Mijipjewey na Pisun – Food is Medicine

Learning Objectives

1. Learn how a trout is filleted in the traditional Mi'kmaq way and discuss traditional ways of waste reduction.
2. Identify foods that have starch and examine traditional sources of carbohydrate

Introduction

Mijipjewey na Pisun is the Mi'kmaq phrase that means food is medicine. Mijipjewey means food and is pronounced me-jib-joe-whey. Pisun means medicine and is pronounced pee-soon. This means that what we eat provides what our bodies need to be healthy. In this lesson we will learn about nutrients and traditional foods.

Nutrition and food is a very important part of the Mi'kmaw culture. The hunt for and the preparation of food was/is a traditional activity, that in some cases involve/d the entire community. Knowledge of foods, food sources, preparation and storage was/ is required to keep a community nourished. Celebrations like the new moon ceremony and weddings include feasts. Current and traditional meals often include all three macronutrients.

The food we feed our bodies is thought to help us to fight off disease, give us energy, and help us to recover when we do get sick. A variety of foods need to be eaten each day to ensure that we are getting all the necessary nutrition we must have to be healthy.

Today, we will learn about traditional nutrition and foods in a laboratory.

Laboratory (Lab) Safety Rules

- Lab coats MUST be worn at all times
- No running or horseplay
- Report all accidents to a camp counsellor
- No open toed shoes or high heels
- Tie back long hair and wear a hair net
- Do not chew gum.
- Wash your hands with warm soapy water before and after handling food
- Wear oven mitts when handling hot pots or pans
- When tasting food, put a small amount on a clean plate, use your own utensil
- Avoid contact with chemical cleaners and sanitizers

