4-H Ontario

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4-H ONTARIO PROJECT

Milk Makes It Better

LEADER RESOURCE

4-H Ontario

The 4-H Pledge

I pledge my Head to clearer thinking,
my Heart to greater loyalty,
my Hands to larger service and
my Health to better living
for my club, my community and my country.

The 4-H Motto

Learn To Do By Doing

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Milk
Dairy Farmers of Ontario

INTRODUCTION

Welcome to 4-H Ontario's Milk Makes It Better project!

Dairy products are an important part of your daily health eating plan. They provide nutrients, especially protein, calcium and energy for your body. Throughout this project, you will explore and taste many different dairy products and learn how to use them in many different recipes.

Objectives

1. To understand why milk and milk alternatives are important to an overall healthy eating plan.
2. To learn why calcium is so important to the human body.
3. To understand the pasteurization process and its importance.
4. To explore the many products made from milk and the processes used to make them.
5. To learn what milk alternatives are available.
6. To learn new skills in preparing and cooking food containing milk, milk products and milk alternatives.

How to Use This Manual

4-H Ontario's Milk Makes It Better project is made up of 3 parts:

1. The Reference Book:

The reference book is comprised of six meetings:
Meeting 1 – Milk – The Bone Builder
Meeting 2 – Magnificent Milk!
Meeting 3 – Say Cheese!
Meeting 4 – Get Cultured!
Meeting 5 – Get the Scoop!
Meeting 6 – Dairy Every Day

Each meeting has been broken down into an introduction with Sample Meeting agendas, References and Resources, Topic Information and Activities.

Sample Meeting Agendas are at the beginning of each meeting. The agendas give suggestions for topic information, activities, recipes and judging and/or communications activities along with suggested times for each section. These are only suggestions – you will know your group best and will know the skill and attention level of your Members.

There is more topic information and activities than what can be completed in a two hour meeting. Be creative!

Activities should be used in combination with the discussion of topic information to teach Members in a hands-on, interactive learning environment.

2. The Record Book

This booklet is designed to make it easier for Members to record information throughout the club. Members are to record their expectations and goals for the project in addition to contact information, meeting dates, roll calls and records of recipes made at the meetings and at home. Print or photocopy pages from the Reference Book that you think will benefit the Members either as a resource or an activity. Answers for the Activity Pages can be found at the back of the Record Book.

The Record Book should be given to each Member at the beginning of the first meeting. Ask Members to keep it in a binder or duo tang so they can add to it easily.
Go through the Record Book with the Members and explain the charts and forms. Encourage them to use their Record Books at every meeting and record as much information as possible. As an added incentive, a prize could be given at the end of the project for the best Record Book.

3. The Recipe Book

This booklet includes several recipe options, divided by meeting. You are encouraged to try one of the recipes with the Members at each meeting to give a hands-on, guided experience in preparing a recipe using milk, milk products or milk alternatives. Each recipe provides information on ingredients needed, directions, preparation and cooking/baking times and the yield of the recipe (number of servings).

Planning a Meeting

Plan your meetings well. Review all the information well in advance so you are prepared and ready to cook up a storm!

Before Each Meeting:

- Read the topic information and activities and photocopy any relevant resources for the Members' Record Books.
- Be familiar with the topic information for each meeting. Think of imaginative ways to present the information to the Members. Do not rely on just reading the information out loud. Review available resources, plan the meetings and choose activities and themes that complement the ages and interests of your Members. The Record Book contains extra activities that can be used if you need to fill in time or if one of the suggested meeting activities does not suit your group of Members.

- Gather any equipment, ingredients and/or resources that will be needed to complete the meeting.
- Each 4-H project must be held over a period of at least 4 separate meetings, totaling a minimum of 12 hours. Typically, 4-H meetings are approximately 120 minutes (2 hours) in length. Before each meeting, create a time line to ensure that you are providing an adequate amount of instructional time for club completion.

Included on the following page is a Leader's Planning Chart to help with the planning of meetings. In addition to the chart, keep track of what went well and what should be changed next time. That way, each time this project is run, the content of the meetings can be different!

When planning each meeting, a typical 4-H meeting agenda should include the following:

- Welcome & Call to Order
- 4-H Pledge
- Roll Call
- Parliamentary Procedure:
  - Secretary's Report
  - Treasurer's Report (if any)
  - Press Report
  - New Business: local and provincial 4-H activities/opportunities, upcoming club activities
- Meeting content, activities and recipes
- Clean-up
- Social Recreation and/or refreshments
- Adjournment

Judging and Communications:

Each meeting must include either a judging or public speaking activity.

- Judging gives the Members an opportunity to use judging techniques as part of the learning process. Through judging, Members learn to evaluate, make decisions and communicate with others. They also develop critical thinking skills, confidence and self-esteem. Many examples are used in this reference book but use your imagination! As long as Members are setting criteria and critically thinking about where items fit within that set of criteria, they are learning the basic skills of judging!
- A communications activity has been provided for each meeting but can be included in the Roll Call or social recreation time. These activities do not need to involve the topic of milk as the outcome is more about understanding the concepts of effective communication.

Leader's Planning Chart

Mtg.#	Date/Place	Topics Covered	Activities	Materials Needed

As a Club Volunteer Your Responsibilities Are To:

- Complete the Volunteer screening process and attend a volunteer training session.
- Notify the local Association of the club, arrange a meeting schedule and participate in club meetings, activities and the achievement program.
- Review the project material in the Reference, Record and Recipe books to familiarize yourself with the information and adapt it to fit your group. Be well organized and teach the material based on your group's age, interest and experience level.
- Organize the club so Members gain parliamentary procedure, judging and communication skills.
- Have Membership lists completed and submitted along with fees collected (if applicable) by the end of the second meeting.
- Have Members fill out a Participant Agreement Form and identify any health concerns. Ensure that all Members, Leaders and parent helpers know the appropriate actions during any emergency. **CHECK WITH MEMBERS FOR ANY FOOD ALLERGIES OR DIETARY RESTRICTIONS** and plan recipe selections for each meeting accordingly.

As a Club Member Your Responsibilities Are To:

- Participate in at least 2/3 of your club meeting time. Clubs must have a minimum of 12 hours of meeting time.
- Complete the project requirement to the satisfaction of the club Leaders.
- Take part in the project Achievement Program.
- Fill in and complete the Record Book.
- Make a number of recipes and record results (the number is up to the Leader's discretion).

Achievement Program Ideas/Suggestions:

- Invite parents/grandparents, etc. to a dinner where each Member has made a milk-related recipe.
- Volunteer at a local food shelter.
- Hold a bake sale where Members have made a milk-related recipe to sell.
- Make a display and set it up at a local mall, grocery store or local agricultural fair that details the importance of milk and milk alternatives.
- Have Members enter in a local agricultural fair in the Culinary Arts section of the fair (if the local fair provides categories related to milk products).
- Create a skit about milk and its benefits and present it at a school assembly, seniors home, community function/festival, etc.

Special Projects

These projects are done outside of meeting time and are for Members interested in doing more – often senior Members. It's up to you as the leader to decide if you will require Members to complete a Special Project for club completion. Some ideas include:

- Write 3 press releases on milk topics.
- Research the dairy industry in another country and compare it to practices here in Canada.
- Research the topic of supply management in the dairy industry – when and why it was created.
- Create a display outlining the benefits of milk for human health.
- Create a video about milk and post it on YouTube.

Tour Ideas

- Visit different dairy farms – farms with pipeline, parlour and/or robotic milking systems
- Go to a grocery store to investigate the different types of milk products and milk alternatives.
- Visit a milk processing facility.

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4-H Ontario

Glossary of Terms

Aged Cheese that has been aged between 10 months to 1 year.

Beneficial, friendly or helpful bacteria Bacteria that naturally inhabit our digestive tracts and help us to digest foods and help keep our bodies healthy by controlling harmful bacteria and other microorganisms.

Bloomy rind A white, velvety ring usually found on soft cheeses. It's produced by spraying the cheese surface with penicillium.

Blue veined Cheese that's been treated with penicillium and perforated with needles which allow air to enter the cheese and promote the growth of blue mould.

Brine A solution of salt water in which some cheeses are stored.

Buttermilk has a tangy flavor, a smooth rich body and most often contains 1% milk fat. A "culture" is added to give buttermilk its consistency and flavour.

Calcium is necessary for bone and tooth growth and maintenance. It also plays a role in transmission of nerve impulses, proper hormone function, blood clotting and muscle contraction.

Carbohydrates (lactose sugar) supply energy.

Chocolate Milk is milk to which a flavour is added. In Ontario, regular chocolate milk is usually made from 1% milk fat and contains vitamin D. Chocolate or cocoa are used as the flavouring agent.

Coagulation is what happens when milk solidifies and curds form.

Concentrated Milks include evaporated milk, sweetened condensed milk and powdered milks.

Cream is a natural component of fresh, whole milk and is the ingredient required to make butter.

Curd The solids formed during coagulation, in the early stages of cheese making. Curds are subsequently pressed and aged or enjoyed as is.

Emulsifiers Natural substances added to cream that help blend the fat and water and maintain a creamy texture.

Enzyme A microbial substance used to promote the curdling of milk (i.e. rennet, pepsin).

Extra aged Cheese that has been aged 2 to 7 years but not designated by year.

Fermentation A chemical reaction induced by living or nonliving ferments, such as bacteria and yeast, that split complex organic compounds into new, simpler compounds.

Homogenization The mechanical process of incorporating the natural fat globules into the liquids in milk to keep them blended.

Lacteeze and ***LactAid*** are lactose-reduced milks available in 2% or skim. These milks contain the same nutrients as regular milk. They are suitable for individuals who are lactose intolerant.

Lactose The sugar that naturally occurs in milk.

Magnesium aids in the formation of strong bones and teeth. Needed for tissue formation and energy release within cells.

Marbled A cheese made with orange and white curds pressed together.

Medium Cheese that has been aged from 4 to 9 months.

Milk Ingredients The different forms (liquid, concentrated, dried, frozen) of milk fat and milk solids (non-fat) that are used as ingredients in dairy products.

Modified Milk Ingredients Ingredients that are derived from milk but have been altered, such as calcium reduced skim milk, whey cream, whey butter, cultured milk products, casein and milk protein concentrates.

Nutty A cheese with the flavour or aroma of fresh hazelnuts or almonds that occurs from the cultures used in specific cheeses.

Organic Milk has recently entered the market. There is virtually no difference between organic milk and regular milk. Both milks contain the same amount of nutrients, the taste is the same and both are pasteurized. The only difference is in the feeding and management of the cows.

Pasteurize The process of heating milk to a specific temperature, for a specified time to destroy any potential harmful microorganisms and increase its shelf life.

Penicillium The family of moulds that are cultured on the surface of soft cheeses to produce “bloomy” rinds.

Phosphorous aids in energy release and tissue formation.

Prebiotic Fibre Prebiotic fibre promotes and enhances the activity of beneficial bacteria that naturally inhabit our digestive tracts and help us to digest foods and keep our
bodies healthy by controlling harmful bacteria and other microorganisms.

Probiotic Culture Also called beneficial or helpful bacteria. Bacteria that, administered in adequate amounts, naturally inhabit our digestive tracts and help us to digest foods and keep our bodies healthy by controlling harmful bacteria and other microorganisms.

Protein builds and repairs body tissues. Builds antibodies – the blood components which fight infection.

Raw Milk, or unpasteurized milk, is not recommended because it can spread diseases such as salmonella and tuberculosis. For this reason, the sale of unpasteurized milk is illegal in Canada.

Rind The protective external layer of a cheese. Rinds can be naturally or artificially created and either washed or brushed.

Ripening The process and methods by which cheese matures and develops distinctive qualities. Length of time, temperature and humidity are determining factors. Ripening can start from the surface (CaMembert), the interior (Cheddar), or both.

Salting A step, prior to or following pressing, where cheese is dry-salted or immersed in brine.

Shelf Life The length of time a product will be at its best for flavour, texture and aroma.

Soy Beverages are not milks. They are a liquid extracted from grinding soybeans and water. The beverage is used as an alternative for those who cannot or choose not to drink milk.

Stabilizers are added to the ice cream mixture to keep the ice crystals small and evenly dispersed and provide a creamy texture to the frozen product. Some stabilizers used in commercial ice creams are: guar gum (flour from a bean seed) and locust bean gum.

Vacuum Packing A method of packaging where cheese is placed in a plastic envelope, the air is removed and the package is sealed. This prevents the cheese from drying out and restricts mould growth.

Vitamin A helps normal bone and tooth development. Promotes good night vision. Maintains health of skin and membranes.

Vitamin B6 assists in the formation of red blood cells.

Vitamin B2 (also known as riboflavin) maintains healthy skin and eyes. Releases energy within cells.

Vitamin B12 contributes to red blood cell formation.

Vitamin D enhances calcium and phosphorous utilization in the formation of healthy bones and teeth.

Whey is the liquid component left in the making of cheese once the solids from the milk have been separated out to form curd.

Whole Milk is defined as milk that contains at least 3.25% milk fat. When a portion of the milk's fat is removed, it is called partly skimmed milk. The most common partly skimmed milk contains 2% fat and is called 2% milk; 1% milk contains 1% fat; skim milk refers to milk which has had virtually all of the fat removed. The level in skim milk is about 0.1%.

