oz)
- **a maximum of 1 glass of 100% pure fruit juice per day** (250 ml or 8 oz)

Powdered drinks (such as Kool-Aid and Tang), fruit punches and other sweetened drinks (such as Sunny Delight and Fruité) are not 100% pure fruit juices. Make sure to always have milk and 100% pure fruit juice available at home. Frozen 100% pure fruit juice is also a good choice.

Sports drinks (such as Powerade and Gatorade) are **not recommended** except in the case of very intense physical activity.

Energy drinks (such as Red Bull, Full Throttle, SoBe, Adrenaline Rush, Red Rain, Hype, etc.) are not recommended because they contain caffeine.

According to Health Canada, **caffeinated beverages are not recommended for children under 12 years of age.**

Thank you for helping and encouraging your child during **Drop the Pop Week!**

Sincerely,

Your school and the **Drop the Pop** team

Your comments are important:

Public Health Department (CBHSSJB): 418 923-3355

Registration for Draws Sheet

Instructions for teachers:

Please record the names of students participating in the challenge so that they will be eligible for the draw. At the end of the challenge, submit this sheet to the person responsible for organizing the challenge in your community: either the community health representative, the nutritionist or the dental hygienist.

Name: Class: Community:	Name: Class: Community:	Name: Class: Community:
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Evaluation of the **Drop the Pop** Challenge

(to be completed by teachers)

We would greatly appreciate your taking a few minutes to provide feedback on the *Drop the Pop Challenge*. This will help us to ensure that future activities will meet your needs and expectations.

Please return your completed evaluation form to the person in charge of the *Challenge* in your community or send it by fax to the Drop the Pop team fax: (418) 923-2574.

School: _____

Grade: _____

Community: _____

1 How would you rate the following aspects of the *Challenge*?

For each question, choose one answer (X):

Content	1 (Poor)	2 (Fair)	3 (Good)	4 (Very good)	5 (Excellent)
How would you rate the content of the teachers' guidebook?					
Did you do educational activities focused on nutrition? Yes ☐ No ☐ If yes, how would you rate them?					
Did you do educational activities focused on oral health? Yes ☐ No ☐ If yes, how would you rate them?					
Did you do activities focused on environment? Yes ☐ No ☐ If yes, how would you rate them?					

Organization & Materials

	1 (Poor)	2 (Fair)	3 (Good)	4 (Very good)	5 (Excellent)
Duration of the Challenge (5 days)					
Timing of the Challenge (March/April)					
Distribution of the activities according to grades					
The structure and design of the Teacher's Guide					

General

	1 (poor)	2 (fair)	3 (good)	4 (very good)	5 (excellent)
Overall, how would you rate Drop the Pop Challenge ?					

2 Which educational activities did you do in your class? (Please mark with an X)

Nutrition: # 1 _____ # 2 _____ # 3 _____ # 4 _____ # 5 _____ # 6 _____
 # 7 _____ # 8 _____ # 9 _____ # 10 _____
 Oral health: # 11 _____ # 12 _____ # 13 _____ # 14 _____
 # 15 _____ # 16 _____ # 17 _____ # 18 _____
 Environment: # 19 _____ # 20 _____ # 21 _____

3 Would you be interested in participating in the **Drop the Pop Challenge** next year?

Yes: _____ No: _____

Please explain:

4 How can this **Challenge** be improved?

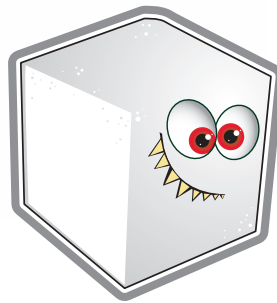
Thank you for you participation!

Poster

Tooth Decay Process



Bacteria in plaque



Sugar



Acid



Acid



Tooth enamel



Tooth decay

Poster

How Much Sugar and Acid?

PRODUCT	TEASPOONS OF SUGAR	ACIDITY LEVEL
Pure Water (355 ml)	No sugar	No acid
Coke Classic (355 ml)		
Pepsi (355 ml)		
7-Up (355 ml)		
Diet 7-Up (355 mL)	Sugar substitute	
Diet Coke (355 mL)	Sugar substitute	
Diet Pepsi (355 mL)	Sugar substitute	
Gatorade (1 bottle - 710 mL)		
Orange Crush (355 mL)		
Kool-Aid (355 mL)		
Nestea (Ice-tea) (355 mL)		
Juice of 1 lemon		

*Adapted from Minnesota Dental Association

Sweet and acidic beverages can destroy your teeth enamel.

The background of the slide features a large, glowing sphere in shades of yellow and orange, resembling a sun or a planet. Overlaid on this sphere is a faint, light-colored molecular structure, possibly representing a polymer or a complex organic molecule. The overall aesthetic is scientific and modern.

Educational activities

Activity 1

Let's Eat Healthy!

Suggested levels: Kindergarten to Grade 5

ACTIVITY DESCRIPTION

- Ask students which snacks they eat most often. Let the children name some snacks that they think are healthy. Display *Canada's Food Guide* in the classroom and talk about the four food groups.
- Invite the students to draw their favorite foods and drinks or to cut out the pictures of healthy snacks shown on Exercise Sheet #1.
- Next, ask the students to glue the pictures, either onto paper plates or onto construction paper cut in the shape of a plate.
- Ask the students to show their plates to the class and to explain why the snacks they have chosen are healthy and what food groups they belong to.

MATERIALS

- *Canada's Food Guide* – First Nations, Inuit and Métis
- Pictures of foods drawn by the children or pictures found on the Handout1
- Construction paper or paper plates
- Scissors, glue and coloured pencils

OBJECTIVES

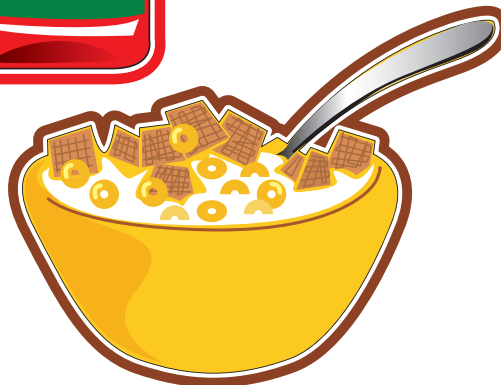
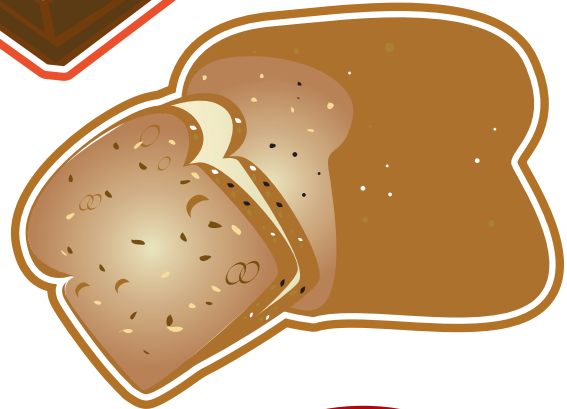
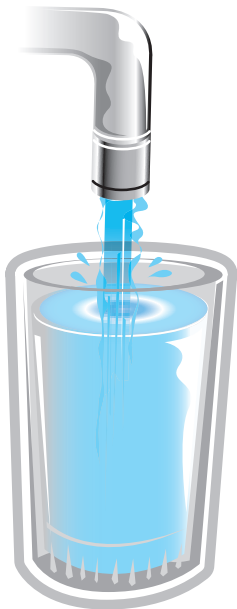
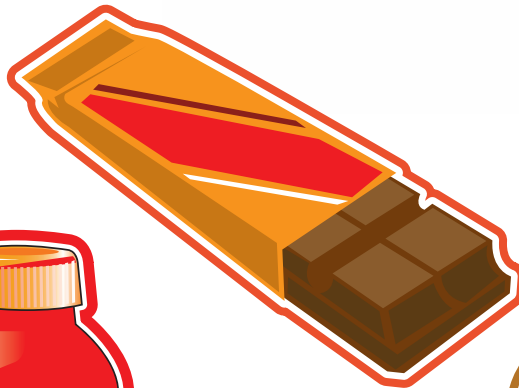
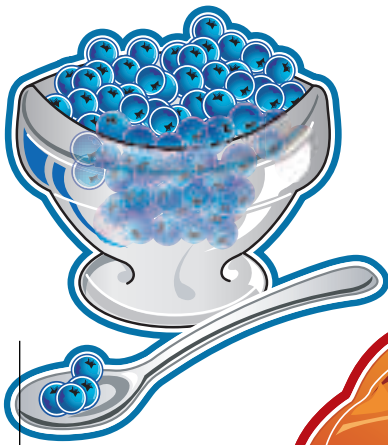
- Allow students to discover a variety of healthy food choices
- Encourage students to think about their snack choices
- Allow students to review the 4 food groups in *Canada's Food Guide*

Answers:

- Less healthy: chips, chocolate, candy, slush, Gatorade, Coca-cola, ice tea.
- Those snacks should be consumed with moderation.

