

Caffeine Check

Sugary Drinks Learning Activity

Action Schools! BC

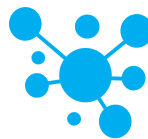


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Sugary Drinks

Some ingredients in sugary drinks (other than sugar), can damage our health. Caffeine may be one of them. Students will report how much caffeine is in drinks, and consider the effects of caffeine on their body.

CURRICULUM CONNECTIONS



BIG IDEAS

- Healthy choices influence our physical, emotional, and mental well-being.

CURRICULAR COMPETENCIES:

- Explore and plan food choices to support personal health and well-being.
- Describe the impacts of personal choices on health and well-being.
- Analyze health messages and possible intentions to influence behaviour.
- Identify, apply, and reflect on strategies used to pursue personal healthy-living goals.
- Explore strategies for promoting the health and well-being of the school and community.
- Describe and assess strategies for promoting mental well-being, for self and others.

CONTENT

- Influences on food choices.
- Sources of health information.



FIRST PEOPLES PRINCIPLES OF LEARNING FOR ALL STUDENTS

- Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors.
- Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).
- Learning involves recognizing the consequences of one's actions.

COMPREHENSIVE SCHOOL HEALTH CONNECTIONS



RELATIONSHIPS AND ENVIRONMENTS

- Students talk with another class about the effects of caffeine on the body.

TEACHING AND LEARNING

- Learning that caffeine is found in drinks like cola, iced tea, coffee-based drinks, and energy drinks is important. Understanding that children may become nervous, irritable, and have problems sleeping if they have caffeine.

OUR SCHOOL POLICIES

- Ensure no caffeinated beverages are sold at school functions.

PREPARATION

- Review the *Sugary Drinks* section of the *Healthy Eating Overview* (included with this activity).
- Prepare *Caffeine Symptoms* cards, copy and cut into cards (included with this activity).
- Review *Caffeine Scenario* (in Educator Backgrounder section with this activity).
- Copy *Caffeine Check Handout* one per student (included with this activity).

IMPLEMENTATION IDEAS

- Gather the students in a circle to begin this inquiry. Circles represent important principles in the First Peoples worldview and belief systems, especially interconnectedness, equality, and continuity (<http://firsnationspedagogy.ca/circletalks.html>).
- Hand out a *Caffeine Symptoms* card to each student. Ask those students to listen carefully to the story and “act out” their symptom when it comes up in the story.

- Read the *Caffeine Scenario* (in *Educator Backgrounder* section) to the class.
- Prompt a discussion using questions such as:
 - How did Tom feel?
 - What drinks did he have?
 - Have you ever had similar experiences?
 - What would have been better choices for Tom?
- Explain to students how caffeine affects the body and mind. Discuss ways to support positive mental well-being like healthy eating, physical activity, listening to music, and getting enough sleep.
- Distribute *Caffeine Check* handout and have students complete it.
 - Q:** What is the maximum amount of caffeine that students can have in one day?
 - A:** Health professionals suggest students aged 7 to 12 consume no more than 65 - 85 mg of caffeine each day. One cup of coffee in an adult's body will have the effect of 4 cups of coffee in a student's body.
 - Q:** Where might students find caffeinated drinks?
 - A:** Coffee shops (e.g., iced coffee, mochas, fraps, etc), grocery stores or gas stations (e.g., Red Bull/Energy drinks), recreation centres, movie theatres, etc.
 - Q:** How much did Tom drink?
 - A:** 369 mg
 - Q:** Ask students if they can explain why some drinks are not allowed to be sold to students and why there is a limit on the size of juices that can be sold to students.
 - A:** The *Guidelines for Food and Beverage Sales in BC Schools* do not allow pop, sports drinks, energy drinks, vitamin waters, and fruit drinks to be sold to students at school. This is due to the high sugar and/or caffeine content, and/or the addition of medicinal or non-medicinal ingredients (herbs, creatine, taurine, etc.) present in these drinks, and the negative effect they can have on students' health.
- Artificially sweetened items cannot be sold in elementary or middle schools because there is a desire to minimize children's consumption of these products outside of parental supervision. Drinks sold at school cannot be fortified with vitamins other than vitamin C, or with minerals other than calcium. Some non-medicinal ingredients and herbs in some drinks may not be acceptable for children.
- Share that holly leaves and buds were used traditionally by First People as stimulants as they have highest known caffeine amount in any plant. In fact, holly leaves and buds contain theobromine and caffeine like cocoa and coffee.