Additional References and Resources

About.com Home Cooking www.homecooking.about.com
All About Perth.com www.all-about-perth.com
BC Dairy Foundation www.bcdairyfoundation.ca
BC Living www.granvilleonline.ca
Breyers www.breyers.ca
Canadian Dairy Information Centre www.dairyinfo.gc.ca
Canadian Living www.canadianliving.com
Chapman's Ice Cream www.chapmans.ca
Company's Coming Cookbooks www.companyscominng.com
Dairyland www.dairyland.ca
Dairy Farmers of Canada www.dairyfarmers.ca and www.dairygoodness.ca
Dairy Farmers of Ontario www.milk.org
Dietitians of Canada www.dietitians.ca
Disney Family Fun www.family.go.com
Easy Kid's Recipes www.easy-kids-recipes.com
Education World www.educationworld.com
Farm and Food Care www.farmfoodcare.org
Food Network Magazine www.foodnetwork.com
Gay Lea Foods Co-operative www.gaylea.com
Government of Alberta, Agriculture and Rural Development www.agric.gov.ab.ca
Health Canada www.hc-sc.gc.ca
Hewitt's Dairy www.hewittsdairy.com
Kid's Health www.kidshealth.org
Kraft Foods www.kraftcanada.com
Mayo Clinic www.mayoclinic.com
National Institutes of Health http://www.niams.nih.gov/Health_Info/Bone/Bone_Health
Nestle Canada www.nestle.ca
Ontario Agri-Food Education Inc. www.oafe.org
Ontario Ministry of Agriculture, Food & Rural Affairs www.omafra.gov.on.ca
Osteoporosis Canada www.osteoporosis.ca
Parmalat Canada Inc. www.parmalatcanada.ca or www.beatrice.ca
President's Choice www.presidentschoice.ca
School Milk Foundation of Newfoundland & Labrador www.schoolmilk.nl.ca
Shaw's Ice Cream www.shawsicecream.com
The Calorie Counter www.caloriecounter.com
The Canadian Cheese Insider's Guide, Dairy Farmers of Canada www.allyouneedischeese.ca
The Kawartha Dairy Company www.kawarthadairy.com
University of Guelph, Dairy Science & Technology www.foodsci.uoguelph.ca/dairyedu/home.html

MEETING 1 MILK - THE BONE BUILDER

Objectives:

- Learn the election procedure for establishing an executive.
- Learn why calcium is important.
- Learn about the Milk and Alternatives group as part of Canada's Food Guide.

Roll Calls

- Name a food you ate today that belongs in the Milk and Alternatives food group.
- What is your favourite thing made from milk?
- How can you boost your calcium intake?

Sample Meeting Agenda – 2 hrs. 25 minutes

Welcome, Call to Order & Pledge		10 min
Roll Call		5 min
Public Speaking/Judging Activity	Activity #1 – Get to Know Each Other Game "Nice Meeting You"	20 min
Parliamentary Procedure	Elect executive, hand out Record Books and discuss club requirement. Fill out club and Member information in Record Books, and have each Member fill out their "Member Expectations and Goals" page. Election & Parliamentary Procedure information can be found at the beginning of Meeting #1	20 min
Topic Information Discussion	Discuss the importance of milk and Canada's Food Guide. Review Baking Basics and Kitchen Safety (found in the Recipe Book).	20 min
Recipe	Choose a recipe from the Meeting #1 list in Recipe Booklet.	25 min
Topic Information Discussion	Discuss the importance of calcium and exercise for healthy bones.	20 min
Activity Related to Topic	Complete the "How Well are You Feeding Your Bones" exercise.	15 min
Wrap up, Adjournment, Social Time and enjoy the recipe!		10 min
At Home Challenge	Prepare one of the recipes listed for Meeting #1 and record the results in the Record Book.	

Electing Your Executive

Elections can be chaired by a Youth Leader, senior Member or club Leader. The person chairing the elections is not eligible for any positions.

Procedure:

1. All positions are declared vacant by the chairperson, who indicates this by saying "I'd like to declare all positions vacant."
2. The group decides on the method of voting (i.e. show of hands, ballot, standing).
3. The chairperson accepts nomination from Members for each position being filled. Nominations do not require a seconder. Nominations are closed by motion or declaration by the chairperson.
4. Each Member nominated is asked if he/she will stand for the position. Names of Members who decline are crossed off.
5. Voting takes place by selected method and majority rules (i.e. Member with most votes).
6. Announce the name of the successful Member. Offer congratulations and thank all others that ran for the position.
7. If ballots are used, a motion to destroy the ballots is required and voted on.

Steps in Making a Motion

The motion is a very important part to having good meetings. Motions are a way of introducing topics for discussion and allowing each Member to speak and vote. Any Member can make a motion.

Steps in Making a Motion:

1. Address the chairperson (i.e. raise your hand).
2. Wait for the chairperson to acknowledge you.
3. Make the motion: "I move that…"
4. Another person seconds the motion: "I second the motion."
5. Chairperson states the motion.
6. Chairperson calls for discussion of the motion.
7. Chairperson calls the vote: "All in favour? Opposed?"
8. Chairperson announces the result of the vote: "Motion carried" or "Motion defeated."

Topic Information

Ice cold milk, smooth and creamy yogurt, cheese from around the world and many other milk and alternatives can be enjoyed on their own or combined with other foods to make everything from appealing appetizers and dips, salads and dinner dishes to delicious desserts. Milk and alternatives provide protein, vitamins including vitamin A and D and minerals including calcium, phosphorous and magnesium. It's important to have 500 mL (2 cups) of milk every day for adequate vitamin D for healthy bones. If you don't drink milk, choose a fortified milk alternative beverage.

Milk and Alternatives form one of the food groups that you need every day to stay healthy. The four food groups are:
• Milk and Alternatives
• Meat and Alternatives
• Grain Products
• Vegetables and Fruit

Canada's Food Guide, 2011, recommends two to four servings of Milk and Alternatives per day,
depending on your age.

Age	***# of Food Guide Servings of Milk and Alternatives***
Toddlers 2-3 years	2
Children 4-8 years	2
Youth 9-13 years	3-4
Teens 14-18 years	3-4
Adults 19-50 years	2
Adults 51 years and older	3

One Food Guide serving in the Milk and Alternatives group can include:

- 250mL (1 cup) Milk or powered milk (reconstituted)
- 125mL (½ cup) Canned milk (evaporated)
- 250mL (1 cup) Fortified soy beverage
- 175 g (¾ cup) Yogurt
- 50 g (1 ½ oz.) Cheese

Milk products are also a good source of food energy. Energy helps your body carry out its daily activities.

Why is Calcium Important?

Calcium is one of the most important nutrients found in milk. Calcium is necessary for:
- Forming and maintaining strong bones and teeth.
- Helping muscles work properly and keeps your heart beating.
- Keeping nerves healthy.
- Helping to stop bleeding (aids in blood clotting).

Calcium works together with Vitamin D, magnesium, Vitamin A, protein and fluoride. Vitamin D is made in the skin when it is exposed to sunlight. However, research shows that Canadians do not make any Vitamin D in their skin from October through March due to our northern latitude. The use of sunscreen in the summer further inhibits the ability of our skin to make Vitamin D. Therefore it is necessary to get our Vitamin D from food such fatty fish (salmon and mackerel), milk or fortified soy beverages.

You should not require a calcium supplement if you are eating the recommended number of servings from each food group in Canada's Food Guide. Foods from the Milk and Alternatives food group and orange and dark green vegetables from the Vegetables and Fruit food group contribute to our total calcium intake. If you think you need a calcium supplement check with a registered dietitian or physician about the amount and type of supplement that is best for you. Even when you are taking a calcium supplement it is important to continue to eat foods containing calcium as research indicates that calcium from foods may be more effective in building healthy bones than calcium from supplements.

How Well Are You Feeding Your Bones?

Yes, I ate	*Food*	*How Many Points?*	*Points I Get*
	50g Gruyere, Swiss, goat, low fat cheddar or low fat mozzarella cheese	40	
	250mL buttermilk	40	
	250mL goat's milk, fortified	35	
	250mL milk (whole, 2%, 1%, skim or chocolate)	30	
	250mL soy or rice beverage, fortified with calcium	30	
	24g (4 Tbsp.) dry powdered milk (makes 250mL of milk)	30	
	50g processed cheese slices (Swiss, cheddar)	30	
	50g cheddar, Colby, edam, gouda, mozzarella or blue cheese	30	
	175g yogurt, plain	30	
	125mL ricotta cheese	30	
	75g sardines with bones	30	
	150g tofu, prepared with calcium sulfate	30	
	175g yogurt, fruit bottom	25	
	200mL yogurt beverage	20	
	175g yogurt, soy	20	
	125mL orange juice, fortified with calcium	20	
	125mL collards, frozen, cooked	20	
	75g salmon, canned with bones	20	
	75g anchovies, canned	20	
	15mL blackstrap molasses	20	
	250mL cottage cheese	15	
	125mL spinach, frozen, cooked	15	
	125mL turnip, frozen cooked	15	
	125mL collards, cooked	15	
	125mL ice cream	10	
	125mL turnip greens, cooked	10	
	125mL kale, frozen, cooked	10	
	175mL beans (white, navy) canned or cooked	10	
	175mL baked beans	10	
	60mL almonds, dry roasted, unblanched	10	
	250mL broccoli	10	
	15mL sesame seeds	10	

Sources: "Canadian Nutrient File" www.hc-sc.gc.ca/fn-an/nutrition/fiche-nutri-data/cnf_aboutus-aproposdenous_fcen-eng.php and the Dietitians of Canada www.dietitians.ca

Scoring

Total your points for the day. Then add 10 points to your score for minor sources of calcium not listed on the chart. To convert your score into milligrams, multiply your score by ten. For example, a score of 80 would equal 80mg per day.

My score is _____

How much calcium should you have each day? _____

Recommended Dietary Allowances for Calcium Intake for Adolescents

Age Group	Recommended Intake (mg/day)
4 to 8 years old	1000
9 to 18 years old	1300
19 to 50 years old	1000

Do you need more calcium in your diet? _____

If so, approximately how much? _____

Calcium Boosters

There are many ways that you can boost your calcium intake. Here are some examples:

1. Grate cheese over hot vegetables or as a garnish on soup.
2. Add 30-60mL milk powder to cream soups, meat loaf, creamy casseroles and baked goods.
3. Add a spoonful of yogurt on fruit.
4. Have a fruit smoothie or a milk shake instead of a soft drink.
5. Add grated cheese or cheese cubes to a salad.
6. Choose ice cream made with milk rather than frozen desserts.
7. Use milk instead of water when preparing canned cream soups.
8. Use evaporated 2% or whole milk instead of whipping cream in cream sauces.

What If Milk Isn't My Favourite Food?

The following foods can be used as a substitute for milk. Each of these foods, in the amount indicated, provides the same amount of calcium as one serving of milk (250mL).

50g processed cheese slices
50g cheddar, Colby, edam, gouda, mozzarella or blue cheese
500mL cottage cheese
425 mL ice cream
175g yogurt
250mL milk pudding
375mL soup made with milk (like cream of tomato or cream of mushroom)
250mL soy or rice beverage, fortified with calcium
250mL orange juice, fortified with calcium

Dairy Product Trends

Dairy products may be considered the most natural food. Yogurt and condensed milk accounted for the largest increases in demand in the last 10 years. Overall fluid milk consumption has dropped 17% in the last 10 years although chocolate milk has shown an 18% increase. Two percent milk accounts for half of the fluid milk consumption. The chart below showcases the changes in volume of dairy products consumed per capita during 2001 to 2010.

	Change in Volume of Dairy Products Consumed Per Capita 2001-2010
Whole milk (3.25%)	Down 24%
2% milk	Down 15%
1% milk	Up 1%
Skim milk	Down 1%
Chocolate milk	Up 18%
Buttermilk	Down 10.5%
Cream 10%	No change
Cream 35%	Up 10%
Cheddar Cheese	Up 7%
Specialty Cheese	Up 13%
Processed Cheese	Down 28%
Cottage Cheese	Down 2.5%
Sour Cream	Down 27%
Butter	Down 21.5%
Yogurt	Up 70%
Ice Cream	Down 47%
Condensed Milk	Up 133%
Evaporated Milk	Down 33%

Source: Dairy Information Centre (CDIC), Government of Canada www.dairyinfo.gc.ca

What About Exercise and Your Bones?

You now know that you need a calcium-rich diet for healthy bones, but did you know that exercise can help too?

Muscles get stronger when we use them. The same idea applies to bones: the more work they do, the stronger they get. Exercise also increases the blood flow to the bones providing better access to nutrients. Any kind of physical exercise is great but the best ones for your bones are weight-bearing activities like walking, running, hiking, dancing, tennis, basketball, gymnastics, and soccer. People who tend to play outside will also

have higher Vitamin D levels. Swimming and bicycling promote general health, but are not weight-bearing exercises and will not help build bone density. The most important thing is to spend less time sitting and more time on your feet and moving. Alone or with friends, at home or at the park, one of the best gifts you can give yourself is a lifelong love of physical activity.

