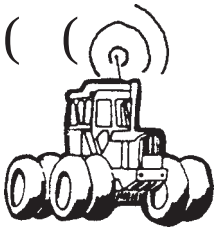
ACTIVITY 1



Eat Like a Brazilian

Activity:

A nation's food provides an easy approach to many aspects of its culture. In this activity, by preparing and tasting several native foods of Brazil, your students can begin to gain an appreciation of how the founding cultural groups contributed to modern Brazilian society.

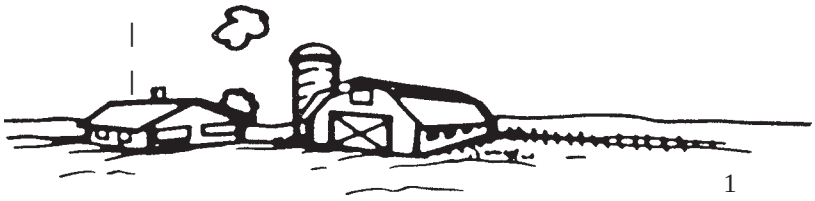
Curriculum Fit:

Science, Grade 7, Plants for Food and Fibre
Outcomes for Science, Technology and Society (STS) and Knowledge
Students will:
2. Investigate life processes and structures of plants, and interpret related characteristics and needs of plants in a local environment
· describe the general structure and functions of seed plants
· describe life cycles of seed plants, and identify example methods used to ensure their germination, growth and reproduction

Skill Outcomes
Initiating and Planning
Students will:
Ask questions about the relationships between and among observable variables, and plan investigations to address those questions
• define practical problems
• identify questions to investigate arising from practical problems and issues
• state a prediction and a hypothesis based on background information or an observed pattern of events

Performing and Recording
Students will:
Conduct investigations into the relationships between and among observations, and gather and record qualitative and quantitative data
• research information relevant to a given problem
• observe and record data, and create simple line drawings
• estimate measurements

Analyzing and Interpreting
Students will:
Analyze qualitative and quantitative data, and develop and assess possible explanations
• compile and display data, by hand or computer, in a variety of formats, including diagrams, flow charts, tables, bar graphs and line graphs



Communication and Teamwork
Students will:
Work collaboratively on problems; and use appropriate language and formats to communicate ideas, procedures and results
• communicate questions, ideas, intentions, plans and results, using lists, notes in point form, sentences, data tables, graphs, drawings, oral language and other means

Attitude Outcomes
Scientific Inquiry
Students will be encouraged to:
Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues

Collaboration
Students will be encouraged to:
Work collaboratively in carrying out investigations and in generating and evaluating ideas

Grade 9, Biological Diversity
Outcomes for Science, Technology and Society (STS) and Knowledge
Students will:
2. Investigate the nature of reproductive processes and their role in transmitting species characteristics
• distinguish between sexual and asexual reproduction, and identify and interpret examples of asexual and sexual reproduction in different species, by:
- describing representative types of asexual reproduction
- describing representative types of sexual reproduction
- describing examples of organisms that show both sexual and asexual reproduction
3. Describe, in general terms, the role of genetic materials in the continuity and variation of species characteristics; and investigate and interpret related technologies
• compare sexual and asexual reproduction, in terms of the advantages and disadvantages
• distinguish between, and identify examples of, natural and artificial selection
• describe, in simple terms, some of the newly emerging technologies for recombining genetic material; and identify questions and issues related to their application

Skill Outcomes
Initiating and Planning
Students will:
Ask questions about the relationships between and among observable variables, and plan investigations to address those questions
• state a prediction and a hypothesis based on background information or an observed pattern of events

Performing and Recording
Students will:
Conduct investigations into the relationships between and among observations, and gather and record qualitative and quantitative data
• observe and record data, and prepare simple line drawings
• estimate measurements

Analyzing and Interpreting
Students will:
Analyze qualitative and quantitative data, and develop and assess possible explanations
• identify strengths and weaknesses of different ways of displaying data
• interpret patterns and trends in data, and infer and explain relationships among the variables
• identify new questions and problems that arise from what was learned

Communication and Teamwork
Students will:
Work collaboratively on problems; and use appropriate language and formats to communicate ideas, procedures and results
• communicate questions, ideas, intentions, plans and results, using lists, notes in point form, sentences, data tables, graphs, drawings, oral language and other means

Math Division 3 Gr. 7-9, Statistics and Probability (Data Analysis)
Students will:
· collect, display and analyze data to make predictions about a population.

