Cooking with Native Aztec Foods I: Tortillas

Allergy alert!!!—Plan ahead if you have students with allergies.

Time Frame: 1 session 45 minutes

Materials:
- Large griddle
- Two skillets
- Masa
- Mixing bowls
- Oil
- Cinnamon
- Sugar
- Plastic wrap and wax paper
- Beans and pot to cook them in if you want to serve them with the tortillas

Learning Standards:
*Life Science*
- Identify the ways in which an organism's habitat provides for its basic needs (plants require air, water, nutrients, and light; animals require food, water, air, and shelter).

Skills of Inquiry:
- Ask questions about objects, organisms, and events in the environment.
- Name and use simple equipment and tools (e.g., rulers, meter sticks, thermometers, hand lenses, and balances) to gather data and extend the senses.
Student will be able to:

- Identify some of the basic ingredients the Aztecs used in their cooking and recognize how these are similar/different from the ingredients we use today.
- Measure out the correct amount of ingredients when cooking.

**Vocabulary:** Vitamins, Maize, indigenous

**Anticipatory set:**
The dough for the tortillas must sit for 20 to 30 minutes so you may want to immediately make the dough at the start of class and then gather back into a group to talk about Aztec foods.
Explain that corn or maize was a crucial part of the Aztec diet. Corn tortillas were made from masa harina. Masa harina is made from soaking maize in a mixture of lime and water (note that this is not the lime that grows on trees, this lime is a poisonous chemical). Show the students a bit of lime but don't let them come in contact with it because it is poisonous. The lime breaks down the maize and allows the nutrient niacin (vitamin B) to be available to our bodies. After the maize has soaked for a while it is washed off and then crushed into masa, which is used to make tortillas.

**Activity:**

1. You can buy premade masa from the store; have the children make tortillas using this.
2. The students should mix 2 cups of masa and 1 ¼ cups how water in a bowl. After they mix this they should cover the bowl with plastic wrap and let sit for 20 to 30 minutes.
3. While you are waiting for the dough you can gather back in a group and talk about maize and masa.
4. At each table the children should attempt crushing up maize so they see how the Aztecs made the masa.
5. When the dough is ready you can begin to cook the tortillas. Use the attached directions on how to cook tortillas from "Joy of Cooking".

6. You may also want to serve beans with tortillas and you can just have those cooking during class to be ready to be eaten with tortillas.

7. You can also make buenolos. For these you simply fry the tortilla in oil and put cinnamon and sugar on top.

Closure: Emphasize the importance of maize in Aztec diet.

Assessment: Participation in activities and class discussion.
Cooking with Native Aztec Foods II: Salsa and Guacamole

Allergy Alert!!!—Plan ahead if you have students with allergies.

**Time Frame:** 1 session 45 minutes

**Materials:**
- Lime juice
- Onions or scallions
- Cilantro or parsley
- Olive oil
- Garlic
- Salt
- Tomatoes
- Avocados
- Paper plates
- Plastic knives
- Teaspoon
- Mixing bowls
- Tortilla chips

**Learning Standards:**

*Life Science*
- Identify the ways in which an organism's habitat provides for its basic needs (plants require air, water, nutrients, and light; animals require food, water, air, and shelter).

**Skills of Inquiry:**
- Ask questions about objects, organisms, and events in the environment.
- Name and use simple equipment and tools (e.g., rulers, meter sticks, thermometers, hand lenses, and balances) to gather data and extend the senses.
Student will be able to:
- Identify some of the basic ingredients the Aztecs used in their cooking and recognize how these are similar to the ingredients we use today.
- Measure out the correct amount of ingredients when cooking.

Vocabulary: indigenous

Anticipatory set:
Talk about what kind of fruits and vegetables were available to the ancient Aztecs (avocados and tomatoes). The Aztecs used these materials to create distinct flavors and foods.