Bone-Building Activities

Walking	Soccer
Tennis	Skateboarding
Running	Gymnastics
Volleyball	In-line skating
Hiking	Basketball
Ice hockey/ field hockey	Lifting weights
Dancing	Jumping rope
Skiing	Aerobics

You should avoid smoking. You know that smoking is bad for the heart and lungs, but you may not know that it's harmful to bone tissue. Smoking may harm your bones both directly and indirectly. Several studies have linked smoking to higher risk of fracture. The many dangers associated with smoking make it a habit to be avoided.

Children who learn good eating and exercise habits by their preteen years are more likely to carry these habits with them for the rest of their lives.

FUN FACT: Did You Know?

Bone weakening is dramatic in astronauts because they get less exercise in a weightless environment.

BEFORE THE NEXT MEETING

Try one of these activities at home.

1. Canada's Food Guide recommends the following number of servings for milk and alternatives every day.

Children 2 to 8 years old	2 servings
Teens and Pre-teens to 18 years old	3 to 4 servings
Adults 19 to 50 years old	2 servings
Adults 51 years old and older	3 servings

Conduct a survey. Ask someone younger and someone older than you what milk and alternatives they ate yesterday. List the products.

_____ _____
_____ _____
_____ _____

Did they eat enough milk and milk products compared to the recommendations in Canada's Food Guide? If not, they may not be getting enough calcium in their diet. Can you give them some suggestions on how to increase the calcium in their diets?

OR

Give an example of a day's menu that contains the required number of servings of milk and alternatives. If you have included all the milk and alternatives that you need, then you should be getting enough calcium for your body.

Breakfast: _____
Snack: _____
Lunch: _____
Snack: _____
Evening Meal: _____
Snack: _____

MEETING 1 DIGGING DEEPER

Understanding the Calcium Connection

About 99% of the calcium in your body is stored in your bones and teeth.
The remainder circulates throughout your body to regulate body functions like you heart beat and blood clotting. Your body's need for a constant level of calcium is critical and is regulated by a complex hormonal system. When your body does not receive enough calcium through the diet, this hormonal system takes over, releasing calcium from your bones. If this continues over a long period of time, the bones become porous and thin from the loss of calcium. Excess bone loss is called osteoporosis.

An adequate intake of calcium is necessary throughout life: first to help the bones to grow hard and strong and later, to keep them that way.

The Facts About Osteoporosis

- As many as 2 million Canadians suffer from osteoporosis.
- One in four women over the age of 50 has osteoporosis. At least one in eight men over 50 also has the disease. However, the disease can strike at any age.
- Women and men alike begin to lose bone in their mid-30s; as they approach menopause, women lose bone at a greater rate, from 2-5 per cent per year.
- Osteoporosis is a condition that causes bones to become thin and porous, decreasing bone strength and leading to increased risk of breaking a bone.
- The most common sites of osteoporotic fracture are the wrist, spine and hip.
- There were approximately 25,000 hip fractures in Canada in 1993. Eighty percent of hip fractures are osteoporosis-related. Hip fractures result in death in up to 20 percent of cases, and disability in 50 percent of those who survive.
- Some medications contribute to an increase in bone-thinning.
- An adequate intake of calcium NOW is the best defense against developing osteoporosis later.

Don't smoke, drink alcohol in moderation and avoid excess caffeine.
Smoking contributes to bone loss and increases the risk of osteoporosis in both men and women. Heavy drinkers are prone to bone loss and fractures. Osteoporosis Canada (OC) recommends no more than two drinks of alcohol a day. Calcium loss through the urine is increased by the consumption of excess caffeine. OC recommends no more than four cups a day of coffee, soft drinks or some energy drinks.

Bone & Vinegar Experiment

What will happen to bone if it's immersed in vinegar for up to 5 days?
Start this project five days before Meeting #2 so that results can be presented at the meeting.

You will need: One jar, Chicken bone, Pure vinegar

Experiment Method:

1. Place the chicken bone in the jar.
2. Fill the jar with pure vinegar, covering all of the bone.
3. Close the jar and let stand for 3 to 5 days.
4. Examine the bone very closely every day.
5. After five days, compare the results from the first day and the ones from the last day.

Hypothesis: What do you think will happen during this experiment?

Observations:

Day # 1 _____
Day # 2 _____
Day # 3 _____
Day # 4 _____
Day # 5 _____

Results: What actually happened?

Conclusion: What did you learn?

Discussion Questions:

1. What did the bone feel like before you put it in the jar?
2. How does the bone feel now after the experiment?
3. What do you think happened to the bone?
4. What did the vinegar do?

MEETING 2 MAGNIFICENT MILK!

Objectives:

- Learn what different kinds of milk are available.
- Understand the pasteurization process.
- Learn to read labels.

Roll Calls

- Name a specific type of milk.
- Name a county in Ontario known for milk production.
- Name a different source of calcium other than cow's milk.

Sample Meeting Agenda – 2 hrs. 25 minutes

Welcome, Call to Order & Pledge		10 min
Roll Call		5 min
Parliamentary Procedure	Minutes & Business	10 min
Topic Information Discussion	Discuss the process of milk from the farm to the variety of types of milk that can be produced.	20 min
Recipe	Choose a recipe from the Meeting #2 list in Recipe Booklet.	30 min
Topic Information Discussion	Discuss the importance of reading labels on milk and alternatives products.	10 min
Activity Related to Topic	Complete the "Learning About Labels" exercise located in the Record Book.	15 min
Public Speaking/Judging Activity	Activity #3 – Milk Jingle Contest (see Record Book for activity)	20 min
Wrap up, Adjournment, Social Time and enjoy the recipe!		10 min
At Home Challenge	Prepare one of the recipes listed for Meeting #2 and record the results in the Record Book.	

Topic Information

Canadians on average get 1.3 servings of milk per day. Per year, each Canadian drinks on average 77.98 litres of milk a year, based on 2010 statistics. This total includes 3.25% (homo), 2%, 1%, skim, chocolate and buttermilk. Consumers in Ontario drink less than the national average having only consumed 77.41 litres per person in 2010.

From The Farm To You

Cows are usually milked twice a day. Some farms milk their cows three times a day. The milk is collected by a milking machine, which is connected to a piping system that brings it to a stainless steel cooling tank. This tank efficiently cools the milk from 38°C (the temperature of milk just out of the cow's teat) to 4°C in less than 60 minutes.

The milk remains in the cooling tank at 1°C to 4°C, or just above the freezing point, until it is picked up by the milk truck. Milk is picked up at the farm every two days by an insulated transport tanker and taken directly to a dairy processing plant where milk is manufactured into different dairy products.

Dairy equipment, premises and production methods, both at the farm and at the plant, must meet strict quality and cleanliness standards. The barn and animals must be clean, and the milk house spotless, as they are all subject to periodic inspections. The quality and composition of milk are checked both when it is picked up at the farm and when it is delivered to the plant. At the processing plant, milk is tested to ensure no antibiotic residues are detected. Its temperature and composition are verified as well. Farmers are paid for the components of their milk and face heavy penalties if antibiotics are detected or if the quality of the milk does not meet proper quality standards.

Fun Fact

Even though the average dairy cow weighs about 590kg (1300lbs), you may think it looks skinny because its bones stick out. But it's not underfed - a cow eats tonnes of food each year. It's true! You won't believe the food an average cow eats in a day; 4kg of hay (about the size of a small microwave), 16kg of silage (about half of a child's backyard swimming pool), 10kg of mixed grains, salt, vitamins and minerals (2½ ice cream pails full) and 60 litres of water (2/3 of a standard bathtub). The reason why cows have very little fat on their bodies is because most of the food they eat is turned into milk instead of muscle or fat.

Clean, Fresh and Safe

The pasteurization process involves heating milk to very high temperatures (milk is heated to 72°C for 16 seconds) and then suddenly cooling it down to destroy any disease-causing bacteria that may be present. This process is mandatory for all the milk sold in Canada not only to ensure the safety of milk but also to increase its shelf life. It is illegal to sell, offer for sale or even give away unpasteurized milk.

Studies have shown that pasteurization has no effect on calcium absorption and that Vitamins A and D, riboflavin (B2) and niacin (B3) are not affected by heat. Pasteurization does produce a slight loss in thiamine (B1) and vitamin B12, although milk is still a source of these two nutrients. Pasteurized milk is also fortified with vitamin D, contrary to raw milk, which contains only very small amounts of this vitamin. No preservatives are added to milk.

Pasteurization ensures milk is safe to drink and unopened packages will keep fresh in the refrigerator for about two weeks. Once opened, milk should be used in three days. Pasteurization got its name from Louis Pasteur, a French microbiologist, who conducted the first pasteurization tests in 1862. Pasteur is credited with revolutionizing the safety of milk and, in turn, the ability to store and distribute milk well beyond the farm.

Raw milk or unpasteurized milk is illegal for sale in Canada because it can spread diseases such as salmonella, E.coli, Listeriosis and tuberculosis. All milk for sale in Canada is pasteurized. Some people believe that raw milk is healthier and more digestible because it contains “active” enzymes that are deactivated by pasteurization. This is not true. While pasteurization does break down some enzymes, they are not the enzymes required for digestion.

Homogenized Milk

In Canada, homogenized milk refers to milk which is 3.25% butterfat (or milk fat). There are also skim, 1%, and 2% milk fat milks. Generally all store-bought milk in Canada has been homogenized but the term is also used as a name to describe butterfat/milk fat content for a specific variety of milk. Modern commercial dairy processing techniques involve first removing all of the butterfat, and then adding back the appropriate amount depending on which product is being produced on that particular line. Homogenized milk contains fat particles which are scattered evenly throughout the milk so that every drop has a creamy flavor. If milk is not homogenized, a layer of cream (milk fat) will rise to the surface.

Dairy Fact

Oxford County produces more milk for processing than any other county in Ontario. In 2010, Oxford County produced 275,624,000 litres of milk. The second largest dairy producing county was Perth County with 269,724,000 litres of milk and third was Wellington County with 200,570,000 litres of milk produced. Total milk production in 2010 for the province of Ontario was about 2.5 billion litres of milk.

Source: Ontario Ministry of Agriculture, Food & Rural Affairs, www.omafra.gov.on.ca

Specialized Milks

UHT (Ultra High Temperature) Milk

Ever wondered why some milk products don't require refrigeration? Ultra-High Temperature (UHT) pasteurization and sterilized packaging allows milk to be kept at room temperature. This milk is great for camping trips, at the cottage or for anyone who doesn't use milk on a regular basis. During the UHT process, the milk is pasteurized between 138°C and 158°C for a few seconds. Once it has cooled down, the milk is poured into a sterilized package, usually a Tetra Pak type box without air contact.

As long as the package remains closed, the milk does not have to be refrigerated. It can be stored at room temperature until the best before date. Once opened, UHT Milk should be placed in the refrigerator and consumed within a few days, just like regular milk. The nutritional value of UHT milk is similar to 2% milk but the flavour is slightly different. The high temperature process gives the milk a slightly cooked and richer taste.

Lactose-Free Milk

Lactose-free milk is regular milk that has been processed to break down lactose (sugar) in milk to help people with lactose intolerance to easily digest milk. Regular milk is treated with a natural lactase enzyme to breakdown the milk sugar lactose, making the milk easier to digest. Some people with lactose intolerance can eat ripened cheeses and cultured dairy products (yogurt, sour cream and buttermilk). The cultured dairy products contain little or no lactose. Bacteria break down the lactose when these products are made.

Calcium Fortified Milk Beverage

This is regular milk to which calcium is added, in addition to its natural calcium. While regular milk is a tasty and nutritious choice, calcium fortified milk beverages can help people meet their calcium requirements if their intake is inadequate.

Filtered Milk

Regular milk is passed through fine filters to remove most microorganisms, making it seem creamier. The filtration process is similar to pasteurization but without the use of heat.

Omega-3 Milk Beverage

Omega-3 milk beverage is regular milk with added ingredients, such as flax oil, which add Omega-3 polyunsaturated fatty acids which are known to be good for health. Omega-3's are crucial for the healthy brain development of infants and children, when its growth is at its fastest and most crucial stage. In adults, DHA is strongly associated with lowering the risk of heart attack and stroke. Studies also suggest that the anti-inflammatory properties of these fatty acids may reduce the stiffness and pain of joints afflicted with arthritis.

Organic Milk

Milk from cows that are fed crops that are organically grown is considered organic milk. Regular and organic milk are equally safe and nutritious.

Prebiotic Fibre Milk Beverage

This is regular milk with a prebiotic fibre added. Prebiotic fibre promotes and enhances the activity of beneficial bacteria that naturally inhabit our digestive tracts and help us to digest foods and keep our bodies healthy by controlling harmful bacteria and other microorganisms.

Probiotic Milk Beverage

This beverage is regular milk with added probiotic culture (beneficial bacteria).

Evaporated Milk

About 60% of the water is evaporated from fresh skim, 2% or whole milk. The high temperature needed to sterilize the milk causes a browning reaction to occur, giving this milk a slightly darker colour. Evaporated milk is sealed into cans and is heat tolerant, making it excellent for baked goods and slow-cooker recipes.