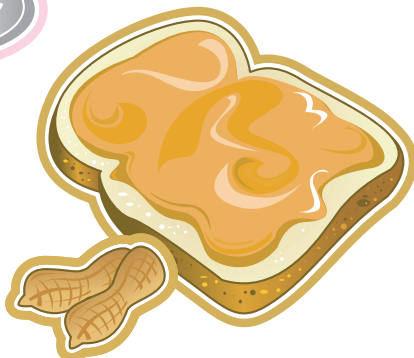
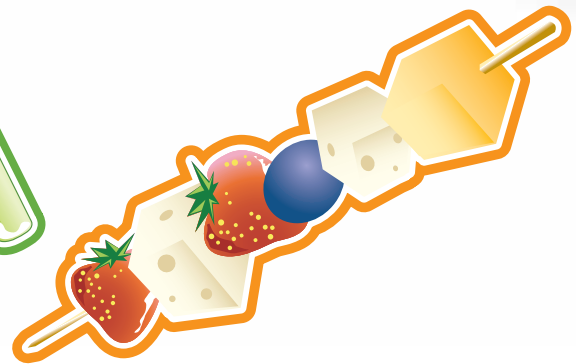
Handout 1

Let's Eat Healthy!



Handout 1

Let's Eat Healthy!



Activity 2

Riddles

Suggested levels: Grade 5 to Grade 9

ACTIVITY DESCRIPTION

- Display *Canada's Food Guide* in the classroom and talk about the four food groups.
- Test your students' knowledge of food-related vocabulary by asking them riddles. The riddles can be mimed (like in charades).
- To make this activity more interactive, the questions or the answers could be drawn by the students.
- Ask the students to discuss each other's answers: healthy or unhealthy choices?

OPTIONAL

- Write each question on a piece of paper, fold the papers, and put them in a basket. Have each student draw a question.
- If possible, have the students come up with their own riddles about healthy food.

MATERIALS

- *Canada's Food Guide* – First Nations, Inuit and Métis
- Handout 2: Riddles

OBJECTIVES

- Allow students to become familiar with healthy foods, while learning the characteristics of various foods.
- Allow students to test their knowledge of food-related vocabulary in a fun way.

Answers to riddles:

I'm :

- | | |
|--------------|----------------------|
| 1. Milk | 6. Broccoli |
| 2. Chips | 7. Yoghurt in a tube |
| 3. Kool Aid™ | 8. Pop (soft drinks) |
| 4. Fish | 9. A blueberry |
| 5. An orange | 10. Water |

Handout 2

Riddles



1 I'm white and you can drink me. I belong to the *Dairy Products* food group and I'm good for your bones and teeth. Who am I?

2 I contain a lot of fat and salt. I make a crunchy sound when you eat me and I usually come in a bag. Who am I?

3 I come in different colours: purple, red, pink or green. I'm a powder. To drink me, you have to add water. I taste very sugary. Who am I?

4 I like to swim and I'm good for your health. I'm full of healthy vitamins. Sometimes, people have to make a hole in the ice to catch me. Who am I?

5 I'm orange and round and I belong to the *Vegetables and Fruit* group. People love to eat me. I'm good for your health and full of vitamin C. Who am I?

6 I'm green and I look like a tree. I'm a vegetable. Who am I?

7 I'm very soft, I'm cold, and I can be sweet. I belong to the *Dairy Products* group and sometimes I come in a tube. Who am I?

8 I contain a lot of sugar, which can ruin your teeth. I often come in a can. Who am I?

9 I'm blue, round, and small and both kids and adults like me a lot. I belong to the *Vegetables and Fruit* group. During the summer, you can pick me in the woods. Who am I?

10 I'm colourless and sometimes I come in a bottle. Your body needs large amounts of me every day. You need me to stay healthy. Who am I?



Activity 3

Mooooo Mask!

Suggested levels: Kindergarten to Grade 1

Refer to the section “Information for teachers” on pages 4 to 13 about the importance of milk for children. This activity can be used to explain that milk comes from cows and to teach students the benefits of drinking milk.

ACTIVITY DESCRIPTION

- Cut one of the small plates in half.
- Glue the two halves of the small plate to the other small plate to form ears. Make holes for the eyes.
- Draw a mouth, nostrils, dark patches, etc. on the big plate.
- Glue together the big plate and the small plates (like in the picture).
- Cut out a label and write the student’s name on it. Attach or glue the label to one ear.
- Attach the elastic ribbon to each side of the mask to hold it in place on the child’s face.

OPTIONAL

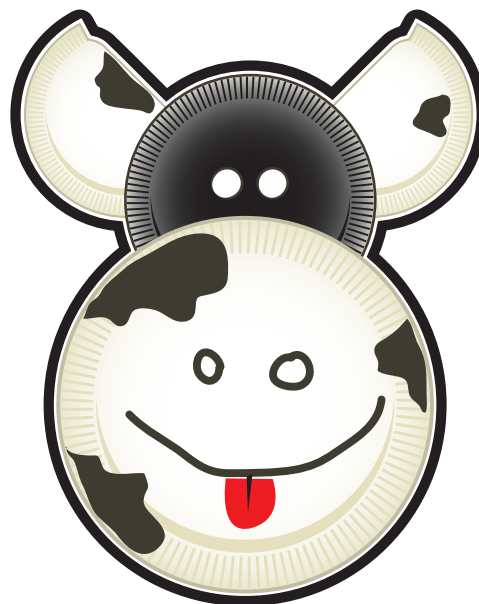
Milk could be given out as a snack at the end of this activity.

MATERIALS

- One large and two small paper plates for each student
- Glue
- Elastic ribbon
- Scissors
- Construction paper
- Coloured pencils

OBJECTIVES

- Make students aware that milk comes from cows.
- Allow students to understand the importance of drinking milk for healthy bones and teeth.



Activity 4

Brainstorming: Why Do We Drink?

Suggested levels: Grade 9 to Grade 11

ACTIVITY DESCRIPTION

- Ask students: « why do we drink? » and discuss the reasons we consume beverages (taste, thirst, availability, advertising, boredom, etc.).
- Ask the students to describe how fresh fruit differs from dried fruit: what has happened to dried fruit?
- Do all thirst-quenching beverages have the same effect? (Refer to the sections for teachers on water, juices and caffeinated beverages on pages 4 to 13).
- Ask the students to explain why **sugary beverages*** are not healthy choices (refer to the sections for teachers on nutrition and oral health on pages 4 to 13 and to Annex 6 : *How Much Sugar and Acid?*).

Discussion: How can “sugary beverages” be replaced with healthy drinks (water and milk)?

- Initiate a brainstorming session to find ways of reducing or eliminating the consumption of **sugary beverages**. Discuss the implementation of various strategies:
 - At the individual level (for example, limiting consumption soft drinks to one per week, gradually decreasing consumption of **sugary beverages**)
 - At the school level (for example, replacing soft drinks with healthy drinks in vending machines, cafeterias and canteens)
 - At the community level (for example, writing a letter to grocery store or arena managers, writing a letter to the band council, organizing activities, writing an article or participating in a radio broadcast promoting the consumption of milk or water)

OPTIONAL

Poke 4 toothpicks into two carrots. Place one carrot in a glass filled with water and the other carrot in a glass without water. Use the toothpicks to keep the carrots suspended in their glasses. Leave them there for 4 or 5 days. Observe the difference between the two carrots. One will stay fresh and the other will shrivel and dry up. Draw a parallel with the body's need for water and the state of dehydration.