Activity:

1. Break class into groups of four.
2. At each table there should be supplies to make either guacamole or salsa. Two groups should make salsa while the other two groups make guacamole. (Recipes are included below)
3. The students should mix and stir the ingredients to create their dish.
4. After the guacamole and salsa has been made the student should gather back as a class.
5. Each group should get up and explain what went into their dish.
6. Bring out some chips and eat the fresh salsa and guacamole!!!

Closure: Emphasize the similarities between Aztec food and some of our modern food. We use corn in many things that we make (high fructose corn syrup).

Assessment: Participation in activities and class discussion.
**Salsa:** Mix the following ingredients in bowl: (the following amounts make 2 cups of salsa)
1. ½ small white or red onion or 8 slender scallions, finely chopped, rinsed and drained.
2. 2 tablespoons fresh lime juice
3. 2 large ripe tomatoes finely diced
4. ¼ to ½ cup chopped cilantro
5. ¼ teaspoon salt

**Guacamole:** Mix and mash the following ingredients in bowl: (the following amounts make 2 cups of guacamole)
1. ¼ cup fresh lime juice
2. ¼ cup finely chopped onion or thinly sliced scallions
3. ¼ cup finely chopped cilantro or parsley
4. 1 tablespoon finely minced garlic
5. ¼ teaspoon salt

save the avocado pits, they can be used for sprouting
Biodiversity in Mexico

Time Frame: 1 session 45 minutes

Materials:
- Paint
- Paintbrushes
- Paper
- Pictures of orchids and live orchids
- Packet on biodiversity in Mexico

Learning Standards:
Life Science
- Recognize that animals (including humans) and plants are living things that grow, reproduce, and need food, air, and water.

Skills of Inquiry:
- Ask questions about objects, organisms, and events in the environment.

Student will be able to:
- Understand that Mexico is an incredibly diverse country.
- Explain what mega diversity means.

Vocabulary: epiphytes, mega diverse, habitat, ecosystem

Anticipatory set:
Talk about the diversity of Mexico, Mexico is one of 17 countries in the world that is considered a megadiverse country. Megadiverse countries have a huge variety of animals. They also have many different types of habitats and ecosystems. A habitat is an area that a particular type of animal, plant or insect inhabits. Can you name some habitats? Present the information in the packet that goes along with this lesson. Talk about epiphytes and how they
are plants that grow on other plants. Ask the students if they can name any epiphytes. Inform the students that orchids are epiphytes. Show the students pictures of orchids.

Activity:

1. Have the students sit down at tables. At each table there should be materials for painting.
2. The students should use pictures and the live orchids as models to paint from.

Closure: Go over the importance of conserving these biodiverse countries.

Assessment: Participation in activities, accuracy of painting and class discussion.
Volcanoes

Time Frame: 1 session 45 minutes

Materials:
- Baking soda
- Vinegar
- Tape
- Paper
- Newspaper
- Clay
- Aluminum foil
- Metal cooking trays in which to construct the volcanoes.

Learning Standards:
Earth Science
- Recognize that water, rocks, soil, and living organisms are found on the earth's surface.

Skills of Inquiry:
- Ask questions about objects, organisms, and events in the environment.
- Tell about why and what would happen if?
- Discuss observations with others.

Student will be able to:
- Work as a group to build a volcano.

Vocabulary: lava, chemical reaction, carbon dioxide

Anticipatory set:
First talk about the chemical reaction that happens when baking soda and vinegar are mixed. Carbon dioxide is released when the two substances are mixed and this creates the bubbles you see as the "lava" flows out of the
volcano. Tell the students that they must work as a group to build a volcano. They can use any of the materials at their table and must create the volcano inside the pan. One of the most important steps to emphasize is that students must build a platform with a Dixie cup on top, which will serve as the mixing cup of the chemical reaction. This will be the mouth of the volcano and the students should build the platform and then the volcano around it.