Sweetened Condensed Milk

This product is made commercially by condensing milk to one-third of its original volume and then adding sugar. Sweetened condensed milk is very thick and sweet and is available in cans. It is most often used in sweet baked goods. It is not interchangeable with other types of milk.

Powdered Milk (Skim or Whole milk powder)

Partly evaporated milk is heated and dried instantly. Powdered milk is made from whole or skim milk and is available in bags and in bulk. There are instant and regular formulas. Once the package is opened, it should be used within two months.

Chocolate Milk Versus Chocolate Beverages

Check the label when you buy chocolate milk! Is it chocolate milk or chocolate drink or chocolate beverage? There's a big difference!

In Ontario, and most other provinces, the only permitted ingredients in chocolate milk, other than milk, are flavouring, salt, stabilizers, sweeteners, food colouring and vitamins A and D, resulting in a product that is 90% or more milk.

Chocolate milk is a great choice anytime including after a workout. Your body needs to recover before you can get back at it. With its 55g of carbohydrates and 17g of protein per 500mL serving, chocolate milk gives you the complete nutrition you need after a workout. One percent white milk is also a good choice for replenishing the body after a workout as it also contains 17g of protein per 500mL serving, but it will only give you 32g of carbohydrates.

The milk content of most chocolate drinks and beverages is considerably less than chocolate milk and can be as low as 51%. Chocolate drinks and beverages contain modified milk ingredients and/or whey products.

Milk Allergies

A milk allergy is the result of an overreaction of the immune system to the protein in milk, not to lactose. Lactose intolerance and milk allergies are two very different conditions. Milk allergies are quite rare, especially in adults. They usually occur in 2 to 4% of infants and are outgrown, by most children, by the age of three. Possible symptoms of a milk allergy include hives, skin rash, eczema, diarrhea or constipation, nasal congestion, coughing, wheezing and vomiting. Those with a milk allergy must eliminate milk products from their diet while making sure they get all of the nutrients found in milk through other foods or supplementation. Sources can include soy, rice or almond beverages, legumes and greens.

Looking At Labels

Labeling on food helps Canadians make healthy and informed choices about the foods they buy and eat. Labels tell a story about who processed the milk, its “best before date” and its nutrient contact (fat, vitamins, etc.). The percentage of milk fat is indicated by “% MF.”

Homogenized, partly skimmed, skim, chocolate, evaporated and powdered milks all have Vitamin D added to them. Vitamin D is also known as the sunshine vitamin because our bodies make Vitamin D when we’re exposed to the sun.

Nutrition Facts **Valeur nutritive** For 1 serving (250 mL) Par portion de 250 mL	
Amount Teneur	% Daily Value % valeur quotidienne
Calories/Calories 130	
Fat / Lipids 5.0 g	8 %
Saturated / Satures 3.0 g + Trans / Trans 0.1 g	16 %
Cholesterol / Cholesterol 20 mg	
Sodium / Sodium 120 mg	5 %
Carbohydrate / Glucides 12 g	4 %
Fibre / Fibres 0 g	0%
Sugars / Sucres 12 g	
Protein / Proteines 9 g	
Vitamin A / Vitamine A	10 %
Vitamin C / Vitamine C	0 %
Calcium / Calcium	30 %
Iron / Fer	0 %
Vitamin D / Vitamine D	45 %

You are at the grocery store looking at milk. The one serving (250mL) of 2% partly skimmed milk you pick has some fat (8% Daily Value) and a lot of calcium (30% Daily Value) – this is a good choice if you are trying to eat less fat and more calcium as part of a healthy lifestyle!

Fun Fact

Nutrition labeling became mandatory for all prepackaged foods on December 12, 2007. This means that all food companies have to include nutrition labeling on their prepackaged foods.

White Sauces

The secret to making a smooth, white sauce is to blend the flour with fat or cold water before combining with hot liquid. The cold water or fat separates the flour particles preventing them from forming lumps. Lumps in a sauce not only look awful but also reduce the thickening power of the flour.

Once you master making a white sauce, the possibilities are endless. You can add grated cheese, onions, parsley, mushrooms or herbs. Sauces are great served over vegetables, baked potatoes, meat and fish.

A white sauce is also a base for many recipes.

Thickness of White Sauce	Uses
Thin (pours like milk)	Soup base Dessert sauce
Medium (thickness of whipping cream)	Casseroles Crepe fillings Chicken a la king Gravy Sauces
Thick	Soufflés Puddings

BEFORE THE NEXT MEETING

Try one of the following activities:

1. Read the label on a milk carton or bag. What vitamins were added and in what amount?

_____

_____

_____

OR

2. Make a list of all the different types of milk you can find in your home (e.g. 2% milk, evaporated milk, etc.) and how many litres/bags/cans you use of each in a month.

_____

_____

_____

MEETING 2 DIGGING DEEPER

The Story of Milk Pasteurization in Canada

The availability of safe, nutritious cow's milk is something that many Canadians take for granted. But ensuring a safe, uncontaminated milk supply was a major challenge a hundred years ago and the story of milk is a great achievement in the development of Canada's public health system.

French scientist Louis Pasteur is credited with revolutionizing the safety, storage and distribution of milk, but it took many years of fighting for public health regulations and inspections before a safe milk supply was secured in Canada.

Dr. Pasteur developed the process called pasteurization in 1862, which kills microbes or microorganisms (germs) with heat; including the Salmonella typhi bacteria that causes typhoid. Raw, unpasteurized milk can also spread other types of salmonella, E.coli, Listeriosis and tuberculosis. Typhoid and tuberculosis once caused thousands of deaths and disabilities, but neither are serious health threats in Canada today.

In 1927, a typhoid epidemic from contaminated milk affected more than 5,000 people and caused 533 deaths in Montreal, despite a milk pasteurization city by-law. The law was not enforced and as with other typhoid outbreaks linked to contaminated milk, provincial health departments across the country were powerless to enforce standards.

The educational reformer Adelaide Hoodless, who founded the Federated Women's Institutes of Canada, started her campaign for the pasteurization of milk after her infant son died in 1889 from drinking unpasteurized milk. The Canadian Public Health Association and the Canadian Medical Association pressed for compulsory pasteurization of milk and in 1938, the Ontario government became the largest political area in the world to do so. In addition to the risks associated with contamination, there was a growing recognition of the important nutritional value of milk and dairy products.

Milk Today

Today, pasteurized milk is fortified with vitamin D to aid in calcium absorption, among other benefits. Lower fat milk is also fortified with vitamin A. The processing of milk now takes less than one day from beginning to end. At the dairy farm, cows are milked two or three times a day by machine and the milk goes directly into a large refrigerated holding tank. Approximately every other day, a special refrigerated truck arrives at the farm to collect the milk and the milk is tested for quality before being taken directly to the dairy, where it is processed into milk, cream and other milk products. The story of milk is fundamental to Canada's safer and healthier foods—a great public health achievement.

Source: Canadian Public Health Association www.cpha100.ca

There are two methods of pasteurizing milk:

1. Batch Holding Method: milk is heated to 63°C and held for 30 minutes and then rapidly cooled.
2. High Temperature Short Time (HTST) Method: milk is heated to 72°C, held for 16 seconds and then rapidly cooled to 4°C. This is the most common method.

Home Pasteurization Method

To pasteurize milk at home:

1. Heat milk in a double boiler or heavy saucepan to 63°C and hold at this temperature for 30 minutes, stirring frequently to prevent burning. If skin forms on the surface, skim it off.
2. Remove double boiler from heat and cool quickly in cold water. Refrigerate immediately.

MEETING 3 SAY CHEESE!

Objectives:

- Learn the process which is used to make cheese.
- Learn what varieties of cheese are available and the differences between each variety.
- Learn how to cook with cheese.

Roll Calls

- Name a cheese that is made in Canada.
- Name your favourite kind of cheese to eat.
- Name your favourite food that contains cheese.

Sample Meeting Agenda – 2 hrs. 25 minutes

Welcome, Call to Order & Pledge		10 min
Roll Call		5 min
Parliamentary Procedure	Minutes & Business	10 min
Topic Information Discussion	Discuss the cheese making process and classification of cheeses.	20 min
Recipe	Choose a recipe from the Meeting #3 list in Recipe Booklet.	30 min
Topic Information Discussion	Discuss cooking with cheese and the differences in different kinds of cheeses.	20 min
Activity Related to Topic	Give Members their 'Eat Right Journal' (Activity #4) to record their milk and alternatives consumption for one week. Tell Members they are to have it completed by Meeting #6.	15 min
Public Speaking/Judging Activity	Have small cubes of four different cheeses. Have Members judge cheese based on texture, appearance and taste. Use judging card in the Record Book (Activity #5).	15 min
Wrap up, Adjournment, Social Time and enjoy the recipe!		10 min
At Home Challenge	Prepare one of the recipes listed for Meeting #3 and record the results in the Record Book.	

Topic Information

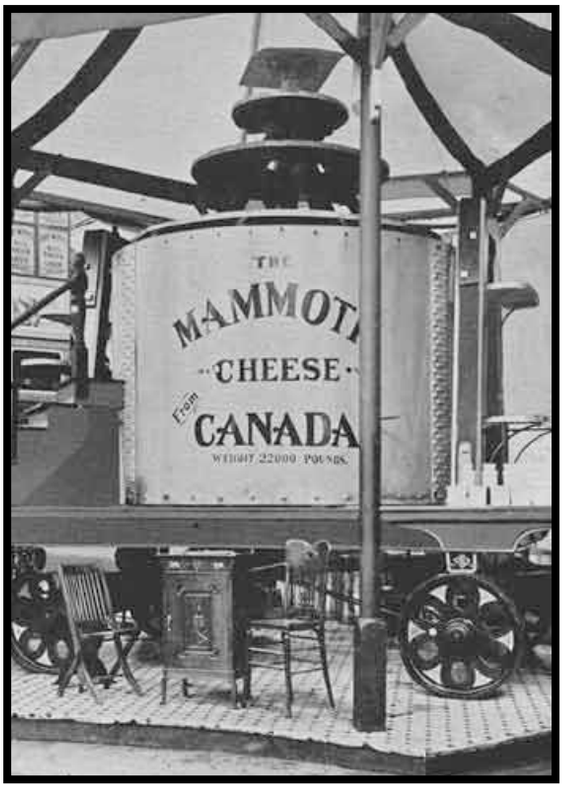
Cheese has existed for over 7000 years. Today in Canada, the majority of cheese is made from cow's milk, but there are also cheeses made with goat, buffalo and sheep's milk. There are over 200 cheese makers in Canada who make more than 1050 distinct varieties of cheese. Worldwide, there are over 2000 different varieties of cheese. Cheddar is one of the most heavily sold cheeses in the world.

How does cheese compare to other snacks?

Nutrient	***Cheddar Cheese 50g***	***Chocolate bar (plain) 50g***	***Potato Chips (plain, salted) 50g***	***Cheese Puffs 50g***	***Pretzels, hard, plain, salted 50g***	***Peanuts (shelled, salted) 50g***	***Trail Mix (regular) 50g***
Calories (kcal)	202	268	267	277	190	274	232
Protein (g)	12	4	3.75	3.75	trace	12.5	6.6
Fat (g)	17	15	18.75	16.25	trace	23.75	14.5
Carbohydrates (g)	1	30	26.25	25	40	7.5	22.4
Calcium (mg)	361	95	11.25	26.25	20	27.5	39.5
Phosphorous	256	104	81.25	50	60	181.25	172.4
Vitamin B12	0.42	0.31	0	0.05	0	0	0

Source: Nutrient Value of Some Common Foods, 2008, Health Canada
www.hc-sc.gc.ca/fn-an/alt_formats/pdf/nutrition/fiche-nutri-data/nvscf-vnqau-eng.pdf

The Big Cheese



With an eye on promoting Canada's finest cheese, the Dominion Department of Agriculture issued a challenge to 12 Ontario cheese factories: to make the world's biggest cheese to display at the Chicago World's Fair in 1893 and big it was. It weighed a whopping 9,979kg and it took three day's milk from 10,000 cows to produce it. It was so enormous that none of the participating factories could contain it. Made in a Canadian Pacific freight shed, the Mammoth, as it was nicknamed, was brought to the fair on a special train, drawing crowds at every stop. It was so large that the Mammoth crashed through the floor at the fair.

In 1995, the grocery chain Loblaws made a sequel to The Mammoth by commissioning Québec's Agropur to manufacture "The World's Biggest Cheese". The Cheddar was so big, in fact, that it dwarfs even the Mammoth. Over 26,000kg in weight, it required 266,000 litres of milk to produce it. It represented the average amount of cheese eaten by 2,500 Canadians in one year.

Source: Perth Museum Archives www.all-about-perth.com

Cheesemaking

Most cheeses (not including processed cheese) are made in the same way. Cheese is fermented milk from which a portion of the water and lactose has been removed. There are four basic steps to making cheese:

1. Curdling
2. Draining
3. Pressing
4. Ripening

Once these four steps are complete, the cheese has been made!
In order to make excellent cheese, high-quality milk is required. According to Canadian government legislation, the milk used for cheese making is generally pasteurized. There are some exceptions, such as raw-milk cheeses. Cheeses made with unpasteurized milk undergo a carefully monitored process to ensure a safe and tasty product. These cheeses are held for a minimum of 60 days before being released to the public.