OBJECTIVES

- Allow students to take note of what they are drinking.
- Allow students to develop strategies for making healthy beverage choices.
- Allow students to initiate changes on the individual and collective levels.

*The expression **sugary beverages** is used throughout this text for ease of reading. **Sugary beverages** refers to both soft drinks and sports drinks (such as Gatorade and Powerade) as well as to energy drinks (such as Red Bull and Full Throttle), powdered drinks (such as Tang and Kool-Aid) and fruit drinks, beverages, punches and cocktails.

Activity 5

How Much Does It Cost?

Suggested levels: Grade 5 to Grade 11

ACTIVITY DESCRIPTION

- Show students the poster *How Much Sugar and Acid?* (Annex 6) and discuss.
- Using the exercise sheet *How Much Does It Cost?* ask students individually to indicate how many cans of pop they think they drink per day (e.g., 3 cans).
- Calculate the number of cans consumed per week and per year (per student).
- Calculate the annual cost of these beverages (per student).

OPTIONAL

- For younger students, the teacher can calculate the number of cans drunk by all the students in the class per day and per year. Calculate the total cost and discuss what activity the students in the class could do for the same cost.
- Calculate the number of kilos of sugar consumed per year per student.
- Given that one teaspoon of sugar weighs 4g, we can deduce that 1kg (1,000g) of sugar is equal to 250 teaspoons of sugar. Based on this, calculate the number of kilos of sugar each student consumes in one year.

MATERIALS

- Handout 5: *How Much Does It Cost?*

OBJECTIVES

- Make students aware of the costs associated with regular consumption of soft drinks.
- Make students aware of the amount of sugar present in soft drinks as well as the impact of these drinks on overall health and dental health.
- Allow students to practice their math skills.



Handout 5

How Much Does It Cost?

Name: _____

How many cans per day, per week and per year?

Calculate how many cans of pop you drink per day, per week and per year:

Number of cans per day  X 7 days =  cans per week

Number of cans per day  X 365 days =  cans per year

How much sugar per day and per year?

There are 10 teaspoons (tsp) of sugar in a regular soft drink (355ml). Calculate the total number of teaspoons of sugar contained in all the soft drinks you consume:

Number of cans per day  X 10 tsp =  tsp of sugar per day

Number of cans per year  X 10 tsp =  tsp of sugar per year

How much do your soft drinks cost per day and per year?

How many cans of pop do you drink per day and per year? The quantity will surprise you and so will the cost!

			Cost per soft drink		Money spent
Number of cans per day		X	 \$	=	 \$
Number of cans per year		X	 \$	=	 \$

Activity 6

Find the 100% Pure Fruit Juice!

Suggested levels: Grade 2 to Grade 8

ACTIVITY DESCRIPTION

- Explain to students the difference between 100% pure fruit juice and **sugary beverages*** (refer to the sections for teachers on nutrition, oral health and juices on pages 4 to 13)
- Remind students that even 100% pure fruit juice should be consumed in moderation: 1 glass (250ml or 8oz) per day.
- Use the poster *How Much Sugar and Acid?* (Annex 6) to illustrate this activity
- Referring to the handout, *Find the 100% Pure Fruit Juice!* ask students to circle the 100% pure fruit juices.

OPTION

- To realize this activity, you could also use real beverage containers instead.

MATERIALS

- Handout 6: *Find the 100% Pure Fruit Juice!*

OBJECTIVES

- Make students aware of the relationship between what they are drinking and their health.
- Allow students to differentiate between **sugary beverages** and 100% pure fruit juice.

Answers:

Apple juice and orange juice

*The expression **sugary beverages** is used throughout this text for ease of reading. **Sugary beverages** refers to both soft drinks and sports drinks (such as Gatorade and Powerade) as well as to energy drinks (such as Red Bull and Full Throttle), powdered drinks (such as Tang and Kool-Aid) and fruit drinks, beverages, punches and cocktails.

Handout 6

Find the 100% Pure Fruit Juice

Name : _____

Circle the two containers that contain 100% pure fruit juice.



Activity 7

Read the Food Label on your Drink!

Suggested levels: Secondary 1 to 5

The quantity of **carbohydrate** is indicated on the food labels, it includes sugars, fiber and starch. "Sugar" is the general term used for glucose, fructose, sucrose and lactose. **Sugars** may be added or be naturally present in the product.

For information on how to read food labels, consult:

«Nutrition Labelling... Get the Facts!» (Health Canada):

http://www.hc-sc.gc.ca/fn-an/alt_formats/hpfb-dgpsa/pdf/label-etiquet/fn_background-pn_le_point-eng.pdf

ACTIVITY DESCRIPTION

- Post beverage food label.
- Question students about the following and write answers on the board :

1. How many grams of sugar are there in one portion indicated on the food label of this beverage?
2. How many grams of sugar are there in one bottle of this beverage?

It is important to explain that the serving size on the label is not always the size of a whole container.

3. How many grams of sugar are consumed after one year if you drink it once a day?
4. Read the ingredient list. Can you find the word "sugar", "glucose", "fructose" or "sucrose"?

If you can find one of those word on the ingredient list, it is a sweeten beverage, which means sugar was added.

- The same activity can be repeated with other food labels of different beverages.
- Show students the quantity of sugar consumed after one year, by comparing to a 2 kg bag of sugar.

MATERIAL

- One 2 kg bag of sugar
- Handouts #7 (1 per student)
- Chalk and board
- Empty bottles and cans of different beverages (optional)

OPTIONAL

You can ask students to bring their own empty favorite beverage can or bottle from home to discover the sugar content of their favorite drink!

Activity 7

OBJECTIVES

- Make students aware of the amount of sugar present in sweeten beverages.
- Allow students to practice their math skills.
- Allow students to understand information present on the food labels.

VARIATION for older students:

- On its web site, Health Canada offers interactive information and quiz about food labels.
 - For the interactive tool entitled Interactive Nutrition Label : Get the Facts, click on **Interactive Nutrition Label** on the following web site:
<http://www.hc-sc.gc.ca/fn-an/label-etiquet/nutrition/cons/interactive-eng.php>
 - The quiz is also available on the same web site. Click on Interactive **Nutrition Label Quiz** to access it.
- The Dietician of Canada web site also offers an interactive game on nutrition food labels. Click **Play Now** at the following address :
http://www.dietetistes.ca/public/content/eat_well_live_well/english/vgs/index.asp

Handout

7



Regular Cola: 355mL can (Pepsi)

Valeur nutritive/ Nutrition Facts
Par 355 mL / Per 355mL

Teneur/Amount	% valeur quotidienne % Daily Value
---------------	---------------------------------------

Calories / Calories 150

Lipides / Fat 0 g **0%**

Sodium / Sodium 15 mg **1%**

Glucides / Carbohydrate 41 g **14%**

Sucres / Sugars 41 g

Protéines / Protein 0 g

Not a significant source of saturated fat, trans fat, cholesterol, fibre, vitamin A, vitamin C, calcium or iron.

Source négligeable de lipides saturés, lipides trans, cholesterol, fibres, vitamine C, vitamine A, calcium et fer.

Ingredients: Carbonated water, glucose-fructose and/or sugar, caramel color, phosphoric acid, caffeine, citric acid and flavour.



Ice tea: 2L bottle (Lipton, Brisk)

Valeur nutritive/ Nutrition Facts
Par 355 mL / Per 355mL

Teneur/Amount	% valeur quotidienne % Daily Value
---------------	---------------------------------------

Calories / Calories 130

Lipides / Fat 0 g **0%**

Sodium / Sodium 60 mg **3%**

Glucides / Carbohydrate 33 g **11%**

Sucres / Sugars 33 g

Protéines / Protein 0 g

Not a significant source of saturated fat, trans fat, cholesterol, fibre, vitamin A, vitamin C, calcium or iron.