EXTENSION OF LEARNING

- To further support mental well-being, set up a "Wellness Ways" Wall - a visual tracking system (e.g., mural paper) for students to record activities they do to keep mentally well (e.g., healthy eating, physical activity, listening to music, getting enough sleep, etc.).
- Have students record their beverage choices using the *Drink Journal* extension activity, attached.

RECOMMENDED RESOURCES



- Sip Smart! BC™ (<http://www.bcpeds.ca/Programs/sipsmart.aspx?MenuID=3347>)
- BC Ministry of Education – *Guidelines for Food and Beverage Sales in BC Schools (F)* (<http://healthyschoolsbc.ca/program/395/guidelines-for-food-and-beverage-sales-in-bc-schools>)
- HealthLink BC (www.healthlinkbc.ca)
- Call 811 and speak with a registered dietitian
- Energy Drinks (<https://www.healthlinkbc.ca/healthlinkbc-files/energy-drinks>)

EDUCATOR BACKGROUND

CAFFEINE SCENARIO

(TO BE READ TO CLASS)

- It is a hot and sunny day at the beach.
- Tom is thirsty and goes to the concession stand and buys a can of ICED TEA. It's delicious and refreshing.
- He feels fit to play beach volleyball for another hour!
- After an awesome game, he craves something to pick him up while cooling him down, so he buys a medium ICED COFFEE for the walk home.
- Once at home, he remembers that he has a test in school tomorrow. He sits at his desk and starts reading. He notices his **mind wandering** and his **heart beating too fast**. He is getting a headache. He also has to **go to the bathroom** way more often than usual.
- An hour later he feels tired, but he still has to study for the test. In the fridge he finds an ENERGY DRINK. He remembers that the commercial for this drink says that it wakes you up and gives you energy immediately. Exactly what he needs to focus on his studies!
- Later, **feeling sick**, he decides to go to bed early. He feels **fidgety and restless**. The next morning he is **irritable** with his friends and anxious about just about everything.
- *What happened?*



CAFFEINE

- Caffeine is a mildly addictive stimulant drug that stimulates the central nervous system and can cause side effects including: irritability and restlessness, difficulty concentrating, and an increased need to urinate.
- Caffeine occurs naturally in some drinks (coffee, tea and hot chocolate) and is added to others (cola and energy drinks).
- Nutrition labels rarely include the amount of caffeine contained in a food product.
- Some of the ingredients indicating the presence of caffeine in a food or drink include: coffee or coffee beans, green or black tea leaves, guarana, yerba/yerba mate, and cocoa beans.
- Health professionals suggest that children aged 7-12 get no more than 65 - 85 mg of caffeine each day, as even low levels of caffeine can affect most children's behaviour. Withdrawal symptoms may be felt by children consuming even small amounts of caffeine. Symptoms might include headaches, irritability and restlessness.

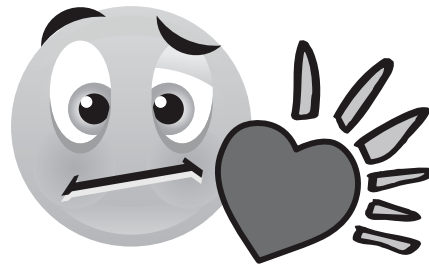
Adapted from: Sip Smart! BC™

Caffeine Symptoms

Mind wandering



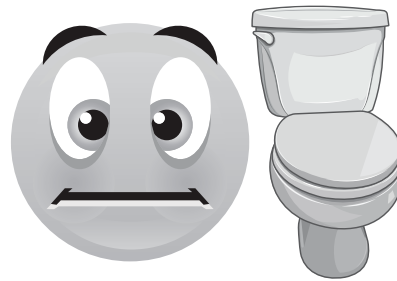
Heart beating too fast



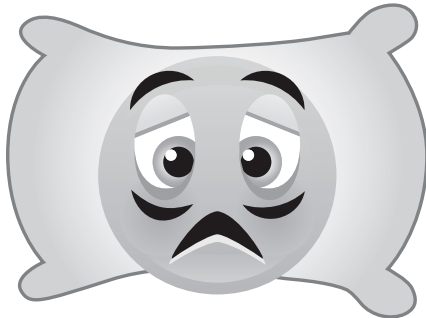
Headache



More trips to the bathroom



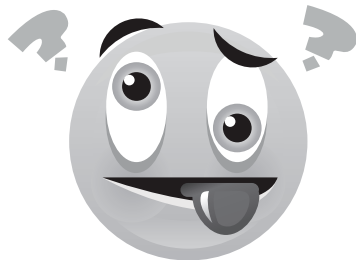
Tired / trouble sleeping



Feeling sick



Fidgety and restless



Irritable and anxious



NAME _____

Caffeine Check

Nutrition Facts Tables rarely include the amount of caffeine contained in beverages.
Use this guide to help you estimate the caffeine hidden in popular drinks.