Dairy Facts
It takes 10.98 litres of milk to make one kilogram of cheese.

Classification of Cheese

Canadian cheese is divided into six categories:

- Fresh Cheeses are noted for their light, delicate and slightly tangy flavour. These cheeses may be very soft and spreadable or granular. Their shelf life if limited due to the high moisture content so the “best before” date on the package is of the utmost importance. Examples of fresh cheeses are cottage, cream and ricotta cheese.

- Soft Cheeses are easily recognized by their bloomy white rinds which not only offer protection but also add to their distinct flavour. These cheeses are noted for their lush texture and smooth, creamy taste. Examples of soft cheese include Brie and CaMembert.

- Semi-Soft Cheeses are a balance between soft and hard cheeses. They come in a wide variety of flavours. To make the extensive range of cheeses in this category, the curd undergoes one of three processes to make a different form of semi-soft cheese: Unripened semi-soft cheese, Surface-ripened semi-soft cheese, Interior-ripened semi-soft cheese. Semi-soft cheese can include Havarti and Monterey Jack.

- Firm Cheeses keep very well and are easily sliced and cut. There is a wide variety of firm cheeses and their flavour ranges from mild to sharp. Canadian Swiss, Colby, Edam, Gruyere, Gouda, Provolone and Cheddar are all included in the firm cheeses group.

- Hard Cheeses achieve their distinctive tastes and textures through the cooking of curd and the elaborate ripening process they undergo. It can take six months to three years to produce some varieties of hard cheeses.

- Other Cheeses don’t fit into any of the five categories wither because they have a distinctive and individual process or they are the result of special procedures. Cold-pack cheeses and light cheeses fall within this category.

Light Cheese

This cheese is processed the same way as regular cheese but with a lower dairy fat content. Because of this, light cheeses have a chewier texture. By definition, the term “light”, “light-style” or “lite-style” can only be applied to cheeses that have a 25% or more reduction in milk fat content compared to their “regular” counterparts.

Cold-Pack Cheese

Made from a blend of cheeses, cold-pack cheese does not undergo a heating process or have an emulsifier added. It may be flavoured with fish, fruit, wine, port, beer or cocoa.

Processed Cheese

Yes, it's true! The J.L. Kraft you see in commercials did exist! Born on a dairy farm near Stevensville, Ontario in 1874, this Canadian patented processed cheese. He began his career as a sales clerk in a general store in Fort Erie, Ontario. Later, he developed a cheese that could be packaged, would stay fresh longer and melt easily with little fat separation.

Processed cheese is not classified in the same way as natural cheese because it requires further processing. In the past it was made from a blend of cheeses, most often Colby and Cheddar. Most of today's processed cheese is generally no longer made from blended cheeses, but instead is manufactured from a set of ingredients such as milk, whey, milk fat, milk protein concentrate, whey protein concentrate, and salt. Many flavours, colours and textures of processed cheese exist.

Cooking With Cheese

Have you ever noticed that the cheese on a pizza is usually stringy and greasy? This is because pizza is usually baked at a very high temperature which toughens the protein and causes the fat to separate.

Cheesey Tips

1. Always cook cheese dishes at a moderate oven temperature, 160°C to 190°C (325°F to 375°F) or microwave at 50% power (Medium).
2. Grate or cut cheese into small pieces when adding it to other ingredients. The cheese will melt quicker and blend better with other ingredients.
3. Add cheese to omelets and sauces at the last minute and heat only until it's melted.
4. Emmental, cheddar and mozzarella make good ingredient cheeses.

Websites With Great Cheese Recipes

www.allyouneedischeese.ca
www.canadianliving.com
www.dairygoodness.ca
http://www.easy-kids-recipes.com/cheese-recipes.html
http://www.foodland.gov.on.ca/english/dairy/cheese/recipes

Cheese Primer

Do you use the same types of cheese again and again? Try a new cheese for a change. Just one word of caution – it's best to substitute cheese with the same texture.

The chart on the following pages will help you.

Type of Cheese (28g)	*Calories (kcal)*	*Calcium %*	*Description and Flavour*	*Uses*	*Comments*
SOFT Brie CaMembert	95 85	5 11	Creamy white with grey-white mold surface. Creamy inside, depending on ripeness. Mellow to strong flavour.	Cheese tray, with fruit, snacks.	
Feta	85	11	White, soft, moist and flaky. Made from a mixture of cow and goat milk. Salty taste as a result of being stored in brine.	Cheese tray, salads.	
Limburger	93	14	Creamy white with grey-brown surface, smooth, small, irregular holes. Strong flavour and odour.	Cheese tray, good with rye bread.	
SEMI-SOFT Blue	100	15	Creamy, white, blue-veined, crumbly. Sharp, strong flavour.	Cheese tray, fruit salads, dips, salad, dressings and canapés.	
Goat	103	8	Variety available	cheese tray, salads, sandwiches, spreads	
Muenster	104	20	Creamy yellow, elastic, small holds. Mild.	Cheese tray, sandwiches.	
Monterey	106	21	Gold, yellow or orange. Mild, slightly nutty with a gentle sweet sour tang.	Cheese tray, sandwiches, cooking.	
Mozzarella, partly skimmed (pizza cheese)	72	22	Creamy white, plastic texture. Mild.	Main dishes such as pizza or lasagna, sandwiches, snacks.	

FIRM Brick	104	19	Creamy yellow. Milk to sharp flavour.	Cheese tray, sandwiches.	
Cheddar	113	20	Creamy white to deep orange, depending on age. Mild, medium or nippy flavour depending on age. Marble – blend of white and orange cheddar; milk, nutty flavour	Cheese tray, canapés, sauces, soups, main dishes, salads	
Colby	110	19	Creamy white to orange, with small, irregular-shaped holes. Mild, cheddar-like.	Cheese tray with fruit or nuts, sandwiches.	
Gouda	101	20	Creamy yellow, coated with red wax, smooth almost rubbery. Mild, nutty, slightly acid flavour.	Fruit and crackers, salads, sandwiches, sauces.	
Provolone	98	101	Pale yellow with a tan surface, smooth. Ranges from mellow to sharp flavour.	Appetizers, cooking, sandwiches, desserts, snacks.	
Swiss	106	22	Creamy yellow, large, round, evenly distributed holes, smooth, hard, nutty, sweet. Mild.	Sandwiches, salads, sauces, fondues.	
Tilsit	96	20	Slightly yellowish, small holes. Medium sharp flavour.	Fruit, sauces, sandwiches.	
HARD Parmesan	110	34	Pale yellow with dark brown surface, very hard, granular. Sharp, pungent.	Used grated on spaghetti, vegetables, casseroles, salads, soup.	
Romano	110	30	Pale to dark yellow. Medium-strong and tangy.	Use grated on pasta, vegetables, casseroles, salads, soup.	
SOFT, FRESH 250mL Cottage Creamed (4%bf) Cottage (2%bf)	 232 203	 14 16	White, soft curds, unripened. Mild, slightly acidic.	Salads, with fresh fruits or vegetables, dips, baking, main dishes, desserts.	
Ricotta	39	8	Fresh, soft and moist with loose white curds. Mild, sweet, nutty.	Main dishes, desserts, salads, can be used wherever cottage cheese is used.	
Cream	99	2	White, soft, creamy, unripened. Slightly acidic. Variations are available with added fruit, nuts or spices.	Sandwiches, dips, dressings, desserts such as cheesecake.	

Sources: Canadian Cheese Directory, Canadian Dairy Information Centre www.dairyinfo.gc.ca
The Calorie Counter www.thecaloriecounter.com

Dairy Facts

In 2010, each person in Canada ate an average of 12.66kg of cheese. Of that, 4.12kg was cheddar cheese, 7.77kg was specialty cheeses, 1.96kg was processed cheese and 0.76kg was cottage cheese.

BEFORE THE NEXT MEETING

Try one of the following activities at home.

1. Find three cheeses that have a butterfat or milk fat content of 15% or less. If possible, try them out and record the differences in taste, texture, appearance and which ones you liked or didn't like.

_____

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_____

OR

2. Compare the labels on your favourite kind of cheese, your favourite kind of potato chips and your favourite chocolate bar. Record the calorie, calcium, protein and fat content of each one.

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MEETING 3 DIGGING DEEPER

Cheesemaking

Cheese is the curd of milk. The curd is basically a gel of casein from which more or less of the whey liquid has been removed by heating, stirring and pressing. Casein and whey are the proteins found in milk. Casein accounts for about 80% of the proteins in milk. Most cheeses (not including processed cheese) are made in the same way. Cheese is fermented milk from which a portion of the water and lactose has been removed. There are four basic steps to making cheese:

1. ***Curdling*** - Curdling is the separation of the liquids (whey) from the solids (curds) by addition of the fermenting agent. All cheeses undergo this initial step. There are two ways to curdle cheese:
    a. Lactic Curdling - Lactic ferments are added to form small grains of curd.
    b. Stimulated Curdling - An enzyme is added to form large solid mass of curd.

2. ***Draining*** – Draining is the method of eliminating the whey (liquid) from the curd (solid). Proper draining is vital to attain the correct moisture content in the cheese.
    a. Lactic Curdling - The whey simply drains through the curd grains for several hours.
    b. Stimulated Curdling – Active draining techniques employ one or a combination of the following: stretching, kneading, cutting, stirring and/or cooking.

3. ***Pressing*** – Pressing is a step that simply eliminates more whey. Generally, harder cheeses undergo more pressing to remove more moisture.
    a. Lactic Curdling - The weight of the curds on top presses out the moisture from the curds on the bottom.
    b. Stimulated Curdling - Varying degrees of active pressure is applied to the mass of curds. Heating can also be used.

4. ***Ripening*** - Before the ripening process, many different procedures can be undertaken, or ingredients added, to give each cheese its distinct character. Ripening involves the careful control of humidity, temperature and oxygen levels to nurture the cheese to maturity. It is during the ripening process that cheeses take on their unique characteristics of flavor, texture and aroma. There are two kinds of ripened cheeses: Interior Ripened and Surface Ripened.

Once these four steps are complete, the cheese has been made! The unique flavor of each type of Canadian cheese type is due to one or more of the following:

- The kind of milk used;
- The method of curdling the milk;
- The method of cutting and forming of the curd;
- The type of bacteria or moulds used in ripening;
- The amount of salt or seasonings added; and
- The conditions of ripening.

MEETING 4 GET CULTURED!

Objectives:

- Learn what kinds of yogurt are available.
- Learn what the health benefits are that yogurt can provide.
- Learn how to make butter.

Roll Calls

- Name one food that you've eaten this week made with milk.
- Name your favourite flavour of yogurt.
- Name a recipe you've made containing butter.

Sample Meeting Agenda – 2 hrs. 10 minutes

Welcome, Call to Order & Pledge		10 min
Roll Call		5 min
Parliamentary Procedure	Minutes & Business	10 min
Topic Information Discussion	Discuss the butter making process and tips for using butter.	20 min
Recipe	Use the recipe for Unsalted Butter in the Recipe Booklet.	30 min
Topic Information Discussion	Discuss the origin, styles and varieties of yogurt. Learn about sour cream and cottage cheese.	20 min
Activity Related to Topic	Activity #6 – Unscramble the words!	10 min
Public Speaking/Judging Activity	The Dairy Challenge Activity – Can your Members tell the difference between real butter & margarine? Have your Members take the butter challenge and do a blind-folded taste test. Have Members tell which one they liked and why.	15 min
Wrap up, Adjournment, Social Time and enjoy the recipe!		10 min
At Home Challenge	Prepare one of the recipes listed for Meeting #4 and record the results in the Record Book.	

Topic Information

The Butter Making Process

Fresh milk from dairy farms is collected and brought to the dairy processing plant or creamery. The cream is then separated from the fresh, whole milk using centrifugal force. It is then pasteurized by heating it rapidly to a high temperature to eliminate potential disease-causing bacteria and help the butter stay fresh longer.

Once pasteurized, the cream is beaten vigorously in a churning cylinder until it t hickens naturally into butter. The remaining liquid (buttermilk) is drained off and the butter is mixed and blended. At this point, salt is sometimes added.

The final product is, by regulation, at least 80% fat, about 16% water and 3% milk solids. After being weighed, cut, wrapped and chilled, the butter is delivered to your grocery store.

Fun Fact

It takes 10.2 litres of milk to make 454g (1 pound) of butter.

The History of Butter

Butter's origins go back about 10,000 years to the time when our ancestors first began domesticating animals. Today, butter in its many flavourful forms is the world's most popular fat. Butter is a versatile spread and a delicious enhancer for so many foods.

Tips for Using Butter in the Kitchen

- Create a smooth finish in a hot sauce by cutting cold butter into small cubes and whisking one or two cubes at a time into the hot sauce over low heat. Continue adding and whisking until all of the butter is incorporated. Use about 1/4 cup (50 mL) butter for each cup (250 mL) of sauce. Added gradually, the cold butter will melt more evenly and blend into the sauce better.
- For the best results when using softened butter creamed with sugar in cookies and cakes, the butter should be soft enough that you can easily make an impression with your finger when you press it but not so soft that you can press right through it.
- For the freshest flavour, store only as much butter at room temperature in a covered butter dish that you'll use within two to three days. In the warm summer months, only take out what you'll use in one day.
- Maintain the freshness of butter with proper wrapping. Carefully unwrap the foil-laminated paper and cut off as much butter as you need, then re-wrap the

remaining butter with the paper. Don't cut through the wrap or tear it off, as this will leave butter exposed.