Source négligeable de lipides saturés, lipides trans, cholesterol, fibres, vitamine C, vitamine A, calcium et fer.

Ingredients : Water, glucose-fructose and/or sugar, citric acid, tea powder, sodium hexametaphosphate, flavour, phosphoric acid, sodium benzoate, potassium sorbate, caramel colour, calcium disodium EDTA, dimethylpolysiloxane, potassium benzoate, colour.

Handout

7



Sports Drink: 591 ml (Fruit Punch, Gatorade)

Valeur nutritive/ Nutrition Facts
Par 591 mL / Per 591mL

Teneur/Amount	% valeur quotidienne % Daily Value
---------------	---------------------------------------

Calories / Calories 150

Lipides / Fat 0 g **0%**

Sodium / Sodium 250 mg **11%**

Potassium/Potassium 65 mg **2%**

Glucides / Carbohydrate 37 g **12%**

Sucres / Sugars 35 g

Protéines / Protein 0 g

Not a significant source of saturated fat, trans fat, cholesterol, fibre, vitamin A, vitamin C, calcium or iron.

Source négligeable de lipides saturés, lipides trans, cholesterol, fibres, vitamine C, vitamine A, calcium et fer.

Ingredients: Water, liquid sugar, glucose-fructose, citric acid, natural flavours, salt, sodium citrate, monopotassium phosphate, ester gum, colour, caramel colour, sunflower oil.



Apple juice: 473mL bottle

Valeur nutritive/ Nutrition Facts
Par 250 mL / Per 250mL

Teneur/Amount	% valeur quotidienne % Daily Value
---------------	---------------------------------------

Calories / Calories 120

Lipides / Fat 0 g **0%**

saturés / saturated 0 g **0%**

+ trans/ Trans 0 g

Cholestérol/ Cholesterol 0 mg

Sodium / Sodium 20 mg **1%**

Potassium/Potassium 250mg **7%**

Glucides / Carbohydrate 29 g **10%**

Fibres / Fibre 0 g **0%**

Sucres / Sugars 27 g

Protéines / Protein 0.4 g

Vitamine A/ Vitamin A **0%**

Vitamine C / Vitamin C **150%**

Calcium / Calcium **0%**

Fer / Iron **0%**

Ingredients: Filtered water, concentrated apple juice, ascorbic acid (vitamin C).

Handout

7



Energy drink: 473ml can («AMP Energy elevate» Mixed Berries)

Valeur nutritive/ Nutrition Facts

Par 473 mL (1 canette) / Per 473mL (1 canette)

Teneur/Amount	% valeur quotidienne % Daily Value
---------------	---------------------------------------

Calories / Calories 230

Lipides / Fat 0 g 0%

Sodium / Sodium 110 mg 5%

Glucides / Carbohydrate 58 g 19%

Protéines / Protein 2 g

Extrait guarana 296 mg

Taurine 292 mg

Caféine / Caffeine 158 mg

Niacine 39.4 mg 170%

Extrait ginseng oriental 33.0 mg

L-théamine 24.8 mg

Acide panthoténique 16.0 mg 230%

Riboflavine 3.9 mg 240%

Non-medicinal ingredients: Carbonated water, glucose-fructose, natural raspberry cranberry flavour, citric acid anhydrous, red colour, sodium benzoate, sodium hexametaphosphate, arabic gum, corn maltodextrine, calcium disodium EDTA, brominated vegetable oil, dimethylpolysiloxane, caramel colour.

Activity 8

How Much Sugar?

Suggested levels: Secondary 1 to 5

ACTIVITY DESCRIPTION

- Post the How Much Sugar and Acid? in front of the classroom.
- Distribute an empty drink container to each student or team of students.
- Ask students :
 1. How many grams of sugar are there in one portion indicated on the food label of their beverage container?
 2. To how many teaspoons or cubes of sugar is this equivalent?
 - 1 teaspoon or 1 cube of sugar = 4 g
 - So, divide the number of grams by 4.
 - Ex.: $41 \text{ g of sugar} \div 4 = 10,25$ teaspoons or cubes in one beverage.
- Ask students to measure the number of teaspoons of sugar contained in their beverages and to pour them in transparent bowls.
- In front of the classroom, display the different beverage containers and the bowls representing the quantity of sugar contained in each of the beverages.
- In turn, ask students to present the quantity of sugar contained in each of their beverages.
- Ask students :
 1. How many grams of sugar are consumed after one year if you drink it once a day?
 - There is 365 days in a year.
 - So, multiply the quantity of sugar in grams per 365.
 - Ex.: $41 \text{ g} \times 365 \text{ days} = 14\,965 \text{ g}$
- For one of those beverages, show the quantity of sugar it represents after one year, using 2 kg bags of sugar.
 - One 2 kg sugar bag = 2000 g
 - So, divide the number of grams of sugar a year per 2000.
 - Ex. : $14\,965 \text{ g} \div 2000 \text{ g} = 7,5$ sugar bags
 - Discussion: What should we drink instead? Why?
 - Refer to information presented at the beginning of this document to facilitate the discussion.

Activity 8

MATERIAL

- Empty bottles and cans of different beverages
- 2 kg bag of sugar
- Transparent bowls
- Measuring spoons
- 1 poster How Much Sugar and Acid?

OPTION

Invite parents to see the beverage display and their sugar contents, and ask students to explain the activity realized in class.

OBJECTIVES

- Make students aware of the amount of sugar present in sweeten beverages.
- Allow students to practice their math skills.
- Allow students to understand information present on the food labels.

Activity 9

Create your Own Delicious Smoothie!

Suggested levels: Kindergarten to Secondary 5

ACTIVITY DESCRIPTION

- Ask students to wash their hands and working surface.
- Ask students to choose ingredients to prepare their own smoothie and to place them in a bowl.
- One after the other, blend each student's ingredients in the blender.
- Serve and enjoy!

MATERIAL

- Blender (s)
- Measuring cups
- Bowls
- Spoons
- Glasses
- Ingredients: (Depending on your store's availability)
 - Frozen fruits (Blueberries, raspberries, strawberries, mango, etc.)
 - Banana (1 per student)
 - Milk
 - Yogurt of your choice (strawberry, raspberry, peach, etc.)
 - Pure juice of your choice (orange, apple, pineapple, etc.)

OPTION

Take note of each student's smoothie recipe, it will then be possible to create a fun recipe booklet of their own personal recipes!

OBJECTIVES

- Allow students to practice their math skills.
- Allow students to develop their cooking skills.
- Allow students to taste new foods.



Activity 10

Taste Test: Sugar-Pop and Lemon-Pop

Suggested level: Grade 9 to Grade 11

ACTIVITY DESCRIPTION

Explain the acidity concept to the students by making them taste sweeten water mixed with lemon juice. Demonstrate that acidity can hide sweet taste.

- Take two empty 2-litre plastic soda bottles and fill them almost full with drinking water. Label them “Sugar-pop” and “Lemon-pop”
- Add 60 teaspoons of sugar to each bottle (about 3/4 cup of sugar in each bottle)
- Add 1/4 cup of lemon juice to “Lemon-pop”
- Put the caps on and shake both bottles well to stir
- Give each student a small amount of “Sugar-pop” to drink. Ask them to describe the taste (very sweet)
- Next, give each student a small amount of “Lemon-pop”. Ask them to describe the taste (not so sweet)
- Discuss the difference between the two drinks. Even though they contain the same amount of sugar, “Sugar-pop” is MUCH sweeter than “Lemon-pop”
- In “Lemon-pop”, acid in the form of lemon juice is hiding the sugary taste. Soft drink companies add acidic ingredients to make the drinks taste less sweet, AFTER they have added a large amount of sugar

Remind students that acidity hides the sweet taste. Beverage industries add acids to hide sugar added to their beverages.

