

Mixed Vegetables Lesson



Goals

Students will...

- Increase their familiarity with vegetable combinations.
- Eat vegetable combinations when offered them.
- Increase their awareness of the environmental benefits of composting.
- Increase their understanding of nutrition.

Objectives

Students will be able to...

- a. List at least 3 plant parts found in the vegetables on the pizza
- b. Explain the origins of the vegetables on the veggie pizza and find them on a world map
- c. Identify the growing seasons for the various vegetables
- d. Write directions for making a no-bake veggie pizza
- e. Write a paragraph about pizza as a healthy food
- f. Create a lunch menu in which no-bake veggie pizza is one of the foods
- g. Participate in composting activities

Lesson Activities

- Review points about safety, sanitation, and cooperation
- Introduce mixed vegetables
- Background information on vegetable combinations
- Lessons from the Farm
- Prepare no-bake veggie pizza
- (Form groups of 4 to 6 students)
- Do compost activity while food is cooking
- (See compost lesson for mini-lesson)
- Eat
- Wrap-up
- Distribute copies of recipes and challenge sheets to students
- Clean up

Other Mixed Vegetable Activities

Nutrition science lesson: Planting an herb garden

Global and regional mapping

Mixed vegetable fact sheet, Writing ideas, Additional recipes

Background Information on Mixed Vegetables



Did you know that...?

Carrots are roots

The carrot is a root vegetable and a member of the parsley family of vegetables that originated in Afghanistan. The Greeks and Romans also knew about them, although Europeans did not use carrots widely until the Middle Ages. Carrots started as a common weed in cultivated areas such as vegetable gardens and vineyards because it preferred loose soil for its long taproot. As people migrated into cooler regions, carrot “weed” seeds contaminated other crop seeds. It was able to do better than other vegetable crops because it was more tolerant of the cooler climate. The first kinds of carrots were woody and colored red, purple or black. They were used as medicinal herbs. In the 17th century in Holland, the familiar orange type, rich in beta-carotene, first grew.

Carrots take two years to complete their life cycle, and are thus called a biennial vegetable. The roots are harvested and eaten the first year, but if left in the ground, a large stem will grow the second year. This eventually bears white or pinkish flowers that produce spiny seeds that cling to animals. This is how seeds are dispersed to new locations. The best quality carrots are grown in cool to moderate temperatures. They develop a poor color and low sugar content when they are grown in temperatures above 70°F.

Tomatoes are fruit

Tomatoes are the fruits of a vine-like herb that is a member of the nightshade family. Once thought to be poisonous, tomatoes have become one of the most widely grown and commercially important crops. The tomato originated in South America (Ecuador, Peru, and Bolivia) and was consumed by pre-Incan civilizations. Spanish explorers conquered the region and brought tomato seeds with them to Europe and North America. Nonetheless, tomatoes did not become popular in either area until the 19th century. Now, tomatoes are primarily grown in Florida (during the winter months) and are picked in the late green stage or pink stage. They are ripened on their way to other markets. In the north, tomatoes are grown in greenhouses during the winter.

Background Information continued



Peppers are fruit

The bell pepper is a fruit that is also a member of the nightshade family. It is related to the eggplant, potato, and tomato. Bell peppers are native to Central America and southern Mexico and grew long before the arrival of European explorers. All peppers, if left to ripen on the vine, will turn color to shades of yellow, brown, purple or red. Green peppers are simply picked before they are ripe!

Most peppers belong to one of two groups: the *Grossum* group (mild-flavored, sweet peppers), or the *Longum* group (pungent, hot peppers). Bell peppers are members of the *Grossum* group. Paprika, on the other hand, is a spice obtained from a mild variety of a hot pepper in the *Longum* group. Tabasco sauce is made from a small, hot pepper. A crystalline substance called capsaicin causes the pungency of hot peppers.

Broccoli and cauliflower are flowers

Broccoli and cauliflower are both flower buds with a common ancestor - wild cabbage. In the 19th century, both plants grew in a variety of colors including brown, red, cream, purple, green, and white. They are native to Europe and were especially popular in ancient Rome. These plants were not widespread in the United States until Italian immigrants migrated at the turn of the century. It was not until the 1920s that they became commercial crops. Just 30 years later, 150 million tons of broccoli and cauliflower were being produced in the United States. Now in the United States, over 90% of cauliflower and 80% of broccoli are grown in California. About half of the crop is blanched and frozen to make them more available to consumers.

Both broccoli and cauliflower are cool weather crops and grow best in the spring and fall. They thrive in temperatures from 50° to 70°F and tolerate light frost without damage. Both are excellent sources of vitamin C and beta-carotene and are fairly good sources of dietary fiber.