DRINK	SERVING SIZE (ML)*	CAFFEINE (MG)
Hot Chocolate	300 ml	8 mg
Cola	355 ml	40 mg
Iced Tea	355 ml	25 mg
Root Beer	355 ml	40 mg
Energy Drink	250 ml	130 mg
Coffee (regular)	350 ml	186 mg
Coffee (decaf)	350 ml	4 mg
Iced Coffee	500 ml	214 mg
Black or Green Tea	250 ml	30 mg
Tea (decaf)	240 ml	1 mg

* Serving sizes provided may differ from your drink container.



How much caffeine did Tom drink?

Iced Tea _____ mg
 Iced Coffee + _____ mg
 Energy Drink + _____ mg
 TOTAL = _____ mg

What is the maximum amount of caffeine
that kids aged 7-12 can safely have in one day?

_____ mg

Adapted from: Sip Smart! BC™

NAME _____

Drink Journal

Think back to everything you drank yesterday. Use the chart below to record what you drank, and how much.

WHEN	TYPE OF DRINK	CIRCLE THE SIZE OF YOUR DRINK				HOW MANY
Breakfast		S	M	L	XL	
		S	M	L	XL	
Recess/Break		S	M	L	XL	
		S	M	L	XL	
Lunch		S	M	L	XL	
		S	M	L	XL	
After Lunch		S	M	L	XL	
		S	M	L	XL	
Dinner		S	M	L	XL	
		S	M	L	XL	
After Dinner		S	M	L	XL	
		S	M	L	XL	

DRINK SIZES:

S	M	L	XL
SMALL 250 ml or less	MEDIUM 251-591 ml	LARGE 592 ml-1 litre	EXTRA LARGE more than 1 litre

Drink water – it's always a great choice!

Inspired by: Sip Smart! BC™

SUGARY DRINKS OVERVIEW

This section of the *Healthy Eating Overview* will explain what is meant by ‘sugary drinks’, provide tips and tools for assessing popular drinks and share information relating to the levels of caffeine found in many of these drinks. Find the complete *Healthy Eating Overview* at www.actionschoolsbc.ca/resources.

KEY MESSAGES

Some drinks don’t fit into the four food groups in *Eating Well with Canada’s Food Guide* or *Eating Well with Canada’s Food Guide – First Nations, Inuit and Métis*.

- Sugar is a major ingredient in many popular drinks.
- Knowing what is in drinks helps us to make healthy choices.
- The number and size of servings we drink affects the amount of sugar we consume.
- Drinking sugary drinks “bumps out” nutritious drinks.
- Some ingredients in sugary drinks other than sugar, such as acid and caffeine, may damage our health.
- Drink choices can be influenced by various factors, including family, friends, and the media.
- We can decide for ourselves to make healthy drink choices.
- Drink water – it’s always a great choice!

Adapted from: Sip Smart! BC™

What Are Sugary Drinks?

Added Sugars



- Sugary drinks are drinks (carbonated or not) that contain added sugars. These can include:
- Pop or soft drinks
- Energy drinks
- Hot chocolate
- Store-bought smoothies
- Slushes
- Fruity drinks (e.g., “punches”, “cocktails”, or “ades”)
- Sports drinks
- Flavoured or vitamin-enhanced waters

Added sugars are sugars and syrups that are added to drinks or food during processing (e.g., sugars added to soda by the manufacturer) or preparation (e.g., sugars added to a cup of coffee after it was bought at the coffee shop). Sugary drinks often have little to no nutritional value. For examples, children and adolescents who drink pop regularly are more likely to have lower intakes of calcium and other nutrients.

Sugary drinks are heavily marketed, available in many locations, and often displayed at the eye level of children. These drinks can contribute to unhealthy weight, which puts a child at increased risk of high blood pressure, heart disease, type 2 diabetes, cancer and other health problems. A healthy weight, on the other hand, supports the mental, physical and social health and well-being of individuals, families and communities.