- Butter is best when fresh. Though it will last longer, for optimal flavour, only buy what you plan to use within a week or two. If you want to take advantage of specials or find you're not using it quickly enough, freeze butter to preserve its fresh flavour.
- Butter should never be melted on high heat. High heat causes the milk solids to separate out and can burn the butter. Melt butter on the stove-top in a heavy saucepan or the top of a double boiler over medium-low or medium heat. Watch butter carefully when melting and remove it from the heat when it's about three-quarters melted, then stir until it's completely melted.
- In the microwave, cut butter into small pieces and loosely cover the bowl with paper towel. Melt on medium-low (30%) power or defrost, checking every 10 to 15 seconds until it is almost melted but a few small solid pieces remain. Remove from the microwave and stir until it's completely melted.
- Look closely at the wrapping on your unopened brick of butter. Most have measurements printed on the side showing where to cut to get the indicated amount. Use these as a handy measuring shortcut.
- If your recipe calls for tablespoons of butter remember, 1 cup is equal to 16 tablespoons so you can use the measurements on the wrapping or the chart above and divide 1 cup into four 1/4 cup portions. Then divide each 1/4 cup into four 1 tablespoon portions and cut off as many as you need.

Tips courtesy of www.dairygoodness.ca

Butter Versus Margarine

Butter and margarine have been on the market for years as a spread for toast, for use in baking and for everyday eating.

Margarine is a soft spread made from a blend of vegetable oils, such as canola, sunflower and/or olive oil. These types of oils provide essential polyunsaturated fats that our bodies need for normal growth and development.

There are two types of margarine: hydrogenated and non-hydrogenated.

Hydrogenated margarine is made by a method called hydrogenation, in which liquid oil is changed into a solid fat by adding hydrogen. In doing so, saturated and trans fats can be created.

Non-hydrogenated margarine is a healthier choice. With non-hydrogenated margarine, small amounts of naturally trans-fat free palm and palm kernel oil are used to harden the oil and make it more spreadable. Foods with a lot of palm oil can be high in saturated fat, but non-hydrogenated margarine is made with only a small amount of palm oil. This makes it possible to blend oils and create a healthier margarine that is low in saturated fat and has no trans-fat.

However, margarine and butter contain the same amount of fat and calories

One Serving (10g or 2tsp/10mL)	***Fat (g)***	***Calories***
Butter	8	72
Margarine	8	72
Olive Oil	10	88

Source: Dairy Farmers of Canada www.dairygoodness.ca

Butterfat, used in making butter, is 30% monounsaturated fat. That's the same kind of healthful fat found in olive oil and canola oil. Besides being irresistibly flavourful, butter is a source of Vitamin A, a nutrient important for healthy skin and eyes, as well as for strong bones and teeth.

If you don't like the taste of margarine and don't want to give up butter, consider using whipped or light butter. Or look for products that are a blend of butter and olive or canola oil.

Fun Fact

In 2010, Canadians consumed 2.64kg of butter per person.

Yogurt: A Natural Creation

Yogurt is a natural, healthful food made by adding a starter culture of bacteria to pasteurized milk or cream. The bacteria naturally act on the milk's sugar to create lactic acid, which gives yogurt its characteristic thick, creamy texture and tangy taste. Some yogurts are heat-treated to increase shelf life, which kills the bacteria and its healthful attributes. The words live or active, used to describe bacteria in the list of ingredients, let consumers know that the bacteria is living and functional. To keep the bacteria alive, keep yogurt refrigerated and eat it soon after the container is opened.

The History of Yogurt

Yogurt is an ancient food that was discovered accidentally as a result of milk being stored by primitive methods in warm climates. Most historical accounts attribute yogurt to the Neolithic peoples of Central Asia around 6000 B.C.. Herdsmen began the practice of milking their animals, and the natural enzymes in the carrying containers (animal stomachs) curdled the milk, essentially making yogurt. Not only did the milk then keep longer, it is thought that people preferred the taste so they continued the practice, which then evolved over centuries into commercial yogurt making. It wasn't long before word of the perceived health benefits of yogurt traveled through to other peoples and the consumption spread throughout the East.

Turkish immigrants brought yogurt to North America in the 1700's but it really didn't catch on until the 1940's. The popularity of yogurt soared in the 1950's and 1960's with the boom of the health food culture and is now available in many varieties to suit every taste and lifestyle.

Fun Fact
Yogurt with fruit on the bottom was first introduced in North America in 1947 by Danone.

How Yogurt is Made

Fresh milk (homogenized, 2%, skim milk) and/or cream is fermented using lactic bacteria starters or "cultures." The two bacteria used are Lactobacillus bulgaricus and Streptococcus thermophilus. The bacteria are added to heated, pasteurized milk or cream, and the resulting product is then incubated at a specific temperature to maximize the activity of the bacteria. The bacteria convert the lactose (milk sugar) to lactic acid, which thickens the milk and gives it the tangy taste characteristic of yogurt.
The yogurt is then cooled and can be flavoured with fruit, sugar, other sweeteners or flavourings. Stabilizers, such as gelatin, may also be added.

Styles of Yogurt

There are three main styles of producing yogurt:

Balkan-style (sometimes called set-style yogurt)
The warm cultured milk mixture is poured into containers which are then incubated without any further stirring. Because there is no further stirring, this yogurt has a firm texture. If yogurt is fruit flavoured, the fruit is added to the bottom of the container before the milk mixture is poured in, hence fruit bottom yogurt! Balkan-style or set-style yogurt has a characteristic thick texture and is excellent for enjoying plain or using in recipes.

Swiss-style (sometimes referred to as stirred yogurt)
The warm cultured milk mixture is incubated in a large vat and is cooled. It is then stirred for a creamy texture, and often has fruit or other flavourings added. Swiss-style, or stirred yogurt, is often slightly thinner than Balkan-style or set yogurt and can be eaten as-is, in cold beverages or incorporated into desserts.

Greek-style
This is a very thick yogurt that is either made from milk that has had some of the water removed or by straining whey from plain yogurt to make it thicker and creamier. Greek-style yogurt tends to hold up better when heated than regular yogurt, making it perfect for cooking. It is also referred to as Mediterranean or Mediterranean-style yogurt and is often used for dips such as Tzatziki. A Balkan-style yogurt that has 6% M.F. or more makes an excellent substitute for Greek-style yogurt.

Varieties of Yogurt

Within the three styles of making yogurt there are many varieties to choose from. Low-fat Yogurt: Yogurt that contains 3g of fat per or less per serving according to Canadian regulations.

Fat-free Yogurt: According to Canadian labelling regulations, this yogurt contains less than 0.5 g of fat per serving. It is available plain and with added flavourings and sweeteners.

Light Yogurt: May be used on a yogurt that is light in fat, which can mean it is 25% lower in fat than the regular formula and/or it may be 25% lower in energy (calories) than the regular formula. It can also be a product that is light tasting but this must be outlined on the label.

“No Added Sugar” Yogurt: Yogurt that contains no added sugars and no ingredients containing sugar or ingredients that contain sugars that functionally substitute for added sugar.

“Sugar-free” Yogurt: Yogurt that contains less than 0.5 g added sugar per serving. It may be unsweetened or may contain artificial sweeteners.

Lactose-free Yogurt: Yogurt that has no detectable lactose present. This labelling claim is not covered by Canadian regulations.

Probiotic Yogurt: Yogurt containing beneficial bacteria in addition to the standard Lactobacillus bulgaricus and Streptococcus thermophilus strains found in all yogurt.

Probiotics are considered to be live microorganisms which, when administered in adequate amounts, may give a health benefit when consumed.

Prebiotic Yogurt: Yogurt that contains food ingredients, such as inulin (a non-digestible fibre), that enhance the actions of probiotic, beneficial bacteria. Prebiotics are non-digestible food ingredients that stimulate the growth and/or activity of bacteria in the digestive system in ways that may be beneficial to health.

Enriched Yogurt: Yogurt that has added nutrients above the amount naturally found in the ingredient components. Some yogurts are enriched with calcium, fibre, omega-3 fatty acids and vitamins, among other nutrients.

Organic Yogurt: Yogurt that is made with organic ingredients. The regulations vary between each regulating body which is identified on the label.

Drinkable Yogurt: Yogurt with a thinner texture sold in bottles as a beverage, often with sweetening and fruit flavours.

Tube Yogurt: A thick yogurt in a portable tube-shaped package. It is often sweetened and flavoured with fruit or other flavourings.

Frozen Yogurt: Can be made from yogurt that is frozen or similar ingredients (minus the bacteria). It's similar to ice cream, is sweetened and often has added fruit or flavourings. It does not contain the same live, beneficial bacteria as fresh yogurt because of the freezing process.

Kefir: Similar to yogurt but it is fermented with yeast in addition to the bacterial cultures. It has a stronger, tangier taste than yogurt.

Fun Fact
In 2010, Canadians, on average, consumed 8.28 litres of yogurt.

What's so Great About Yogurt?

Plain yogurt is lower in sugar and calories than fruit-flavoured yogurt. For healthy eating, choose yogurts or yogurt beverages that have a fat content of 2% or less. Some yogurts contain as much as 8% fat. Look for products with less than 16 grams of sugar in a 100 gram serving. The amount of sugar listed on the label accounts for the added sugars (fructose, glucose or sucrose) and the sugar that is naturally present in any fruit as well as the natural sugar found in milk.

If you don't like plain yogurt, add your own fruit or spices so that you can control the sugar content.

Yogurt is rich in calcium, protein, B vitamins and essential minerals and is low in carbohydrates. Calcium works with the live cultures found in some yogurt to increase absorption by the bones making yogurt an excellent choice to help prevent osteoporosis. The bacteria in yogurt produce lactic acid from the lactose in milk so many people who are lactose intolerant can tolerate yogurt made with live active bacterial cultures.

Tips for Using Yogurt in the Kitchen

- When using yogurt in baking or cooking, make sure there is no added gelatin, thickeners or artificial sweeteners, as these may not react well when heated.
- For the creamiest texture, lightly whisk yogurt before adding it to a sauce, soup or stew.
- Yogurt adds a light twist to dips - use it in place of mayonnaise or sour cream in your favourite recipes. Add a touch of yogurt to fruit milk shakes for a refreshing tang.
- Use full-fat yogurt in baking to add the most tenderness and moisture.
- Fold plain, vanilla-flavoured or fruit yogurt into whipped cream for a lighter dessert topping. Add about 1/4 cup (50 mL) of yogurt per 1 cup (250 mL) of whipped cream. The rich and tangy combination is terrific with berry, apple and pear desserts.
- No buttermilk? Substitute 2/3 cup (150 mL) plain yogurt and 1/3 cup (75 mL) milk; whisk them together and let stand for 5 minutes before adding to your recipe.
- Add chopped cucumber, dill, salt and a spoonful of mayonnaise to plain yogurt for a “best ever” vegetable dip!
- For a delightful, simple dessert or snack, top plain yogurt with any one or a combination of the following: cinnamon, applesauce, maple syrup, honey, raisins, chopped nuts or shredded coconut. Mix yogurt into your breakfast cereal - either with milk or just yogurt!
- Mix yogurt into pancake or waffle batters or dollop fruit yogurt on top before the syrup.

Tips courtesy of www.dairygoodness.ca

Sour Cream

Sour cream has become a staple in most kitchens, kept on hand to make quick dips, thicken sauces and, of course, to top baked potatoes. Like its relative, yogurt, sour cream also tenderizes and softens baked goods.

Lactic acid producing bacteria is added to cream to produce the slightly tart, thick sour cream.

Sour cream will keep up to two weeks in the refrigerator but cannot be frozen as it will separate and cannot be recombined

Cottage Cheese

Cottage cheese is a cheese curd product with a mild flavor. It is drained, but not pressed, so some whey remains and the individual curds remain loose. The curd is usually washed to remove acidity, leaving a sweet, curd cheese. It is not aged or coloured. Different styles of cottage cheese are made from milks with different fat levels.

The two major types of cottage cheese are small curd, high-acid cheese made without rennet, and large curd, low-acid cheese made with rennet. Rennet is a natural complex of enzymes that speeds curdling and keeps the curd that forms from breaking up. Adding rennet shortens the cheese making process, resulting in a lower acid, larger curd cheese as well as reduces the amount of curd poured off with leftover liquid (the whey).

Cottage cheese tends to be fairly high in protein and low in fat making it a popular option for athletes and for dieters. Cottage cheese can be eaten by itself, with fruit, with fruit puree, on toast, with tomatoes, in green salads or used as an ingredient in recipes such as lasagna, jello salad and various desserts.

Freezing cottage cheese is not recommended as it will become watery.