**Activity:**

1. At each table there should be all essential materials for building the volcano. These materials can include: clay, paper, newspaper, tin foil, Dixie cup, cardboard, and tape.
2. Allow the students to build their volcano make sure that the students are working as a group.
3. Once the students have completed construction have the whole class walk around the room and examine how everyone else built their volcanoes.
4. Gather children around each table and mix the vinegar and baking soda in volcano.

**Closure:** Go over how the chemical reaction worked and talk about what strategies worked for constructing the volcanoes.

**Assessment:** Participation in activities and class discussion.

*Note that if you are planning to use the volcanoes for the “train tracks” lesson then you should use material that won’t be destroyed by baking soda and vinegar. Tin foil would probably work best for this.*
Making Train Tracks

Time Frame: 1 session 45 minutes

Materials:
- Marbles
- Tubing
- Four mountains per group (you can use the volcanoes built previously or use other materials)
- Petri dish or some type of bowl for marble to land in
- Building materials (tape, cardboard, paper towel tubes, straws, etc....)

Learning Standards:
Physical Science
- Describe the various ways that objects can move, such as in a straight line, zigzag, back-and-forth, round-and-round, fast, and slow.
- Demonstrate that the way to change the motion of an object is to apply a force (give it a push or a pull). The greater the force, the greater the change in the motion of the object.

Skills of Inquiry:
- Ask questions about objects, organisms, and events in the environment.
- Tell about why and what would happen if?
- Name and use simple equipment and tools (e.g., rulers, meter sticks, thermometers, hand lenses, and balances) to gather data and extend the senses.
- Record observations and data with pictures, numbers, or written statements.
- Discuss observations with others.

Student will be able to:
- Work as a group to build a train track that will take their “train” (marble) through the mountain obstacles.
Vocabulary: transportation

Anticipatory set:
Talk about how railroads were very important in the late 1800's and early 1900's. They were the fastest way to move stuff from one side of the US to the other. However the railroads were very hard to build because many times there were obstacles in the way, like rivers and mountain ranges. Today the students will be building a rail system through their own mountain range.

Activity:

1. There should be a mountain range—consisting of four mountains—at each table. One end of the tubing should be secured to the wall and the students will have to navigate the tube around the mountains to get the marble in a Petri dish at the end of the table.
2. As a group the students should begin construction. They can use any of the materials at their table. They should refer to the rubric when constructing.
3. Once the group is satisfied with their train tracks, a teacher should come around and make sure that the marble gets from start to finish. They should be graded according to the attached rubric.
4. If the students finish with extra time left they should construct a map of their train tracks. They can also measure the height of the mountains and record that on their maps.

Closure: As a class talk about some of the positive things about working as a group. How did it help you accomplish your goal? What are some ways that you could work even better in a group?

Assessment: Participation in activities and class discussion.
Rubric

1. The train must be able to make it completely down the track three times in a row.
   ____________/3

2. The train must go over at least one mountain.
   ____________/3

3. There must be at least three turns in the train track.
   ____________/3

4. You must use at least three different building materials when constructing the train tracks.
   ____________/3

Total Points ____________/12
List of suggested books for Mexico Unit:

  - Gives some example of different habitats, this could be a good read for the biodiversity lesson.
  - Goes over many of the animals that live in the forest. Could be a good read before the biodiversity lesson.
- **Volcanoes** by Seymour Simon ISBN 0-688-14029-7
- **Mountains and Volcanoes** by Eileen Curran
- **Volcanoes** by Monica Halpern ISBN 07922-8511-5
- **Magical School Bus: Inside the earth** by Joanna Cole ISBN 0-590-40760-0
- **National geographic kids: volcanoes** by Anne Schreiber ISBN 0-545-16028-6
- **In my Family en mi familia** by Carmen Lomas Garza
- **Volcano** by Patricia Lauber
- **Corn is Maize: the gift of the Indians** by Aliki ISBN 0-06-445026-0
- **Magda's Tortilla** by Becky Chavarria-chairez