Lessons from the Farm - Mixed Vegetables



Spring is the beginning of the year at most vegetable farms. In the spring, farmers are busy sprouting seeds and planting them in their vegetable fields. Almost all of the planting for the entire year needs to be done in the spring. This takes a lot of hard work, but it is exciting because farmers can start imagining the vegetables that their seeds will produce when they have grown!

Summer is the busiest time of year. This is mostly because there is so much weeding to do! In the summer, farmers usually start working at 5:00 in the morning every day. Their days are spent weeding, irrigating (if it has not rained enough) and harvesting summer crops like lettuce, peas, tomatoes, peppers, corn and cucumbers. All of these beautiful, fresh vegetables make for delicious summer lunches!

Fall is the time of year when farmers harvest the heaviest vegetables they have grown, such as winter squash, potatoes and carrots. Many of these vegetables grow underground, so they have to dig them up with pitchforks. This is very hard work! Once they have dug them up or picked them, they pack them away and keep them cool. This helps them last through the winter.

Winter is a time to plan for the coming year. Farmers spend lots of time thinking about the last growing season and talking about what went well and what they would like to do differently the next year. They might even take a vacation if they can!

As you can see, the kind of work farmers do changes with every season. This is one of the most wonderful parts of farming. Someday, maybe some of you will have the opportunity to work on a farm for at least a little while. However, in the meantime, you can enjoy cooking and eating vegetables and grains that were grown on farms.

Materials and Preparation

Food needed for no-bake veggie pizza (for 4 groups)*

3 packages light cream cheese
2 containers light sour cream
4 1 oz. packs dry Italian dressing mix
4 bunches broccoli (4 large stems)
1 head cauliflower
4 green bell peppers
4 medium carrots
4 medium tomatoes
2 10 oz. blocks low-fat cheddar cheese
4 12-inch Boboli pizza crusts
Water for students



Materials needed (for 4 groups)

4 large spoons
4 mixing bowls
4 sets dry measuring cups
4 sets measuring spoons
4 spatulas
4 paring knives
8 cutting boards
4 large cookie sheets
16 small bowls for vegetables
4 cheese graters
4 vegetable peelers
4 pizza cutters and servers
Cleaning towels, napkins
Plastic silverware and cups
Paper plates
Saran wrap, wax paper
Compost bucket
Copy of recipes for each student
Copy of challenge sheet for each student
Copy of mixed vegetables fact sheet for each student
Copy of writing sheet for each student

Materials and Preparation continued



Each station should have the following:

Food

6 oz. low fat cream cheese (3/4 package)
4 oz. light sour cream (1/2 cup)
1/2 package dry Good Seasons Italian dressing mix
3/4 cup combined small broccoli and cauliflower pieces
1 diced medium green bell pepper
1 diced medium raw carrot
1 diced medium raw tomato
1/4 cup low fat cheddar cheese, shredded
1 12-inch Boboli pizza crust
Water for students

Materials

2 cutting boards
1 paring knife
4 small bowls
1 set dry measuring cups
1 set measuring spoons
1 spatula
1 medium mixing bowl
1 cheese grater
1 vegetable peeler
1 spoon
1 large cookie sheet
1 pizza cutter
1 pizza server
Paper plates
Plastic silverware
Saran wrap
Cleaning towel
Copy of recipes

Use Maine vegetables and other products from Maine if possible.

Classroom Recipe for No-Bake Veggie Pizza



Ingredients:

6 oz. (3/4 package) cream cheese
4 oz. light sour cream
1/2 package dry Good Seasons Italian dressing mix
3/4 cup broccoli and cauliflower pieces
1 diced medium green bell pepper
1 diced medium raw carrot
1 diced medium raw tomato
1/4 cup low fat cheddar cheese, shredded
1 12-inch thin or thick Boboli pizza crust

Use Maine ingredients if possible.

Student Cooking Activities

Note: This recipe requires the use of knives.

Put cream cheese in a bowl and mix to soften.
Add sour cream and salad dressing; stir until smooth.
Spread mixture on crust.
Chop vegetables and distribute them on the crust.
Sprinkle with cheddar cheese.
Cut and enjoy!

Yield: 8 servings

Nutrition Science Lesson - Mixed Vegetables

Planting an Herb Garden

This activity allows students to see the growth of a plant from seed to flower. Indoor gardening requires sunlight, water, seeds, a planting medium, and of course, curiosity. For best results, select a variety of herb seedlings, as some seeds are more difficult to germinate indoors.

Select window boxes or plastic seedling trays that will fit in a space that has direct sunlight. Fill the trays with soilless seed starting mix (this type of mix is sterile, will retain water better than conventional soil, and will maintain proper pH of 6.0). Follow the instructions on the individual seed packets for planting and spacing the proper number of seeds. A constant soil temperature of 73°F will allow for the best growth. You can place a thermometer in the tray to monitor the temperature.