Nutrient Value of Cultured Dairy Products

Product	***Amount***	***Calories (Kcal)***	***Protein (g)***	***Fat (g)***	***Calcium (mg)***
Plain Yogurt (1-2%)	175mL	114	10	3	332
Plain Yogurt, fat free	175mL	79	8	Trace	253
Yogurt, vanilla or fruit	175mL	183	7	4	227
Drinkable Yogurt	200mL	145	5	3	191
Sour Cream	150mL	220	Trace	20	160
Cottage Cheese	125mL	86	15	1	73
Buttermilk	125mL	52	4.5	1	150

Source: Nutrient Value of Some Common Foods, 2008 Health Canada
www.hc-sc.gc.ca/fn-an/alt_formats/pdf/nutrition/fiche-nutri-data/nvscf-vnqau-eng.pdf

BEFORE THE NEXT MEETING

Try one of the following activities.

1. Make your own yogurt cheese spread! It can also be used as a dip!
Spoon plain yogurt, preferably Balkan-style or Mediterranean-style, into a sieve lined with a coffee filter or cheesecloth and set it over a bowl. Cover and refrigerate for a few hours for slightly thickened yogurt or overnight for very thick yogurt cheese. Use it in dips, spreads or in desserts. It can also be used in recipes that call for Greek-style yogurt.

How did it turn out? Record your results below.

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OR

2.Choose a dairy product and its substitute (e.g. Cream vs. Non-Dairy creamer). Compare the ingredient list. Taste each product. Which product did you like better? Why?

_____

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OR

3. Using a flyer or the Internet, find 3 different kinds of yogurt and record the names below. If you can, write down what style they are and what variety. If possible, try them out and record the differences in taste, texture, appearance and which ones you liked or didn't like.

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MEETING 4 DIGGING DEEPER

Overweight and obesity have become a global epidemic, affecting about a billion people worldwide. In Canada, more than 6 million people between 20 to 64 years old are overweight and another 2.8 million are obese. Together they represent 47% of the Canadian adult population. The prevalence in children is even more alarming. In 1998/99, the overweight and obesity rates among children ages 2 to 11 years old were 37% and 18%, respectively, compared to 35% and 15% for adults. According to the Heart and Stroke Foundation of Canada (2003), “the increasing number of overweight and obese Canadians now poses one of the greatest threats ever to public health in this country”.

Diet is one of the factors contributing to obesity as excessive calorie intake leads to weight gain. But there are many ways to reduce your fat intake using dairy products.

- Drink skim, 1% or 2% milk each day.
- Choose yogurt with 2% milk fat or less. Some varieties are higher in calories and sugar. Check the food label.
- Look for reduced fat or lower fat cheeses. Lower fat cheeses generally have less than 20% milk fat. You can also compare the Nutrition Facts tables to choose a lower fat cheese.
- Use butter, cream cheese, ice cream, coffee cream, whipping cream and sour cream in moderation.
- Choose milk instead of cream or coffee creamers/whiteners.
- Use plain skim milk yogurt instead of sour cream in recipes. To prevent yogurt from separating during cooking, mix 15mL of cornstarch with 15mL of yogurt and stir into 250mL of yogurt. Stir over medium heat until thickened.
- Make a sour cream substitute by blending 250mL of low fat cottage cheese with 15mL of skim milk. Add lemon juice to taste.
- Use low fat plain yogurt or blended cottage cheese for dips. Add onion, garlic powder and herbs for flavour.
- Substitute reconstituted skim milk powder or regular skim milk for whole milk when cooking.
- For added calcium and a richer flavour in soups and custards, add extra skim milk powder to skim or reconstituted skim milk. A drop of vanilla extract per 250mL will make cream soups or custard taste richer still.

At Home Activity

Explore the many different kinds of yogurts available in your grocery store or market. Find the following information:

1. Brand Name
2. Does it have the 100% Canadian Dairy symbol (Blue Cow)?
3. Where was it made?
4. Type of yogurt (Balkan, Swiss or Greek style)
5. Percent milk fat or butterfat (M.F. or B.F.)
6. Type of milk used to make the yogurt
7. Ingredients
8. Nutritional Information on the label (e.g. Calories, calcium, protein, carbohydrates (sugar), etc.)
9. Expiry Date

Select 3 kinds of yogurt you would recommend as part of a healthy eating plan.

_____

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_____

MEETING 5 GET THE SCOOP!

Objectives:

- Learn what kinds of ice cream are available.
- Learn the difference between ice cream and frozen desserts.
- Learn how ice cream is made.

Roll Calls

- Name you favourite flavour of ice cream.
- Name your favourite topping on an ice cream sundae.
- Name your favourite frozen treat. Is it a milk product?

Sample Meeting Agenda – 2 hrs. 10 minutes

Welcome, Call to Order & Pledge		10 min
Roll Call		5 min
Parliamentary Procedure	Minutes & Business	10 min
Topic Information Discussion	Discuss how ice cream is made and the different types of ice cream.	20 min
Activity Related to Topic	Activity #7 The Melt Test. See Record Book for activity.	10 min
Recipe	Choose a recipe from the Meeting #5 list in Recipe Booklet.	30 min
Topic Information Discussion	Discuss the difference between ice cream and frozen desserts. Discuss tips & tricks for enjoying ice cream.	10 min
Public Speaking Activity	Activity #8 Ice Cream Quiz – See Record Book for quiz. Have Members take turns at presenting each question when taking up the answers.	25 min
Wrap up, Adjournment, Social Time and enjoy the recipe!		10 min
At Home Challenge	Prepare one of the recipes listed for Meeting #5 and record the results in the Record Book.	

Topic Information

The History of Ice Cream

Frozen milk or cream desserts were enjoyed as far back as Roman banquets where Emperor Nero reportedly served cream frozen in snow - between 54 and 68 A.D! Legend has it that sweet, flavoured ice cream evolved in France and Italy during the 17th and 18th centuries from popular fruit ices (sorbets). Ice cream production sped up quickly after 1846 when the first hand-cranked ice cream freezer was invented in the United States. By 1851, the first large-scale ice cream manufacturer opened in Baltimore, Maryland.

How Ice Cream is Made

In its most basic form, ice cream is a mixture of cream and/or milk, sugar and sometimes eggs that is frozen while being churned to create a frozen product. In commercial ice cream making, stabilizers, such as plant gums, are usually added and the mixture is pasteurized and homogenized. The mixture may have flavourings added, from something as simple as vanilla, fruit or other flavours to pieces of candy.
The mixture is then frozen in special machines that agitate it (whip it), using paddles or dashers, combining air to keep the ice crystals small and freeze it at the perfect rate to create a smooth, creamy-textured ice cream. Its volume increases as it contains more and more air. Once the ice cream is packaged it is hardened at -20°C to -30°C and stored.

Frozen Fun

Hard Ice Cream - Traditional or regular ice cream made with cream and/or milk, sugar, and may contain eggs, stabilizers and other flavouring ingredients such as vanilla, chocolate, fruit and many other add-ins. The options seem endless! This ice cream contains a minimum of 10% milk fat and can have as high as 16% milk fat in some premium ice creams.

French Ice Cream - Traditional ice cream made with a custard base containing cream and/or milk, egg yolks or whole eggs, sugar, stabilizers and other flavourings.

Soft Ice Cream - Ice cream made with milk and/or cream, sugar, stabilizers and flavourings that are frozen at a higher temperature in a special machine that keeps the mixture smooth, creamy and soft while it is being frozen. It is stored in the machine as a liquid ice cream mix and frozen as it's served into a cone or bowl. This is available at restaurants and specialty ice cream shops.

Light Ice Cream - Traditional ice cream made with milk ingredients, sugar, stabilizers and other flavourings that contain at least 25% less milk fat than regular hard ice cream.

Reduced Fat Ice Cream - Made with lower fat milk ingredients, sugar, stabilizers and other flavourings. The amount of fat can vary and is declared on the label.

Fat-free Frozen Dairy Dessert - Made with modified milk ingredients, sugar or artificial or natural sweeteners and stabilizers, this frozen dessert contains about 0.1% fat or 0.5g fat per serving.

No Sugar Added Ice Cream or Frozen Dairy Dessert - Similar to ice cream, generally made with milk ingredients and stabilizers as well as artificial sweeteners or natural sugar substitutes and other flavourings. These desserts are often lower in fat than regular ice cream.

Lactose-free Ice Cream - Ice cream made with added lactase enzyme and therefore contains no detectable lactose making it more easily digestible for people with lactose intolerance.

Gluten-free Ice Cream - Since some stabilizers and other ingredients added in ice cream production may contain gluten, it is important to read the ingredients list to make sure the ice cream is gluten-free. Some brands include a “gluten-free” logo on the label. Organic Ice Cream - Any type of ice cream made from organically produced milk and other ingredients.

Italian-style Gelato - A dense ice cream generally made with more milk than cream (making it lower in fat), egg yolks, sugar or other sweeteners and flavourings. Gelato has a more intense flavour than traditional ice cream and less air.

Sherbet – A frozen dessert made primarily of fruit juice, sugar, and water, and also containing milk, egg white, or gelatin.

Frozen Yogurt – Frozen yogurt usually consists of milk solids, some kind of sweetener, milk fat, yogurt culture, colouring and flavouring. It is slightly more tart than ice cream as well as lower in fat (due to the use of milk instead of cream).

Fun Fact
It takes 1.21 litres of milk to make 1 litre of ice cream.

Ice Cream Versus Frozen Dessert

If it looks like ice cream, it must be ice cream, right? There was a time when that was true. But these days you can't be so sure. Many of the products for sale in the ice cream aisle at your grocery store are 'frozen desserts' that are often made with edible oil products and don't contain the nutrients naturally found in milk. Read the Nutrition Facts table on the label. Frozen desserts are made with oils like palm kernel or coconut oil. Ice cream is made from 100% milk (including ingredients derived from milk, e.g. cream, skim milk powder and whey powder).

Most manufacturers have removed the words 'ice cream' from their packaging and replaced them with the term 'frozen dessert'. To be sure you are buying ice cream, check the label for the 100% Canadian milk symbol (below). It identifies ice cream made from 100% Canadian milk.

And remember: If it doesn't say ice cream on the package, it's not ice cream!

100% CANADIAN MILK™

Fun Fact
Canadians, on average, ate 5.5 litres of ice cream per person in 2010.

Ice Cream Tips and Tricks

You can eat ice cream straight from a cone, a bowl or even incorporate it into other treats and desserts. Here are a few handy tips:

- Add nutritious fruit to your ice cream. Let vanilla ice cream soften slightly and fold in: rhubarb sauce, strawberry sauce, mango sauce, raspberry sauce, etc., then freeze until firm.
- Make a quick Praline Ice Cream Sundae: toast chopped pecans in a skillet until fragrant and stir in corn syrup and brown sugar. Spoon over a bowl of vanilla ice cream.
- Classic ice cream sodas get a new twist: Combine fruit juice and sparkling water (or use sparkling fruit juice) and add a scoop of ice cream. Serve in a chilled tall glass with a straw, of course.
- For a comforting treat, top vanilla ice cream with apples sautéed in butter and brown sugar. Sprinkle with chopped toasted pecans.

- Serve ice cream with a Mexican flair – butter a small flour tortilla and sprinkle it with cinnamon, mold over the bottom of a bowl and toast it in the oven until crisp. Let it cool then fill it with ice cream.
- Make fun ice cream sandwiches by putting a scoop of butterscotch ice cream between two buttery oatmeal cookies or by putting a scoop of strawberry ice cream between two chocolate chip cookies. Another option - Peanut Butter S'mores ice cream sandwiches: spread peanut butter on one graham cracker and thick fudge sauce on another graham cracker and add a scoop of vanilla ice cream in between.

Tips courtesy of www.dairygoodness.ca

Before the Next Meeting

Try one of the following activities.

1. Create your own milk shake using ice cream. Write your recipe below. Also, put your comments below as to how it tasted and whether you liked it.

OR

2. Conduct a survey to find out your friends or family's favourite ice cream flavour. Was there one flavour that was more popular? A flavour that no one liked? Put your results in the box below.

OR

3. Do a cost comparison of frozen desserts. Compare two or more of these:

	Size of the package	***Cost of the package***	***Number of servings in package***	***Cost per serving***
Regular ice cream				
Premium ice cream				
Soft serve ice cream				
Ice cream bar				
Frozen yogurt				

MEETING 5 DIGGING DEEPER

More About Ice Cream

What's in the ice cream you buy?

Ingredients	***Function***
Milk fat (cream) or fat in general, including that from non-dairy sources.	• increases the richness of flavour in ice cream • produces a characteristic smooth texture • helps to give body to the ice cream, due to its role in fat destabilization • aids in good melting properties due to its role in fat destabilization
MSNF - Milk Solids-Not-Fat (lactose, caseins, whey proteins, minerals, and ash) Most common sources of MSNF are concentrated skimmed milk and spray process low heat skim milk powder.	• improve the texture of ice cream, due to the protein functionality • help to give body and chew resistance to the finished product • helps to prevent snowy or flaky textures due to the protein functionality • may be a cheap source of total solids, especially whey powder
Sweeteners (most commonly used is sugar derived from corn syrup)	• improve the texture and palatability of the ice cream • give ice cream its sweetness • enhance the flavour of the ice cream • are usually the cheapest source of total solids • aids in keeping ice cream scoopable at cold temperatures
Stabilizers - polysaccharide food gums (Locust bean gum, guar Gum, carboxymethyl cellulose (CMC), xanthan gum, sodium alginate, carrageenan)	• stabilize the emulsion to prevent creaming of fat • help hold the air bubble structure of ice cream • helps to hold the flavourings, e.g., ripple sauces • prevent lactose crystal growth and reduce ice crystal growth during storage • provide some body without being gummy • give the ice cream a better texture

Emulsifiers (mono-glycerides, di-glycerides, polysorbate 80, buttermilk, glycerol esters, eggs)	• protects ice cream from separating when exposed to temperature changes • gives smoothness and uniform texture to ice cream
Colouring	• adds colour or prevents colour change
Flavouring	• improves flavour or adds a specific flavour
Air	• lightens the texture

Ice Cream – The Facts About Fat

Ice cream contains fat and there's no escaping it. That's because all ice cream is made with milk fat. Other ingredients like eggs, chocolate and nuts, may also contribute to the level of fat in ice cream.