- Using the poster “How Much Sugar and Acid?” show the students how much sugar and acid each type of drink contains
- Using the poster “Tooth Decay Process”, explain the relationship between sugar, acid, and tooth decay, to demonstrate that Lemon Pop is actually worse for your teeth than Sugar Pop.

MATERIALS

- “How Much Sugar and Acid?” poster
- “Tooth Decay Process” poster
- About 2 cups of sugar
- 2 large (2-litre) empty soda bottles, with caps
- About 4 litres of drinking water
- 1/4 cup lemon juice (fresh or reconstituted)
- Enough small cups for the whole class (ask the Clinic for “pill cups”)

OBJECTIVES

- Show how much sugar there really is in most types of pop, even those that don’t taste very sweet
- Demonstrate how acid can make soft drinks seem to contain less sugar than they actually do
- Explain the role that acid plays in the tooth decay process

Activity 11

Snack Time with Paahpihkwei

Suggested levels: Kindergarten to Grade 1

ACTIVITY DESCRIPTION

- Make a photocopy of the Handout on the next page for every child in your class
- Let the children draw an arrow between every tooth-friendly snack and Paahpihkwei's backpack. Discuss why some snacks are tooth-friendly and some are not.

MATERIALS

- Handout 8: Snack time for Paahpihkwei
- Crayon

OBJECTIVES

- Learn what kinds of snacks are tooth-friendly.

Answers:

- Tooth-friendly: Milk, water, apple, cheese, vegetables.

Handout 11



Activity 12

Cheese Maze

Suggested levels: Kindergarten to Grade 1

ACTIVITY DESCRIPTION

- Make a photocopy of the Cheese Maze for every child in your class
- Let them draw a line between Paahpihkwei and the piece of cheese.

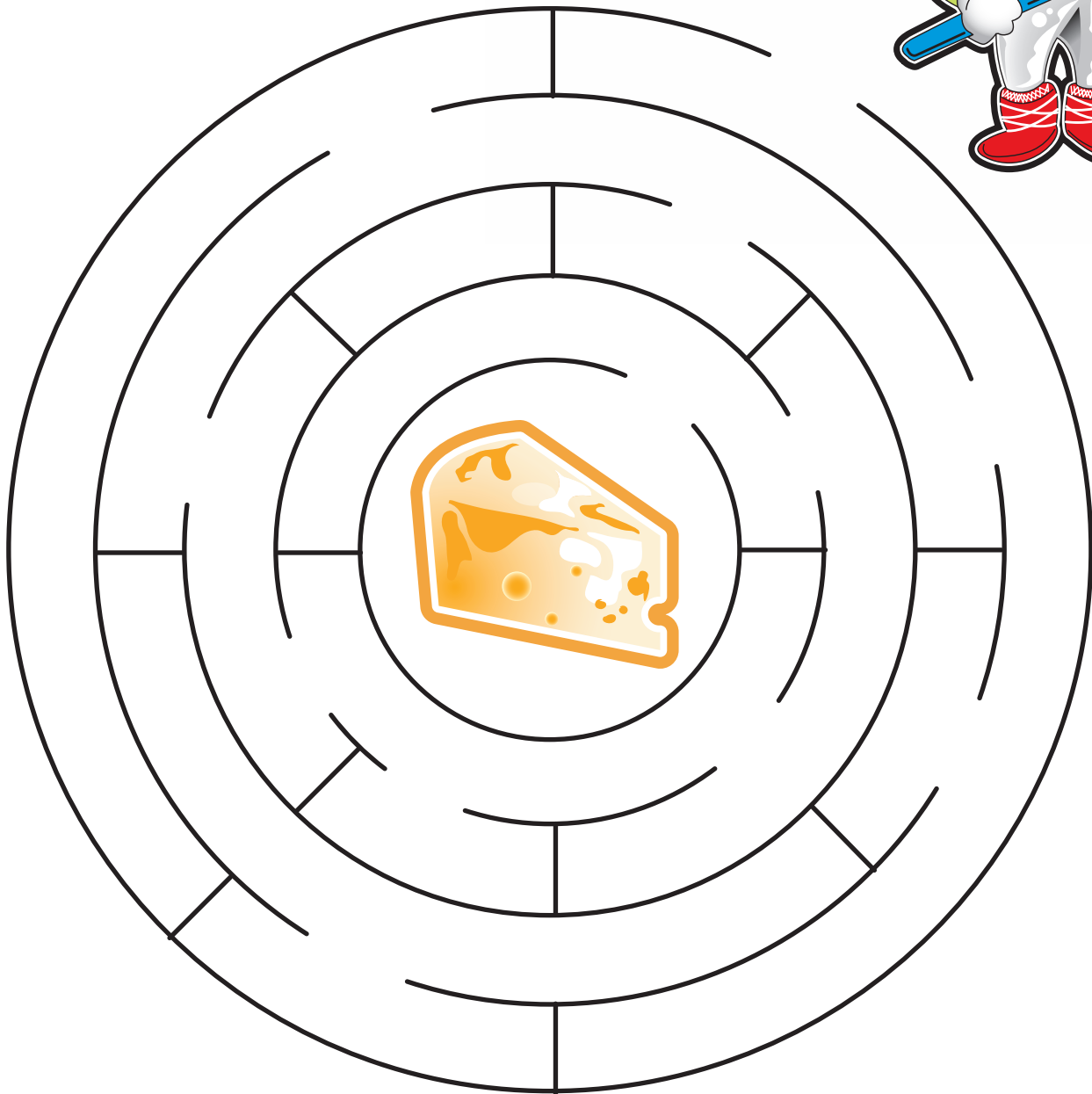
MATERIALS

- Handout 9: “Cheese Maze”
- Crayon

OBJECTIVES

- Learn that cheese is a tooth-friendly snack.

Handout 12



Activity 13

Experiment with an Egg and Vinegar

Suggested levels: Grade 3 to Grade 11

Note for the facilitator

This activity takes at least 2 days.

ACTIVITY DESCRIPTION

- Take a raw egg
- Show the class your smile and tell them that tooth enamel protects our teeth the same way that the eggshell protects the egg
- Place the egg in the cup and pour in the vinegar until the egg is completely submerged. Explain that vinegar is sour tasting because it is an acid
- Right away you will notice that CO₂ bubbles are forming on the outside of the egg. Explain that that the acidic vinegar is already starting to attack the eggshell and break it down
- Put the cup in a safe place for 24 to 48 hours
- Ask the students to predict what they think will happen to the egg (such as changes to the colour, texture, smell etc.), and write these comments down on a sheet of paper
- **After 24 to 48 hours**, use a spoon or rubber gloves to remove the egg *carefully* from the glass of vinegar and put it on a sheet of paper towel
- Ask a few students to come and examine the egg carefully and tell the rest of the class what they observe
- Compare this with what they wrote at the start of the experiment
- The vinegar (acid) makes the eggshell thin and weak; point out the calcium deposits left behind in the glass. This is the “demineralization” of the eggshell
- Refer to the posters “Tooth Decay Process”, and “How Much Sugar and Acid?” to explain that what happened to the egg is similar to what happens to your teeth when you drink acidic drinks such as colas
- **Remind students that brushing at least 2 times a day with fluoride toothpaste helps teeth stay strong by washing away acid and re-mineralizing your tooth enamel.**

Activity 13

Suite : Experiment with an Egg and Vinegar

MATERIALS

- 1 raw egg
- 1 transparent cup or glass, about 250 ml
- About 250 ml white vinegar
- Paper towel
- Paper, marker and tape
- A spoon or surgical gloves, for lifting the egg

OBJECTIVES

- Demonstrate how an acid (vinegar) attacks an eggshell and makes it weaker, the same way that sugar and acid in food and drinks such as pop attack the tooth enamel, making it easier for cavities to form.

VARIATION

Instead of an egg, you can do the same experiment with 2 clean chicken bones. Since your teeth are a kind of bone, the effect of vinegar on the bone are similar to the effect of acidic food and drink on your teeth.