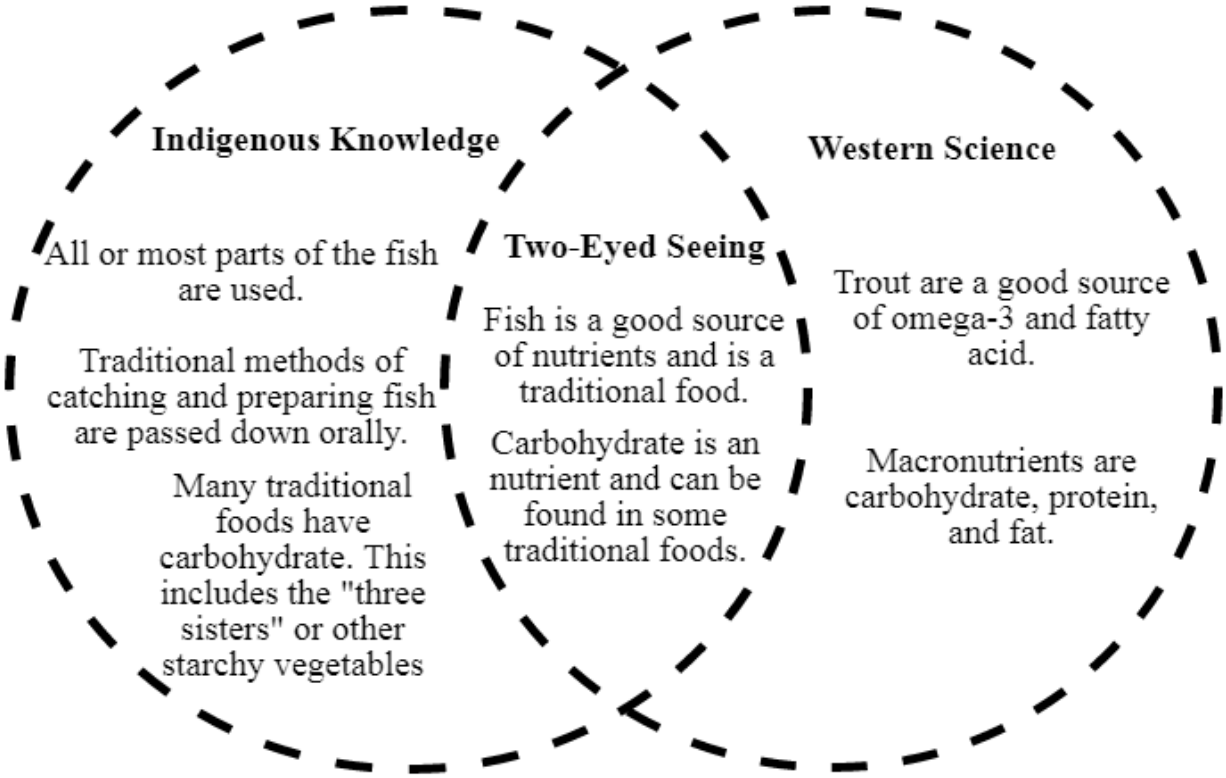

Figure 1: Two-Eyed Seeing Diagram

Table 1: Vocabulary

Carbohydrate	A macronutrient (big nutrient) that is typically a source of energy in the human diet. There are three types: 1.) sugar, 2.) starch, and 3.) fiber (2).
Dietitian	A regulated professional who has gone to university and has completed an internship. Their jobs are to help people and communities understand food and nutrition. They can work in hospitals, for communities, in the food industry, or as researchers (3).
Fillet	A piece or slice of boneless meat or fish (4).
Human Nutrition	The science of food, how the human body uses it and how it affects health (5).
Protein	A macronutrient that can give the body energy. It is found in foods like meat, milk, eggs, and beans (6).
Fat	A macronutrient that the body can use for energy. Fats can be found in many different types of food (7).
Sinew	A tough fibrous tissue in fish that helps connect the muscle to the bone. When it is dried, it can be used as a thread (8).
Bone Marrow	A semi-solid tissue in bodies that helps make new blood cells. It is a soft substance that fills the bones of people and animals. It is made up of protein and fat (9).

Activity 1: Traditional Food Preparation and Nutrition

In this activity, a camp counsellor and laboratory instructor will demonstrate how to fillet a fresh trout. The steps have been included on the next page.

What types of trout are available in Nova Scotia?

Nova Scotia is almost surrounded by water and has many miles of seashore. There are also many lakes and rivers that have fish that are good to eat. Trout can be found in both fresh and saltwater and is available between April 1st and August 31st. The types of trout that are commonly caught in Nova Scotia are the brown, rainbow, and speckled trout.

English name: Rainbow trout

Binomial name: *Oncorhynchus mykiss* (On-CHORUS-min-ik-us my-kiss)

Mi'kmaw name: Atoqwa'su (Ahhh-toe-kwa-zoo)

Traditionally, all parts of the fish (animals and plants) were used (in some way). For instance, some animals were eaten completely, while others had parts that were used to make tools and sinew. Fish heads can be used to make soups, while sinew is often used in traditional Mi'kmaw clothing. Bone marrow can be extracted from fish (by boiling, chewing etc) and used to make broths, a traditional source of calcium.

What we need for our activity:

- One filleting knife
- One cutting board
- One whole trout

What we will do, step by step:

Step 1: Gutting the trout

Listen to the camp counsellor and follow along with the directions below.

a) Using a fillet knife, slice the belly of the trout from the hole near the tail to the gills. Be careful not to cut too deep, as you do not want to cut the organs. Remove the organs and set aside (these can be added to compost).
b) Clean blood from the spine of the trout under running water. The trout should now look like the one in figure 2 and figure 3 (below).

Step 2: Cut the head off the trout.

a) Cut between the gills and the front fins
b) Review figure 4.

Please note: The head of the trout contains flesh that can be used in broths and soups (figure 5 and 6).

Step 3: Starting next to the back fin on the underside of trout, cut through the tail.

Step 4: Remove the ribs

a) Insert the fillet knife just below the ribcage like in figure 9. The knife should be inserted next to the backbone and be gently worked outward to loosen the bones and detach them from the meat.
b) Starting at the front of the trout and moving toward the back of the trout, gently work the knife along the backbone. About half-way along the backbone there is another small set of ribs; gently run the tip of the knife under these to loosen the meat from them.