All ice creams are not equal. Here's the scoop!

Fat and Calories in 125mL Vanilla Ice Cream

Product	***Fat (g)***	***Calories***
Ben & Jerry's (107g)	14.0	230
Mapleton's Super Premium Organic	11.0	180
Kawartha Dairy	11.0	160
President's Choice Cream First	10.0	170
Hewitt's	9.0	160
Chapman's Premium French Vanilla	8.0	160
Kawartha Dairy No Sugar Added	8.0	110
President's Choice Cream First Dulce de Leche	7.0	160
Breyers Double Churn - Natural	7.0	140
Nestle Real Dairy		
Natural Vanilla	7.0	130
Shaw's	7.0	110
Hewitt's Sugar Free	6.0	150
Chapman's	6.0	120
Breyers Natural Vanilla Bean Light	3.5	120

Fat and Calories in 125mL Frozen Yogurt and Sherbet

Product	*Fat (g)*	*Calories*
Hewitt's Strawberry Yogurt	4.0	130
Ben & Jerry's Cherry Garcia Yogurt (108g)	3.0	200
Mapleton's Super Premium Organic Vanilla Yogurt	3.0	160
Hewitt's Raspberry Sherbet	2.0	175
Kawartha Dairy Black Cherry Yogurt	2.0	110
Chapman's Vanilla Yogurt	2.0	100
Chapman's Strawberry Yogurt	2.0	100
Del Monte Sherbet & Frozen Yogurt Mixed Berry	1.5	120
Kawartha Dairy Orange Sherbet	1.0	130
Kawartha Dairy Raspberry Lemon-Lime Sherbet	1.0	120

Fat and Calories in Frozen Dessert Bars (per bar/cone)

Product	*Fat (g)*	*Calories*
President's Choice Vanilla Ice Cream Cones (140mL)	21.0	350
Nestle Mr. Big Bar (86mL)	16.0	250
Nestle Drumstick Cookie Dough (180mL)	13.0	290
Breyers Vanilla Chocolate Cone Ice Cream Treat (140mL)	13.0	270
Nestle Oreo Sandwich (125mL)	10.0	250
Chapman's Super Cone – Vanilla or Chocolate (120mL)	8.0	210
President's Choice Decadent Chocolate Chip Cookie Vanilla Ice Cream Sandwich (100mL)	7.3	230
Chapman's Vanilla Frozen Yogurt Bar (55mL)	4.0	90
Del Monte Real Fruit		
Strawberry & Kiwi Bars (50mL)	0	50
Breyers Real Fruit Original Ice Cream Treats (50mL)	0	45

MEETING 6 DAIRY EVERY DAY

Objectives:

- Learn how to choose a healthy menu plan.
- Learn the importance of following Canada's Food Guide.
- Review material learned in the Milk Makes It Better project.

Roll Calls

- What's one new thing you discovered about dairy products during this project?
- Name your favourite recipe that you have made from this project either at the meetings or at home.
- Name one benefit to including milk in your daily meal plan.

Sample Meeting Agenda – 2 hrs. 25 minutes

Welcome, Call to Order & Pledge		10 min
Roll Call		5 min
Public Speaking/Judging Activity	Minutes and Business	10 min
Recipe	Choose any recipe from the Recipe Booklet	30 min
Topic Information Discussion	Discuss healthy meal plans and review Canada's Food Guide. Review the Members' Eat Right Journals that they were given at Meeting #3.	20 min
Activity Related to Topic	If you have access to high-speed Internet, have each Member use the Calcium Calculator (found at: www.bcdairyfoundation.ca/interactive/calcium-calculator/) to see whether they're getting enough calcium in a day.	20 min
Public Speaking/Judging Activity	Activity – Judging Meal Plans (found on the following pages).	20 min
Topic Information Discussion	Discuss plans for Achievement program.	20 min
Wrap up, Adjournment, Social Time and enjoy the recipe!		10 min
At Home Challenge	Get ready for the Achievement Program!	

Topic Information

Choosing a Healthy Menu Plan

Milk and alternatives are only one of the four food groups that make up a healthy diet. To get all the nutrients that you need, you should eat foods from all of the four food groups:

- Milk and Alternatives
- Meat and Alternatives
- Grain Products
- Vegetables and Fruit

If you miss one food group, you will be missing the key nutrients that that particular group provides.

Four Food Groups	***Key Nutrients***
Milk and Alternatives	Calcium Protein Riboflavin Vitamin A & D
Meat and Alternatives	Protein Iron B Vitamins
Grain Products	Carbohydrates Iron B vitamins
Vegetables and Fruit	Vitamin A Vitamin C

For example, vegetables and fruit are excellent sources of Vitamin C but not calcium, which is available in milk and alternatives. If you omit foods from the milk and alternatives group you will not be getting enough calcium. If you follow Canada's Food Guide and eat foods from all four food groups every day, you will get all the nutrients you need.

Get your own copy of Canada's Food Guide at:
http://www.hc-sc.gc.ca/fn-an/alt_formats/hpfb-dgpsa/pdf/food-guide-aliment/print_eatwell_bienmang-eng.pdf

You Be The Judge!

To see how well you understand healthy eating, select the healthiest meal plan using the chart provided in the following pages as well as in the Record Book and based on the criteria on the Judging Card also provided in the Record Book.

MENU 1	***MENU 2***
Whole grain cereal with 2% milk **** Cheese & lettuce sandwich on whole wheat bread Apple Carton of chocolate milk **** Chocolate chip cookies Bottle of Water **** Pizza with the works Salad bar Pop **** Popcorn	Scrambled egg Whole wheat toast Apple juice **** Sub bun with roast beef, lettuce and a slice of cheese Fruit salad Vegetable juice **** Cream of mushroom soup Homemade macaroni & cheese Hot dog with whole wheat bun Carton of chocolate beverage Vanilla ice cream cone
MENU 3	***MENU 4***
Chocolate bar **** Cheeseburger French fries Milkshake **** Apple **** Fish & chips Coleslaw Milk **** Hot Chocolate Cookies **** Potato chips Can of pop	Whole wheat yogurt pancakes with strawberries and whipped cream Orange Juice **** Bran muffin with a slice of cheese Carton of 2% milk **** Tuna sandwich Oatmeal cookies Carton of chocolate milk **** Baked chicken Mashed potatoes Green beans Fruit cocktail ****

Using the chart below, determine whether each menu has the required number of servings for the day based on Canada's Food Guide (download it for free at the Health Canada website! www.hc-sc.gc.ca).

MENU 1 Vegetables & Fruit (6 to 8 servings)								
Grain Products (6 to 7 servings)								
Milk & Alternatives (3 to 4 servings)								
Meat & Alternatives (1 to 3 servings)								
MENU 2 Vegetables & Fruit (6 to 8 servings)								
Grain Products (6 to 7 servings)								
Milk & Alternatives (3 to 4 servings)								
Meat & Alternatives (1 to 3 servings)								
MENU 3 Vegetables & Fruit (6 to 8 servings)								
Grain Products (6 to 7 servings)								
Milk & Alternatives (3 to 4 servings)								
Meat & Alternatives (1 to 3 servings)								
MENU 4 Vegetables & Fruit (6 to 8 servings)								
Grain Products (6 to 7 servings)								
Milk & Alternatives (3 to 4 servings)								
Meat & Alternatives (1 to 3 servings)								

Judging Card – Judging a set of Menus

Criteria	*Points*
1. Does it follow Canada's Food Guide?	30
2. Does it include just a few high fat foods or a lot?	25
3. Does it include just a few high calorie, low nutrient foods or a lot?	10
4. Have some good sources of fibre been included (whole grains, vegetables and fruit)?	25
5. Attractiveness:	10
a) Is it colourful?	
b) Do the flavours go well together?	
c) Are there a variety of textures, i.e. soft, crisp, chewy, crunchy?	
d) Has the menu used a variety of food in each meal?	
Total Points:	100

Format for Giving Reasons:

I place this class of menus _____, _____, _____, _____.

Placing menu _____ first because _____
_____

Placing menu _____ over menu _____ because _____
_____

Placing menu _____ over menu _____ because _____
_____

Placing menu _____ over menu _____ because _____
_____

Placing menu _____ at the bottom today because _____
_____

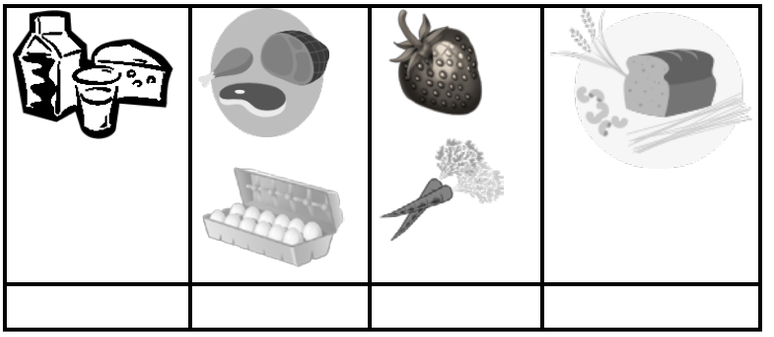
For these reasons, I place this class of menus _____, _____, _____, _____.

Judging a Meal (for Juniors)

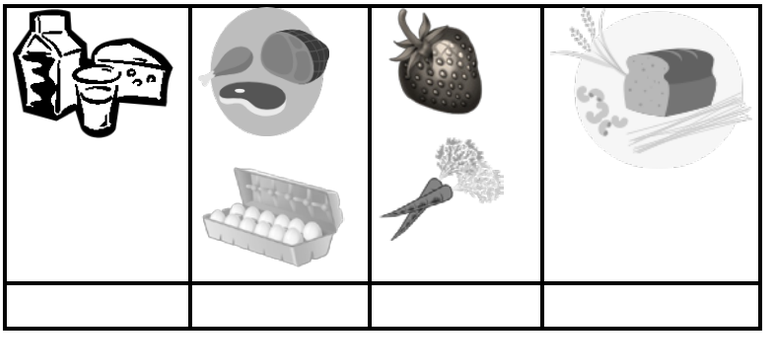
Lunches Made with Cheese

Which of these lunches is the best for your body?

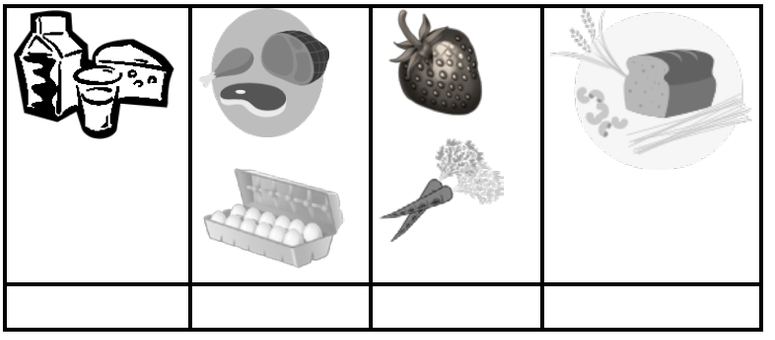
1. Vegetable pizza, pop



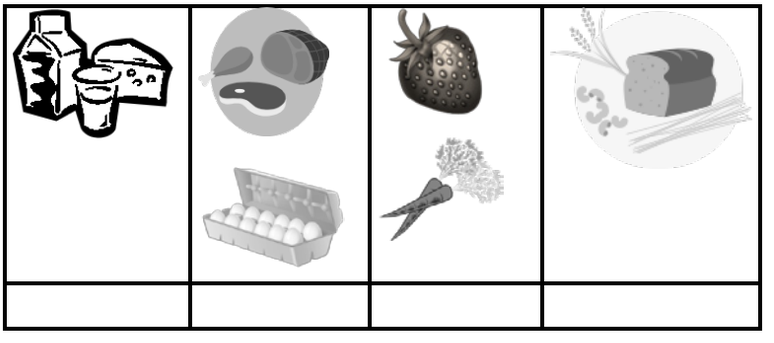
2. Cheeseburger, fries with gravy, milkshake



3. Lettuce salad with cheese and ham cubes, glass of apple juice, whole wheat bun



4. Potato and cheese soup, whole wheat crackers, chocolate cupcakes



When judging the lunches, think about:

- Does the lunch include food from all 4 food groups?
- Would it look and taste good?
- Is there a variety of food (hot, cold, soft, crunchy, sweet and not sweet)?
- Is there just one or many foods that contain a lot of fat and sugar?