- Soak one of the bones in vinegar for 2 weeks
- After 2 weeks, compare the 2 bones. The vinegar-soaked bone will be soft and flexible. When you touch it, some of the calcium will rub off on your fingers.
- The other bone will still be hard and strong.
- The acid in the vinegar de-mineralized the bone (made the calcium come out), making it weaker.
- This is similar to what happens when sugar and acid in food and drinks such as pop attack your tooth enamel, making it easier for cavities to form.

Activity 14

Experiment With an Egg and Fluoride Toothpaste

Suggested levels: Grade 3 to Grade 5

Note for the facilitator

This activity takes at least 2 days.

ACTIVITY DESCRIPTION

- Take a raw egg
- Show the class your smile and tell them that tooth enamel protects our teeth the same way that the eggshell protects the egg
- With a permanent marker write “F” on one side of the egg. Spread fluoride toothpaste (such as Crest) on the “F” side of the egg
- Let the egg sit overnight (8 hours) with fluoride toothpaste on one side
- The next day, carefully rinse the egg.
- Place the egg in a cup of 1/2 cola (such as Coke) and 1/2 vinegar. Vinegar will speed up the process
- Ask the students to predict what they think will happen to the egg (such as changes to the colour, texture, smell etc.), and write these comments down on a sheet of paper
- Once again, let the egg sit overnight (8 hours)
- The next day, use a spoon to remove the egg. *Carefully* rinse off the toothpaste and place the egg on a paper towel
- Let the students look at the egg. The side that was not protected by fluoride will be soft, rough and brownish. The other side, marked with an “F”, will be hard, strong and smooth
- Compare what happened to the egg with the students’ predictions from the day before
- Explain that the fluoride in the toothpaste protected the eggshell from demineralization caused by the acid in the cola
- Explain that brushing with fluoride toothpaste, besides cleaning your teeth, also protects your tooth enamel from sugar and acid buildup in your mouth. That’s why it’s important to use fluoride toothpaste.

Activity 14

Suite : Experiment With an Egg and Fluoride Toothpaste

OBJECTIVES

- Demonstrate how fluoride works to protect the tooth enamel from acidic drinks such as colas

MATERIALS

- 1 raw egg
- 1 small tube of fluoride toothpaste
- 1/2 cup of cola (Coke, Pepsi)
- 1/2 cup of vinegar
- 1 glass big enough to contain the egg
- Tablespoon or tongs
- Paper towel
- 1 large sheet of paper
- Marker and masking tape

Activity 15

Oral pH Test

Suggested levels: Grade 7 to Grade 10

ACTIVITY DESCRIPTION

- Show students the pH test strip and colour chart, and explain the concept of pH
- Ask for 3 volunteers
- Give the 3 students a strip about 2 cm wide and ask them to keep it in their mouth for about 10 seconds
- Using the pH colour chart, find out the pH for each student and write it on the blackboard
- Next, give each of the three students a different snack: candy, pop, and a piece of cheese
- WAIT 20 MINUTES - during this time, review the content of the posters: "Tooth Decay Process" and "How Much Sugar and Acid?"
- **After 20 minutes**, repeat the test with all three volunteers and a fresh pH strip
- Write down the pH for each student and compare with the previous result
- The results will show the effect of different types of food and drink on the level of acid in their mouth
- When their saliva is more acid (lower pH), it is attacking their tooth enamel and causing cavities
- Explain to students that there are some ways to make their saliva more pH neutral:
 - Avoid sugary food and pop, which contains a lot of sugar and acid
 - Eat a piece of cheese at the end of the meal to make the pH go up
 - Chew sugar free gum between meals
 - Rinse your mouth with water after eating
 - Brush your teeth with fluoride toothpaste after every meal; this is especially important at bedtime.
- Normal saliva should be between 6.2 and 7.

Activity 15

Suite: Oral pH Test

MATERIALS

- Posters: “Tooth Decay Process” and “How Much Sugar and Acid?”
- Minimum of 6 pH test strips
- pH test colour chart
- 3 different snacks: sugary cake or candy, a glass of pop and piece of cheese

OBJECTIVES

- Demonstrate how to measure oral pH and interpret results using pH test strips and a colour chart
- Show how some types of snacks (such as candy and pop) lower the pH level of saliva more than others, making it more acid
- Show how eating cheese after a meal makes the saliva less acid

Activity 16

Experiment With a Tooth in a Glass of Pop

Suggested levels: Grade 1 to Grade 6

Note for facilitator:

This activity takes 2 weeks. This activity is suitable for biology class or a science fair project.

ACTIVITY DESCRIPTION

- Ask the dental clinic for 2 sterilized human teeth. If possible, 1 healthy and 1 decayed
- Put the teeth under a microscope or magnifying glass (at least 3x) and let the students examine the decayed part(s) more closely, comparing the healthy and the decayed tooth
- Using gloves, put the decayed tooth in a jar of Coke or Pepsi and close the lid
- Put the jar in a safe place and wait 2 weeks
- After 2 weeks, use gloves to remove the tooth from the jar. Rinse it and put it on a paper towel
- Let the students look at the tooth again under a microscope and discuss the changes that have happened
- Discuss the effects of the cola on the tooth using the posters “Tooth Decay Process” and “How Much Sugar and Acid?”.

MATERIALS

- 2 sterilized teeth (ask the dental clinic)
- Surgical gloves
- 1 medium-sized transparent glass jar with a lid, such as a jam jar
- 1 can of Coke or Pepsi
- 1 microscope and/or magnifying glass
- Posters “Tooth Decay Process” and “How Much Sugar and Acid?”

OBJECTIVES

- Demonstrate how the sugar and acid in sweet drinks such as colas attack and weaken your teeth over time, eventually causing cavities to form
- Demonstrate the use of a microscope and/or magnifying glass.

VARIATION

Try the same experiment with 2 5-cent coins. After 2 weeks you will notice how the cola causes corrosion.

Activity 17

Quiz game

Suggested levels: Grade 9 to Grade 11

Note for facilitators:

Select questions based on the grade level.

ACTIVITY DESCRIPTION

- Cut out the questions, fold them and place them in a basket. Students take turns picking a question and answering it in class.

MATERIAL

- Handout 14

OBJECTIVES

- Test students' knowledge of oral health, especially the tooth decay process.

Answers

1. These drinks contain both sugar and acid. Sugar and acid work together to make your tooth enamel weaker and eventually cause cavities
2. Milk, cheese, vegetables, fruit, nuts, water, crackers, sugar-free gum
3. True
4. Old food sticking to your teeth and bacteria
5. Twice a year
6. At least 2 minutes
7. True
8. To make sure you don't have any cavities; to remove plaque
9. True
10. Any snack containing sugar including sweet drinks
11. Fluoride
12. True
13. Because bacteria in your mouth works all night to attack your teeth and cause cavities
14. Candy
15. After every meal
16. True
17. Because they contain a large quantity of sugar and acid.
18. True, it strengthens teeth enamel.
19. To eat properly, since they help us chew our foods, and to talk properly. Teeth also play an important role in our appearance.

Quiz Game



- 1 Why do sweet drinks like Coke, Gatorade, and Nestea cause cavities?
- 2 Name at least 2 snacks that are good for your teeth.
- 3 True or false? Fluoride toothpaste makes teeth stronger.
- 4 What does a toothbrush remove from your teeth?
- 5 How many times a year should you go for a checkup?
- 6 How many minutes should you brush your teeth?
- 7 True or false? Everyone in the family should have their own toothbrush.
- 8 Why should you go for a checkup, even if your teeth don't hurt?
- 9 True or false? The less candy you eat, the less chance you have of getting cavities.
- 10 Name at least 2 snacks that cause cavities.
- 11 _____ toothpaste makes your teeth stronger.
- 12 True or false? Eating cheese at the end of a meal is good for your teeth.
- 13 Why is it important to brush your teeth at bedtime?
- 14 Which of these 3 snacks causes cavities? Water, Candy, or Cheese?
- 15 When is a good time to brush your teeth?
- 17 Why drinks such as Coke, Gatorade and ice tea cause cavity?
- 18 True or false? Fluoride makes your teeth stonger and more resistant,
- 19 Why are teeth important?