Agriculture Concepts:
Diversity of agriculture
Economic importance of agriculture
Importance of soil and water

Cognitive Level:
Comprehension

Materials Required:
- cooking, eating and drinking utensils
- hammer
- ice pick or suitable substitute
- fine mesh strainer
- mortar and pestle
- grater
- 1 package of tapioca
- 3 coconuts
- other ingredients listed in Recipes 1-5

Time Required:
Two 40 minute periods

Background — For the Teacher

The Brazilian Diet

Brazilian diets are extremely varied and reflect the diverse cultures which make up the population of the country. However, a growing middle class, exposed to advertising and strong American influences, is becoming increasingly accustomed to preprocessed and packaged food, "fast foods," and international cuisine. Nevertheless, most of the population enjoy native Brazilian foods at some time during the week. For many, locally produced foods are all they can obtain or afford. All too often in Brazil, the real currency is food of one kind or another.

Cultural Influences

Brazil was originally colonized by the Portuguese. As a result, much of the Brazilian tradition includes the Portuguese taste for fish and seafood which were easily obtained and could be dried for preservation. In present day Brazil, the amount and type of fish or meat in the diet is determined by income, location, and social class.

Seafood and beef were often combined with locally grown manioc, corn, sweet potatoes, bananas, or peanuts. These crops are native to Brazil and were first gathered or cultivated by the Indians. The common present day staples are rice, black beans, and manioc meal.

An African flavor is apparent in Bahian food, which is cooked with special spices and oils. Bahia, a state on the Atlantic coast, is located in what was once Brazil's plantation region. Beginning in the 16th century, the Portuguese imported hundreds of thousands of black slaves from Africa to work the plantations. These slaves and their descendants toiled for their masters until slavery was abolished in 1888.

Later immigrants brought eating customs from many cultures, but the early arrivals determined the character of the traditional Brazilian menu.

Food Preparation in Brazil

In Brazil, the majority of the population buys produce daily as required. Imagine how you would preserve food in your own homes without a refrigerator and without expensive canned goods.

Through the elaborate processes of straining and grinding cassava root for manioc meal, and of extracting and preparing coconut milk, we can appreciate the effort that is required in the preparation of foods from fresh agricultural products. It is no surprise that the modern Brazilian will purchase manioc flour or freshly ground coconut and milk from a market vendor or a modern supermarket. Food service industries in all cultures begin through the desire for these services among people who can afford them.

Manioc root is a staple in much of rural Brazil and many other tropical Third World countries. The advantages of this starchy tuberous root are that it stores well and grows even in poor soil. However, it requires considerable preparation before it can be eaten, and it is bland and poor in nutritional value.

There are two major types of manioc. The first is a starchy and rather tasteless type which must be boiled for several hours before it is soft enough to eat. This type is also known as yuca or sweet manioc.

The second type is the bitter cassava root. Careful preparation is required since this root contains a deadly poison called hydrocyanic acid. Determined Amazonian Indians developed clever methods to remove the poison. These methods are still used in a mechanized form today. Pulverized cassava root is enclosed in a basket. Weights are fastened in such a way as to apply pressure to the contents so that the liquid is forced out. This liquid is poisonous unless boiled, after which, it may be used as a sauce.

Cassava is used to make a flour called farinha, which is found in a variety of baked foods. Farinha is also kept in a shaker on the table and added to moist foods as a thickener or filler.