   Please note: You can use your fingers to easily feel the set of small ribs (figure 10).

c) Starting at the front of the trout and moving toward the back of the trout, continue to work the knife along the backbone until the entire fillet has been worked from the bone (figure 11).

Step 5: Remove the deboned fillet from the trout.

a) Lay the trout flat on your work surface.

b) b) Cut the skin that attaches the fillet to the other side of the trout by cutting lengthwise from the front to the tail (figure 12 and figure13). Be sure to cut around any fins that are on the spine of the trout.

Please note: The ribs and backbone should be separated from the fillet

Step 6: Remove the fin from the fillet.

a) Remove the fin from the side of the fillet by cutting around the fin (figure 14 and 15).
b) Use your fingers to feel for any remaining pieces of the fin under the skin (it will feel firm and tough). Cut off any pieces of fin you feel.

Step 7: Repeat step 4 to 6 (above) to debone the other fillet and remove it from the backbone.

Step 8: Check the fillets for any bones that may remain. To remove a bone, hold the bone with your fingers and gently pull it out of the meat (figure 16).

Original Pictures/ Figures of Your Steps Above

Photographer: Antonia Harvey

Figure 2. Trout side

Figure 3. Trout bottom

Figure 4. Cutting off the head

Figure 5. The head cut off

Figure 6. The head

Figure 7. Cutting through the tail

Figure 8. The tail cut through

Figure 9. Removing the ribs

Figure 10. Use your fingers

Figure 11. Cut to the backbone

Figure 12. Cut through the skin

Figure 13. Cut lengthwise to tail

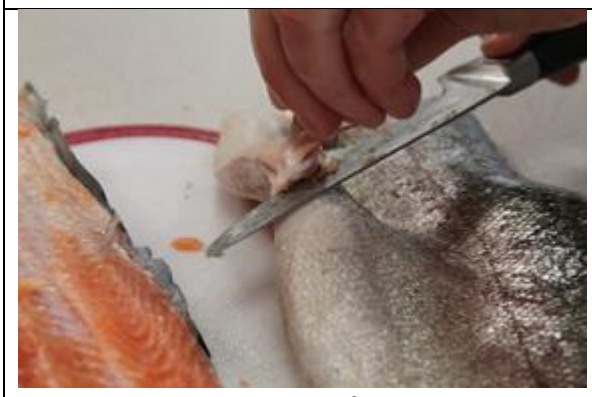

Figure 14. Removing the fin

Figure 15. Fin removed

Figure 16. Removing fish bones

Activity 2: Sampling Cooked Trout with Fiddleheads

In this activity you will sample some traditional Mi'kmaq foods from Mi'kma'ki. We have prepared two recipes of traditional foods; trout and fiddleheads. Both recipes have been included (at the end of this activity) for you to take home.

The foods we will try today are nutrient rich (or nutritious). The Canadian Nutrient File is a free web-based application that allows us to search for nutrition information on many foods; including traditional foods from all over Turtle Island (North America). Check it out here: *https://food-nutrition.canada.ca/cnf-fce/index-eng.jsp*

Below, we have included nutrition information on rainbow trout and fiddleheads. We got this information from the Canadian Nutrient File .

Fish, trout, rainbow, wild, baked or broiled

75g or 2.65 ounces

Energy (kcal)	150 kCal
Carbohydrate	0.0 g
Total Fat	5.82 g
Protein	22.92 g
Fiber	0.0 g
Minerals	
Calcium, Ca	86 mg
Phosphorus, P	269 mg

Fiddlehead greens (ferns), frozen, boiled, drained

100g or 3.53 ounces

Energy (kcal)	34 kCal
Carbohydrate	5.74 g
Total Fat	0.35 g
Protein	4.31 g
Fiber	1.9 g
Minerals	
Calcium, Ca	24 mg
Phosphorus, P	58 mg

Activity 3: The Science of Traditional Carbohydrate Sources

Carbohydrates are one of three nutrients (including protein and fat) that the body uses for energy.

Carbohydrates come in three forms: 1.) starches, 2.) sugars and 3.) fibers. Today we will learn about starch. Starch is known for its capacity for energy provision.