Naturally Occurring Sugars

Naturally occurring sugars are no different from added sugars in terms of their effects on the body. However, because drinks with naturally occurring sugars often contain important nutrients, they can be consumed in moderation as part of healthy eating. Some drinks with naturally occurring sugar are 100% fruit juice (contains fructose), and plain milk (contains lactose).

Hidden Sugars



Hidden sugars are other names for added sugars that might not sound or look like sugar. These include: sucrose, dextrose, maltose, galactose, liquid glucose-fructose, invert sugar, raw cane sugar, brown sugar, corn sweetener, high-fructose corn syrup, rice syrup, fruit juice concentrates, honey, malt syrup, and molasses.

Juice and Fruity Drinks



The difference between 100% fruit juices and “fruity drinks” (e.g., “fruit beverages”, “fruit drinks”, “fruit cocktails”) can be a difficult concept for students to grasp, but is a very important teaching point. Although the majority of added sugar consumed by students often comes from these drinks, they – and often their parents – may not know the difference between 100% fruit juice and fruity drinks.

100% fruit juice contains some of the natural vitamins (such as vitamin C, potassium and B-vitamins) found in fruit. However, fruit juice still contains a lot of concentrated sugar, and has the same effect on teeth as other sugary drinks. For this reason, children should have no more than 1 serving (125ml, 1/2 cup) of 100% fruit juice daily. A healthier alternative to 100% fruit juice would be a glass of water and a piece of fresh fruit, which provides all the vitamins, minerals, and fibre naturally present, but with much less sugar. Juice is not a necessary part of a healthy diet. Fruits and vegetables are!

What About Artificial Sweeteners?



In keeping with the Guidelines for Food and Beverage Sales in B.C. Schools, drinks sweetened with artificial sweeteners such as aspartame, acesulfame potassium and sucralose are not allowed for sale in elementary and middle schools. Just like sugary drinks, artificially sweetened drinks get children used to sweet-tasting, non-nutritious items. They provide none of the nutrients that a child’s growing body needs to be healthy and strong, and can bump healthy foods and drinks out of a child’s diet. These drinks may also contain artificial sweeteners in amounts that exceed the acceptable daily intake (ADI) for children.

Energy Drinks



Energy drinks contain as much or more added sugar than cola, are high or very high in caffeine, and often contain potentially harmful additives. Energy drinks are often marketed with images of extreme sports such as competitive downhill skiing, biking, snowboarding and skateboarding, with the implication that these drinks boost performance. Others, with flashy packaging and enticing names are designed to directly target the youth market.

Energy drinks are very high not only in sugar, but also in caffeine. For example, a 500mL can of a typical energy drink contains 160mg of caffeine. That is more than double the suggested daily caffeine maximum for a 7-12 year-old child.

Many energy drinks also contain stimulant herbs or other substances such as guarana and taurine. These additives are often listed misleadingly as “medicinal ingredients” on energy drinks, when in fact they are untested and potentially harmful, especially for children. Like sports drinks, energy drinks also tend to contain artificial flavours and/or colours.

When consumed in large amounts, or when combined with alcohol, energy drinks have been linked to serious health effects such as irregular heart function, nausea and vomiting, and electrolyte disturbances. Energy drinks can also interact with some medications.¹

Milk, Flavoured Milk and Other Beverages Made With Milk



Milk and milk alternatives (e.g., unsweetened fortified soy beverage) are the main source of calcium and Vitamin D in most Canadian diets. Both calcium and vitamin D help build and maintain strong bones and teeth. Plain milk is also a source of protein, vitamin A and riboflavin.

One cup (250mL) of plain milk = 1 serving from the Milk and Alternatives food group in *Eating Well with Canada's Food Guide* and in *Eating Well With Canada's Food Guide – First Nations, Inuit and Métis*. Children aged 4-13 should aim for 2 to 4 Food Guide Servings of Milk and Alternatives each day.

Adding vanilla, chocolate, strawberry and other flavours to plain milk can add a lot of extra sugar. It is best to offer children plain (not flavoured) milk regularly so they learn to enjoy it. If making flavoured milk at home, add a small amount of syrup or powder. Less is best.

Drink water – it's always a great choice!

Adapted from: *Sip Smart! BC™*



References:

1. Sip Smart! BC™ (<http://healthyschoolsbc.ca/program/298/sip-smart-bc>)