In Canada, farinha occurs as tapioca which can be obtained from the shelves of the local grocery. Tapioca is made by forcing moist farinha through a mesh to produce round pellets. Regrinding tapioca or manioc meal with a mortar will demonstrate the process by which farinha is made and will also produce farinha for table use.

The following recipes will provide the class with a range of different taste experiences! The main dish is a spicy seafood which may be eaten with either of the Recipe 3 or Recipe 4 dishes. Coconuts are used to provide an experience in preparing unprocessed foods.

Procedure

Introduction

1. Briefly describe food in Brazil.
2. Divide the class into three groups.
3. Ensure that each group has a coconut, a supply of tapioca and a mortar and pestle.

The Activity - Day 1

4. Each group of students should:
   - grind their tapioca into flour using the mortar and pestle.
   - prepare grated coconut according to Recipe 1.
   - prepare coconut milk according to Recipe 2.
   - set aside the grated coconut and coconut milk for the next day's cooking.

The Activity - Day 2

5. On the second day, assign one of Recipes 3, 4, and 5 to each of the groups.
6. When all the dishes are cooked, encourage students to taste them and rate their flavor on the chart contained at the end of this lesson plan.
7. Ask the students which dishes would be popular in their families and how often any of them could be served.

For Discussion

1. How would your daily life change if someone in your family had to grind grain and bake bread every day (or for every meal)?
2. Who would do this work in your family? How would this be decided?

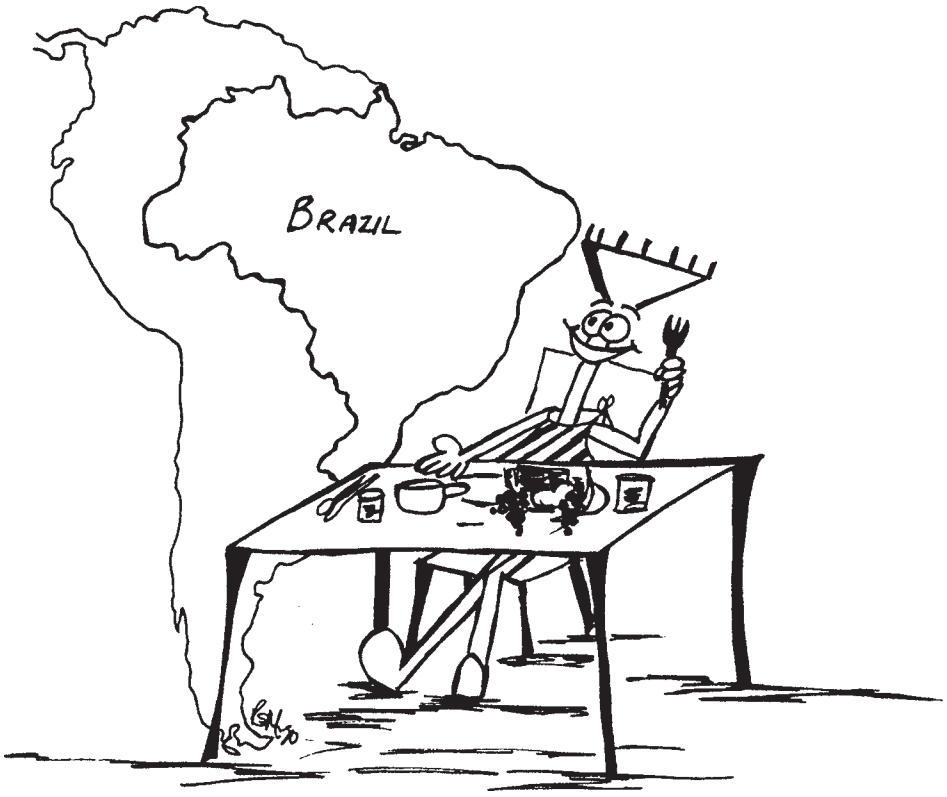
Related Activities

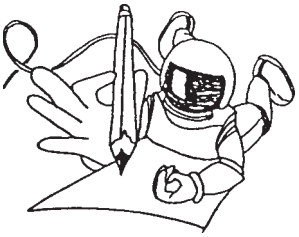
1. Have the students investigate what native Alberta plants might provide the basis for a powdered or ground starch food.
2. Have students determine ways that some starch yielding, native Alberta plant could be gathered and processed into a flour substitute.

