Worksheet 2 Name _____

Maple Learning Activity 2 Making Maple Cream

Maple syrup is made by cooking maple sap until it reaches the temperature 7.1° F above the boiling point of water. To make maple cream syrup is boiled to 23° F above the boiling point of water.

Ask your teacher what is today's boiling point of water. _____° F

Add 23° F to today's boiling point of water to see the temperature the syrup was boiled to make today's maple cream. _____° F

Write down the time on the clock when you started stirring your cream. _____.

Write down the time on the clock when you first notice the syrup changing color. _____

Write down the time on the clock when you decided your cream was finished, ready to eat. _____

How much time did it take from the time you started stirring until it was finished and you were ready to eat. _____

Did the syrup become lighter in color or darker in color as it changed from syrup to cream? _____

Did the cream feel smooth to your tongue or grainy? _____

Did you like the maple cream? ____

Many maple producers make maple cream because it tastes so good and it stays on your bread, roll or bagel better than maple syrup.

Maple Learning Activity 2 Making Maple Cream

Background:

Maple cream is a value-added 100% maple product that is made from pure maple syrup. The name maple cream or maple butter would imply that dairy products are involved but they are not. Maple cream is made by additional cooking, cooling, and stirring the syrup. The finished maple cream should be light colored with creamy texture. It can be used on toast, bagels, muffins, pancakes, doughnuts and combined with other bakery or confection products. Maple cream is an all natural product comprised mainly of sugars but it also has other important nutrients such as amino acids, proteins, organic acids, minerals and trace levels of vitamins. See the nutrition label that is included.

Materials:

1 quart of maple syrup – to be cooked and cooled ready for cream making..

A cup or bowl and spoon or sucker stick for each student.

Bread, cracker, or bagel for students to put the cream on. This is not absolutely necessary as they can also consume the cream directly.

Procedure:

Cook up the syrup for cream several hours before you plan to conduct this activity so the syrup can be cooled down to at least room temperature.

Place one table spoon of the cooled cream into each student's cup or bowl. Have the student's note the color of the cooled syrup and the time they start stirring; repeat these observations when they first notice it changing color and when they believe the cream is finished.

Cooking and cooling the maple syrup for creaming:

Generally maple cream is made from light or medium amber maple syrup. To prepare maple cream cook maple syrup to a temperature of 22° to 23° F (12° to 13° C) above the boiling point of water. Establish the exact temperature at which water boils at the time the maple spread is prepared since the exact temperature at which water boils depends on weather and elevation. Watch the boiling syrup carefully as the temperature climbs. It can easily boil over if the stove is a little too hot. It can also over cook very quickly near the end. A good digital thermometer, especially one that shows temperatures to one tenth of a degree can be very helpful in determining the temperature to finish accurately. As soon as the syrup reaches the desired temperature it should be removed from the heat and cooled. The pan of cooked syrup can be placed in a pan of cold water. Ice can be added to the water to speed the process. Be sure that the cooling syrup solution is kept absolutely still. Do not move or stir it, because crystals will begin to form and result in a grainy maple cream. Leaving the digital thermometer in the pan as it is cooling is the best way to keep track of the temperature, continually testing the syrup by sticking a thermometer in and out of the syrup may cause it to begin to crystallize too soon. The cooler the syrup becomes before stirring the smoother cream will be. Cooling to between 45ºF and 55ºF

will tend to make the finest cream but it can become very stiff and difficult to handle so for the purposes of this activity anything below 70° F should work fine.

When children begin stirring the cooled syrup expect to see the syrup warm up and become more fluid. This warming always happens when crystallization occurs. It is called the heat of crystallization and is not due to the room being too warm or the stirring being too vigorous it is the natural reaction to crystals forming. Later it will gradually become thicker, lighter in color, and become a smooth paste like consistency. Once it takes on that creamy texture and appearance it can be spread on bread, crackers or bagels or the children can consumer it directly.

MAPLE CREAM - SINGLE SERVE - Standard

Nutrition Facts

Serving Size 2 tbsp (30mL)
Servings Per Container 1

Amount Per Serving

Calories 90	Calories from Fat 0

	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Polyunsaturated Fat 0g	
Monounsaturated Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 24g	**8%**
Dietary Fiber 0g	**0%**
Sugar 21g	
Other Carbohydrate 0g	
Protein 0g	

Vitamin A 0%	?	Vitamin C 0%	
Calcium 2%	?	Iron 2%	

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Potassium	Less than	3,500mg	3,500mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g
Protein		50g	65g

Calories per gram:
Fat 9 ? Carbohydrate 4 ? Protein 4

*Percent Daily Values are based on a 2,000 calorie diet.