The water requirements for seedlings decrease once the sprouting process takes place. The two methods for watering are *bottom soaking* and *misting*. Bottom soaking is good for the initial sowing of the seed to make sure there is sufficient water for penetrating the seed coat. Misting can be used as a supplemental watering when the soil surface dries out. If the soil temperature and lighting conditions are optimal, only one or two good waterings are needed for most seeds to sprout.

You may want to cover the trays with plastic sheets to allow sunlight in and prevent evaporation. It is important not to overwater the seedlings. Seed suggestions are: basil, parsley, oregano, thyme, rosemary or mint.

Note: This activity may introduce terms that students are not familiar with, so you may want to define and discuss them:

Germination: The beginning of growth of a mature, generally dormant, seed. Sprouting starts when the seed coat splits.

Dormant: Growth and development are temporarily suspended; seeds will not germinate until mature, and until external conditions are optimal.

pH: Scale representing acidity of a solution: 7=neutral, >7=alkaline, <7=acidic.

Global and Regional Mapping

Mixed Vegetables



World Map

Discuss with students the origins of the vegetables used in the pizza recipe. Have them find them on the map.

- Broccoli ----- Italy (15°, 45°)
- Cauliflower ----- Cyprus (35°, 35°)
- Tomatoes ----- South America (60°, 10°)
Ecuador, Peru and Bolivia
- Green Peppers ---- Central America and southern Mexico (15°, 90°)
- Carrots ----- Afghanistan (65°, 35°)

Local Harvest Calendar

Have students determine where they think the above vegetables are typically grown in Maine, as well as when they are harvested.

<u>Crop</u>	<u>Region of Production</u>	<u>Harvest</u>
Broccoli	Aroostook County	June
Cauliflower	Southern Maine	July
Tomatoes	Southern Maine	Aug-Sept
Bell Peppers	Southern Maine	Aug-Sept
Carrots	Southern Maine	Aug-Oct

Discuss with students methods of storing vegetables through the winter months (kept in a cool, dry area, and frozen or canned).

Date _____ Name _____

Mixed Vegetable Fact Sheet



1. Name at least three plant parts found in the vegetables on the pizza.
2. Where did tomatoes originally come from?
3. In what season do carrots grow best?
4. Where did carrots originally come from?
5. If you could put anything you like on the pizza, what would you choose?
6. If you could put only vegetables on your pizza, what would you choose?

Writing Ideas - Mixed Vegetables



1. What did you like or dislike about this lesson?
2. Write directions for making a no-bake pizza with 3 healthy toppings.
2. Write a paragraph explaining why pizza can be considered a very healthy food. Use at least four facts you have learned.
3. Create a healthy lunch menu with no-bake veggie pizza as one of the foods.
4. Make the pizza recipe for your family or friends. What did they think? Did they like it? Were they surprised?
5. Come up with your own ideas...

Additional Mixed Vegetable Recipes

Dressed-Up Corn

Ingredients:

- 1 can corn (14 oz.) or 1 bag frozen corn
- 1 green pepper
- 1 tomato
- 1 onion
- 1 carrot
- 1 tsp. oil
- Salt and pepper to taste (optional)



Note: This recipe requires the use of a stove.

Student Cooking Activities

Chop pepper, onion, and tomato into small pieces.

Grate carrot with large side of cheese grater.

Drain corn (if canned).

Heat oil in pan over medium heat for a few seconds.

Add onion and sauté for about 5 minutes.

Add pepper, carrot, and tomato and sauté 3 minutes.

Add corn; mix well, and sauté 5 minutes.

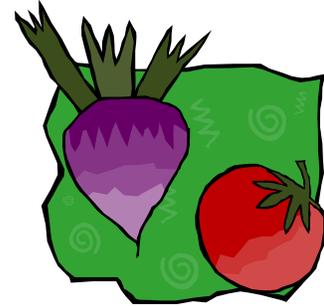
Season with salt and pepper if desired.

Yield: 6 servings

Herbed Vegetable Medley

Ingredients:

2 cups water
1 tsp. chicken bouillon
1/2 tsp. dried whole thyme
1/2 tsp. dried whole dill weed
1 clove minced garlic
2 medium carrots, scraped and cut into julienne strips
3 small zucchini, cut into julienne strips
3 small yellow squash, cut into julienne strips
1 medium sweet red pepper, cut into julienne strips
1/3 cup chopped green onion



Note: This recipe requires the use of a stove.

Use Maine vegetables whenever possible.

Student Cooking Activities

Combine first 5 ingredients in skillet; bring to a boil.
Add carrot; reduce heat and simmer 1 minute, stirring occasionally.
Add zucchini, yellow squash, pepper, and green onion; simmer 2-3 minutes or until vegetables are crisp-tender, tossing frequently.
Drain well; transfer to serving dish.
Serve and enjoy!

To julienne: Cut vegetables into 1/8 inch thick slices; stack slices and cut into 1/8 inch thick strips. Cut strips to desired length.

Yield: 8-10 servings