References

All recipes taken from:

Leonard, Jonathan. Latin American Cooking. Time-Life Books. 1971.





RECIPE 1

Coco Rallado

Freshly Ground Coconut

Coconuts are one of the most important crops of the tropics. They likely originated in Indo-Malaya, but they have since spread throughout the tropical world as a result of ocean currents carrying the floating nuts to distant places. In Brazil, they are found along the coast, and are used in many ways. Coconuts are available in Canada with the peak season usually around February. When buying a coconut, be sure that it is full of milk and has a good hard brown shell.

NOTE: Coconuts sold in Alberta are usually dehusked and are sometimes dried-out. Thus, they may not contain the "milk" and soft "meat" found in fresh coconuts.

Recipe: to make about 6 cups

2 fresh coconuts (2 pounds [1 kg] each)

Procedure:

To remove the milk, puncture two of the three eyes at end of the coconut with an ice pick and drain the contents into a measuring cup.

The shell is much easier to separate from the meat if the coconut is first heated in an oven at 400°F. for 15 minutes. Then, while the shell is still hot, strike the coconut firmly with a hammer until the shell falls away. You will then be able to remove the inner skin with a potato peeler.

Next, cut the coconut meat into small pieces for grating with a hand grater or electric blender. Stir the coconut milk into the grated mixture.

RECIPE 2

Leche do Coc

Coconut Milk

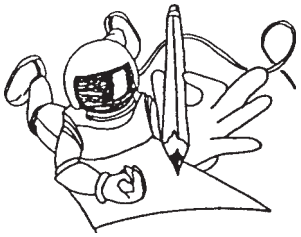
Recipe: to make about 2 cups

2 cups [500 ml] fresh milk (or water)
freshly grated coconut (from Recipe 1)

Procedure:

Heat milk or water without bringing to a boil. Place the finely grated coconut from Recipe 1 in a fine strainer. Pour the hot milk over the coconut and allow to drain undisturbed into a mixing bowl for 10 minutes. Press the remaining coconut with a spoon to remove all of the liquid before discarding the coconut. Store refrigerated.

Student Task Sheet Two



Arroz Brazieiro

RECIPE 3

Rice with Tomato Sauce and Onion

1/4 cup [50 ml] olive oil
1 large cooking onion
3 cups [750 ml] long grain rice
3 cups [750 ml] chicken stock
3 cups [750 ml] water
1 tsp. [5 ml] salt
2 whole, skinned, chopped, unseeded tomatoes

Procedure:

Heat oil for 30 seconds in a 3 quart saucepan over medium heat. Add onion and cook until transparent. Pour in rice and stir until all grains are covered in oil. Do not brown rice. Add stock, water, tomatoes. Reduce heat to low and simmer for 20 minutes or until all water is absorbed by the rice. Keep warm in oven until required.

Pirao de Arroz com Leite do Coco

RECIPE 4

Rice and Coconut-Milk Pudding

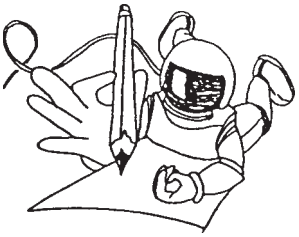
Recipe: to make 6 servings

4 cups [1 litre] coconut milk
(from Recipe 2)
3/4 cup [200 ml] rice flour
1 tsp. [5 ml] salt

Procedure:

Scald 3 cups coconut milk in a saucepan. Mix the remaining cup of milk with the rice flour and salt in a small bowl. Reduce the heat. Add the flour and water mixture and stir until the mixture thickens slightly. Pour into lightly buttered custard molds (or a cupcake tray). Chill until firm.