Activity 18

Quick! Find the right answer!

Suggested levels: Grade 4 to Secondary 3

ACTIVITY DESCRIPTION

- Introduce the activity by explaining the role and use of the tooth brush, toothpaste, dental floss and mouthwash. Also remind what the 4 food groups are, while associating colors: green for the «Vegetables and Fruit», yellow for the «Grain Products», blue for the «Milk and Alternatives» and red for the «Meat and Alternative».
- Place questions from the following page in a bag or another container.
- On the floor or a large table, display cards representing foods and items related to dental health.
- Divide students in 2 to 4 teams.
- Ask them to sit on the floor around the food and dental health cards.
- In turn, ask each team to draw a question, read it out loud and find the card(s) corresponding to the answer(s).
- The winning team is the one with the most right answers.

MATERIAL

- Canada's Food Guide–First Nations, Inuit and Métis (1 copy per student)
- Dental health material : Tooth brush, Toothpaste, Dental floss, Mouthwash
- A bag or another container
- Cards representing foods and items related to dental health

OPTION

To add more questions, use questions from activity 2.

OBJECTIVES

- Allow students to differentiate foods that are good for their teeth from the ones that are less so.
- Allow students to recognize foods causing cavity.
- Allow students to revise the use of dental health material.

Activity 18

Answers:

1. Poutine
2. Pop, lolly pop, candies or cake
3. Blueberries, apple, berries or fruit salad
4. Tooth brush
5. Peanut butter or eggs
6. Milk
7. Mouthwash
8. Dental floss
9. Yogurt
10. Cheese
11. Toothpaste
12. Bannock, bread and cereals
13. Fish, goose, hare and moose
14. Pop, ice tea and Kool-Aid
15. Water
16. Healthy tooth
17. Sucre

Handout 18

Questions:

1 I'm made out of potatoes; contain a lot of fat and salt. I contain cheese but I'm a junk food.

2 I'm not in any of the food groups. I shouldn't be eaten as a snack because I contain too much sugar.

3 I taste sweet, but I contain natural sugars and vitamins. I'm in the green group.

4 You should use me least twice a day to keep your teeth clean. You must change me 4 times a year.

5 I'm a substitute in the red group, I contain proteins.

6 I'm in the blue group, I'm white and liquid. I keep your teeth and bones strong.

7 I help to keep your mouth fresh, but I don't replace your tooth brush.

8 I help to clean between your teeth.

9 I'm in the blue group, sometimes I contain fruits or fruit flavor.

10 I'm in the blue group. I'm white or orange. I'm good for your teeth.

11 I contain fluoride to help your teeth to be strong.

12 I'm in the yellow group; you may eat me for breakfast.

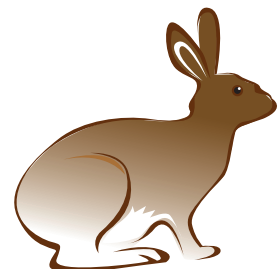
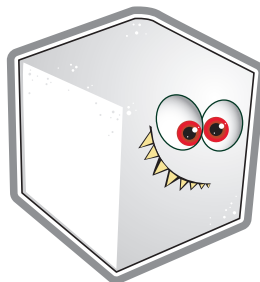
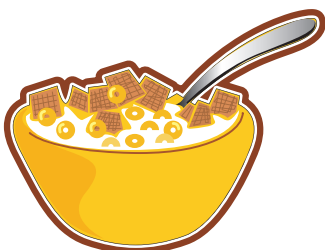
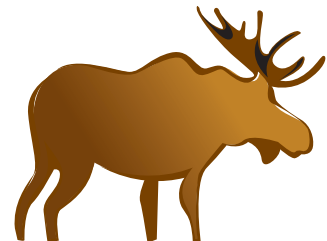
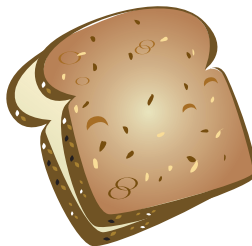
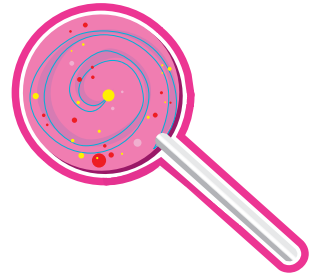
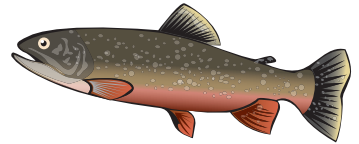
13 I'm in the red group. I'm not a substitute.

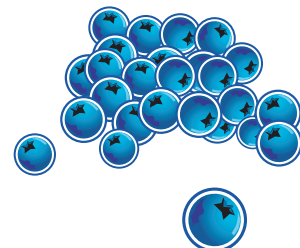
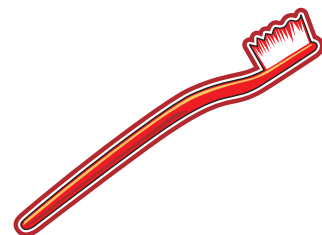
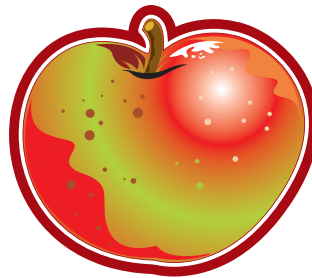
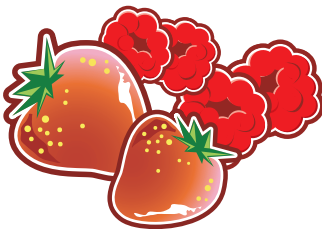
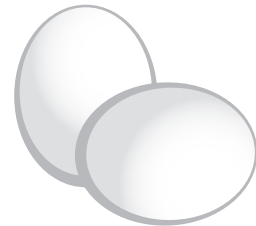
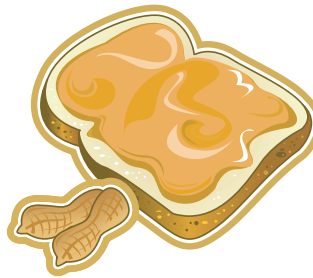
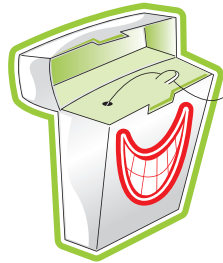
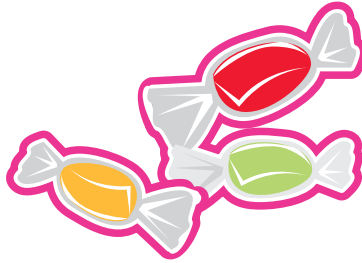
14 I am liquid, sweet and acid... I may cause tooth decay.

15 You may drink me, I am transparent. I do not damage your teeth.

16 You use me to chew your food; you need to take good care of me so I can stay healthy.

17 I am often added to tea or cakes, but I also hide in many beverages. I'm not good for your teeth.





Activity 19

ENVIRONMENTAL ACTIVITIES

Environmental Impact of Bottles

Suggested levels: Grade 5 and 6, Secondary 1 to 5

Note to the animator: Drinking water is essential to be healthy! This activity aims at encouraging students to drink tap water instead of bottled water since plastic wastes are harmful for the environment. This activity should not discourage overall consumption of water since it is essential!

ACTIVITY DESCRIPTION

- Introduce the activity by asking students to discuss the following:
 - What they prefer to drink; tap water or bottled water?
 - What factors influence this choice? (taste, cost, convenience, health, and environmental concerns, culture, everyone else is doing it, etc).
 - What are some of the problems associated with consumption of bottled water and other beverages? (Requires a lot of plastic to produce bottles; produces a lot of garbage, has to be transported long distances, costs a lot, may just be tap water from another place)
 - Using additional information about water and environment in the Section «Information for teachers», discuss time required for decomposition of plastic bottles and other materials.
- Distribute a copy of the handout to each student and ask them to calculate the quantity of waste related to their consumption of bottled water and other beverages.