What types of food with carbohydrate have Mi'kmaq people in Nova Scotia eaten traditionally?

Fiddleheads are one example of a food with some carbohydrate (1.6 g per serving) that grows in Nova Scotia. They are harvested for eating in the early spring. Fiddleheads are baby ferns and are still curled up. They can be found all over Turtle Island (North America). If you wish to pick fiddleheads remember that you should always go with someone that knows what to pick. Fiddleheads can be bought at some stores in the spring and are good to eat boiled or steamed.

Fiddlehead safety tips: *https://www.canada.ca/en/health-canada/services/food-safety-fruits-vegetables/fiddlehead-safety-tips.html*

Common name: Filddleheads

English name: Ostrich fern

Binomial name: *Matteuccia struthiopteris*
(muh-TYOO-kee-uh stroo-thee-OP-tur-iss)

Mi'kmaw name: Musulsi (Moose-zoos-see)

What we need for our activity:

- Iodine solution
- Samples of different foods provided by the camp counsellor

What we will do, step by step:

In this activity, an instructor will demonstrate how to test foods for starch using Iodine, I.

Step 1: Create a hypothesis for the different foods

Examine the different foods that will be tested. Make a hypothesis (guess) about which have starch, and which do not. Record your hypothesis in Table

Step 2: Examine the Iodine

Look at the iodine provided by the camp counsellor. Fill in the following blanks.

The iodine is _____ and has a _____ color.

Step 3: Test for starch

The camp counselor will add a few drops of starch to each of the food.

Observe the food to see if there is a color change.

Record which foods had starch and which did not in Table 2: Test for Carbohydrate.

Step 4: Examine traditional foods

- Examine the different traditional foods that will be tested.
- Guess which have starch, and which do not. Record your hypothesis in Table 2: Test for Carbohydrate.

Step 5: Test for starch

The camp counsellor will go through the different traditional foods and add a few drops of starch to each of the food.

Observe the food to see if there is a color change.

Record which foods had starch and which did not in table 2 on the next page.

Table 2: Test for Carbohydrate

Food item	**Hypothesis (Starch or no Starch?)**	**Color after Iodine is added**	**Starch (yes or no)**
Flour			
Bread			
Pasta			
Apples			
Banana			
Tomato			
Lemon			
Potato			
Corn			
Cauliflower			
Onions			
Rice			
Cooked Chicken			
Cooked Beef			
Cooked Fish			
Cattail Root			
Broad Leaf Arrowhead Root			
Fiddlehead			

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References

1. Government of Canada [Internet]. Canada.ca. Government of Canada; 2019 [cited 2019Jun26]. Available from: https://www.canada.ca/en/health-canada/services/nutrients/carbohydrates.html

2. Learn about Dietitians [Internet]. Dietitians of Canada. 2018 [cited 2019Jun26]. Available from: https://www.dietitians.ca/About-Us/About-Dietitians/Learn-about-Dietitians.aspx

3. learnersdictionary.com, 2019 Merriam-Webster, Incorporated, http://learnersdictionary.com/definition/Fillet

4. Joint Collection Development Policy: Human Nutrition and Food [Internet]. U.S. National Library of Medicine. National Institutes of Health; 1998 [cited 2019Jun26]. Available from: https://www.nlm.nih.gov/pubs/cd_hum.nut.html#2

5. Government of Canada [Internet]. Canada.ca. Government of Canada; 2019 [cited 2019Jun26]. Available from: https://www.canada.ca/en/health-canada/services/nutrients/protein.html

6. Government of Canada [Internet]. Canada.ca. Government of Canada; 2019 [cited 2019Jun26]. Available from: https://www.canada.ca/en/health-canada/services/nutrients/fats.html#ab

7. learnersdictionary.com, 2019 Merriam-Webster, Incorporated, http://learnersdictionary.com/definition/Sinew

8. learnersdictionary.com, 2019 Merriam-Webster, Incorporated, http://learnersdictionary.com/definition/Marrow

9. learnersdictionary.com, 2019 Merriam-Webster, Incorporated, http://learnersdictionary.com/definition/Complex