To remove the custard, heat the pan in hot water for a few seconds and run a small knife around the inside of the mold.



RECIPE 5

Vatapa

Fish and Shrimp in Ginger-Flavored Peanut Sauce

Recipe: makes 6 to 8 servings

50 ml	oil	1/4 cup
1 Kg	seabass fillets*, cut in 5 cm (2 inch) pieces	2 pounds
500 g	halibut fillets*, cut in 5 cm (2 inch) pieces	1 pound
500 g	raw shrimp, shelled and de-veined	1 pound
125 ml	finely chopped onion	1/4 cup
2	medium tomatoes, peeled, seeded and chopped	2
1	canned hot pepper drained, seeded and finely chopped	1
1	coconut, freshly grated OR 625 ml (1 1/2 cups) flaked coconut	1
625 ml	water or milk	1 1/2 cups
50 ml	crushed, dry roasted peanuts	1/4 cup
50 ml	ground canned shrimp	1/4 cup
15 ml	finely chopped fresh coriander OR 5 ml (1 teaspoon) ground	1 tablespoon
15 ml	finely grated fresh ginger OR 5 ml (1 teaspoon) ground	1 tablespoon
5 ml	salt	1 teaspoon
	freshly ground pepper	
15 ml	rice flour	1 tablespoon
25 ml	cold water	2 tablespoons
1 ml	paprika (optional)	1/4 teaspoon

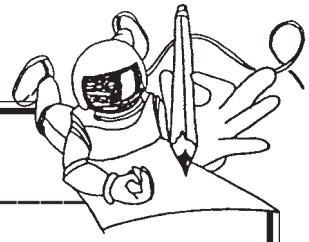
Procedure:

Heat oil in large fry pan. Arrange fillets and shrimp in single layer and cook over medium heat, 3 to 4 minutes per side, until lightly browned. Transfer to plate. Repeat, until all seafood is cooked. Set aside.

Add onions to remaining oil and saute until onion is transparent. Add tomatoes and hot pepper. Reduce heat and cook covered 10 minutes. Add coconut, water or milk, peanuts, canned shrimp, coriander, ginger, and salt. Ground pepper to taste. Bring to boil, reduce heat and simmer, covered 15 minutes. Combine rice flour and water and add to mixture. Stir and cook until smooth and thick.

Strain the sauce through a fine sieve into a large bowl. Force all liquid from contents by pressing down hard with the back of a spoon before discarding contents. Return strained sauce to pan. Add paprika if desired. Stir and cook over moderate heat until sauce coats a metal spoon (about 3 minutes). Add the fish and shrimp and simmer 2 to 3 minutes until heated through. Transfer to large heated serving platter and serve immediately. (* substitute any combination of firm white fish.)

Student Task Sheet Four

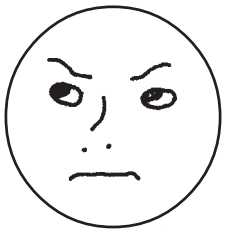


PRODUCT _____ **DATE** _____

In the order in which they are presented, taste each sample and mark the number of the "face" which best describes your feeling about each of the characteristics listed.

SAMPLE NUMBER	COLORS	FLAVOR	TEXTURE	WHICH CHARACTERISTIC WOULD YOU MOST LIKE TO SEE IMPROVED

1.



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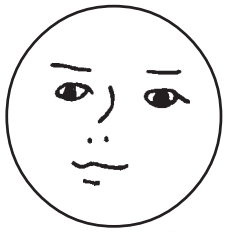
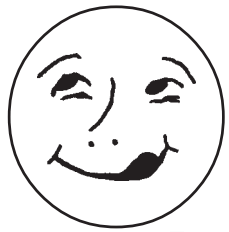


3.

4.



5.