MATERIAL

- Handout #19 (1 per student)

OBJECTIVES

- Allow students to practice their math skills.
- Allow students to realize the environmental impact of store bought beverages and foods.
- Allow students to be critical about the food industry and its environmental impacts.

Handout 19

Bottled Water and Beverages - How much waste?

1. You need to drink at least 2L of water every day, how many 1-Litre bottles would you throw away every year if you drink only bottled water?

2. In general, how many containers (bottles, cans and Styrofoam cups) do you throw away each day?
Each year?

3. How could you reduce your production of wastes?

Activity 20

Water Taste Test

Suggested levels: Grade 5 and 6, Secondary 1 to 5

ACTIVITY DESCRIPTION

- In this fun classroom activity, students are challenged to distinguish tap water and bottled water by taste alone.

Before the activity:

- Fill each jug with a different kind of water. Make sure you record what kind of water is in each jug in a secret place. Ideally, all the types of water should be at the same temperature.
- Use 4 desks as water taste test stations.

During the Activity:

- Challenge students to figure out which of four pitchers holds plain tap water.
- Have students circulate to each of the four desks, taste water from each pitcher and fill out the questionnaire card.
 - Students need to rate the taste of each water sample on a scale from 1 to 5, with 5 being the best taste.
 - They also need to guess which sample contains plain tap water.
- With the students, analyze the data from the questionnaire cards (See «Data Analysis Instructions» on the following pages).
- Find out how each of the water pitchers was rated by the students and which water they believe to be the tap water.
- Reveal which water pitcher contained tap water.

MATERIAL

- Small paper cups (1 per student)
- Student questionnaire cards (1 per student)
- 4 identical water pitchers: labeled A, B, C, and D
- Masking tape and a marker to label water pitchers
- Tap water
- 3 or 4 brands of bottled water
- Optional: home filter (such as Brita filter)
- Optional: computer to watch introductory «youtube» video

Activity 20

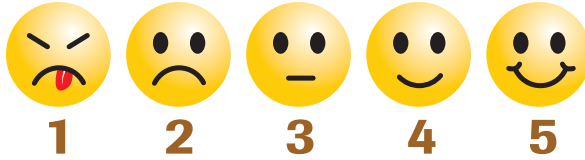
OPTION

Prepare the class by watching a funny 2-minute video: search for “tap water test” on «youtube» or enter the following link: <http://www.youtube.com/watch?v=v2qydjVbLjk>

OBJECTIVES

- Allow students to practice their math skills.
- Allow students to realize the environmental impact of store bought beverages and foods.
- Allow students to be critical about the food industry and its environmental impacts.

Water Taste-Test Challenge!



Rate the taste of each sample:

Pitcher A _____ Pitcher B _____

Pitcher C _____ Pitcher D _____

Which pitcher contains TAP WATER?

Water Taste-Test Challenge!



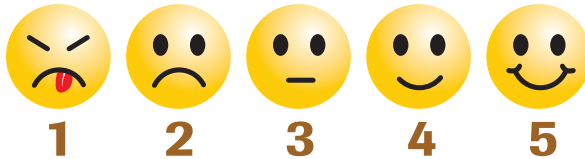
Rate the taste of each sample:

Pitcher A _____ Pitcher B _____

Pitcher C _____ Pitcher D _____

Which pitcher contains TAP WATER?

Water Taste-Test Challenge!



Rate the taste of each sample:

Pitcher A _____ Pitcher B _____

Pitcher C _____ Pitcher D _____

Which pitcher contains TAP WATER?

Water Taste-Test Challenge!



Rate the taste of each sample:

Pitcher A _____ Pitcher B _____

Pitcher C _____ Pitcher D _____

Which pitcher contains TAP WATER?

Water Taste-Test Challenge!



Rate the taste of each sample:

Pitcher A _____ Pitcher B _____

Pitcher C _____ Pitcher D _____

Which pitcher contains TAP WATER?

Water Taste-Test Challenge!



Rate the taste of each sample:

Pitcher A _____ Pitcher B _____

Pitcher C _____ Pitcher D _____

Which pitcher contains TAP WATER?

Handout 20

Instructions to analyze the results

Part 1: Rate the taste of each sample

1. Compile the results in a table on the blackboard:

Sample	Student Ratings	Mean Rating
Pitcher A		
Pitcher B		
Pitcher C		
Pitcher D		

2. Have the students calculate the arithmetic mean score for each type of water.
3. What kind of water did students prefer? How did tap water rate? Did one kind of water rate much better, or is it a matter of personal preference?

Part 2: Which pitcher contains TAP WATER?

Compile the data on the blackboard:

Sample	Number of votes
Pitcher A	
Pitcher B	
Pitcher C	
Pitcher D	

1. Have students present the findings as fractions or percentages (e.g.: 3/10 students thought that pitcher A contained tap water or 30% of students thought that pitcher A contained tap water).
2. Have students represent the data in a bar-graph.
3. Reveal the source of water in each pitcher. Were students able to correctly identify tap water? Was there a consensus?

Activity 21

The Bottled Water Debate

Suggested levels: Secondary 3 to 5

ACTIVITY DESCRIPTION

- Drinking water is essential to our health, but the bottled water industry has been criticized as environmentally harmful, costly, and deceptive. These five activities, which can be done as a sequence or separately, use controversy around bottled water to encourage students to be critical and to express themselves both orally and in writing.

Activities

1. Introduction: Express your preference

Ask students what they prefer to drink: tap water or bottled water?

What factors influence this choice (taste, cost, convenience, health, and environmental concerns, culture, everyone else is doing it, etc). Discuss as a class, or have students write a short paragraph expressing their preference.

2. What is being said about bottled water?

Consult: Health Canada's web site:

http://www.hc-sc.gc.ca/fn-an/securit/facts-faits/faqs_bottle_water-eau_embouteillee-eng.php#a10

Watch: «The story of bottled water» video (8 minutes)

<http://www.youtube.com/watch?v=Se12y9hSOM0>

Watch: Bottled Water vs. tap 20/20 news clip (7.5 minutes)

http://www.youtube.com/watch?v=_3QBZac3MSY

Activity 21

3. Advertising examined (as homework, or 50 minutes in class or computer lab)

Ask students to find an advertisement for bottled water, either on «youtube», or in a magazine. Assign a short essay in which the students include the following elements:

1. How does the ad present bottled water? (healthy, environmentally-friendly, pure, fun, etc)
2. How does the ad convey this message (images, sounds, slogans, etc)?
3. Critique this advertisement.

4. Debate: Should we ban bottled water? (50 minutes)

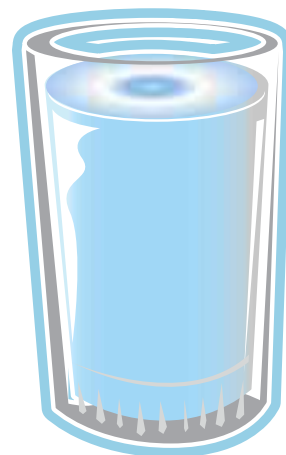
Here are some things to consider:

FOR bottled water

- People should make their own choice
- Healthier than other drinks like pop
- Good for the economy
- Etc...

AGAINST bottled water

- Environmental impact (plastic bottles, transportation, landfills)
- Cost of bottled water
- Water is a public resource
- Etc...



Activity 21

5. Creative marketing (50 minutes)

Assign students to design a 1-page advertisement for either tap water or bottled water. They may use markers, collage, or any other creative materials.

Consider:

- Who is the target audience (students, community members, parents?)
- What is the objective of the ad (to sell a product? To change behavior? To maintain a positive behavior? Something else?)
- How will the message be adapted to the audience?
- Will the ad use facts or appeal to emotions?
- What tone will the ad have? Informative? Funny? Alarming? Feel-good?
- What imagery will be used?

If possible, put the ads up in the school or local store!

MATERIAL

- Computer to watch «youtube» video clips (optional)
- Creation of posters: markers, collage, or any other creative materials

OBJECTIVES

- Allow students to develop information searching skills.
- Allow students to develop argumentative and persuasive reasoning.
- Raise students' awareness about environment.

