



# VARY YOUR **VEGGIES**



**Begin each nutrition education lesson with a short physical activity break from the card set provided by IDPH. Have fun and get active with your students!**

## Objectives

Learn the health value of broccoli.

Examine how the nutrients of broccoli are released in the body during the process of digestion.

## Supplies Needed

December

Pick a **better snack**™ & **Act** bingo card

“Veggie and Fruit Maze” handout

## Tasting Opportunities

Featured vegetable:  
Broccoli

## Background

Broccoli has been grown for over 2,000 years. Romans prized broccoli and by the 16<sup>th</sup> century it was eaten by families in France and Italy. Thomas Jefferson noted the planting of broccoli in his family garden in the late 1700’s but it didn’t become widely known until the turn of the 20<sup>th</sup> century.

Over ninety percent of the broccoli crop is grown in California. Two brothers, Stefano and Andrea D’Arrigo from Messina, Italy, arrived in the U.S. in the early 1900’s. In 1922, they started their own produce company in San Jose, California. They were the first commercial growers in the West to successfully raise and ship box loads of broccoli. Their broccoli was developed from seeds sent from Italy by their father. They created a distinctive brand name for their broccoli – “Andy Boy” – and put a photo of Stefano’s two-year-old son, Andrew, on the label. Theirs was the first fresh produce company in the U.S. to use a brand name on their advertising. (*Harvest of the Month, February 2006*)

Over 30,000 plants can grow in only one acre of land! WOW! A field may be harvested two to three times to remove all the broccoli. Ideally, broccoli should be harvested during the cooler months in order to ensure the longest storage time. It should be cut with 8 to 10 inches of stem left intact and the heads should be cooled immediately to prevent opening and discoloration. Broccoli may be packed in the field or transported to a processing facility where it is cut and packaged.

Broccoli is called the crown jewel of nutrition because it is so rich in vitamins and minerals. It has calcium and vitamins C and A. Half of a pound of broccoli has more vitamin C than two and a half pounds of oranges or 204 apples.

The word broccoli comes from the Italian “brocco” meaning arm branch. Broccoli is a member of the Cruciferae family which means it’s related to cabbage, cauliflower, and Brussels sprouts. There are two types of broccoli:

sprouting/Italian broccoli (*Brassica Oleracea Italica*) the most common, and heading broccoli (*Brassica Oleracea*) which looks like cauliflower. The broccoli we eat is the flower of the broccoli plant. Other vegetables that are flowers include cauliflower and artichokes.

### Web Site Resources

[www.idph.state.ia.us/pickabettersnack](http://www.idph.state.ia.us/pickabettersnack)  
[www.fruitsandveggiesmorematters.org](http://www.fruitsandveggiesmorematters.org)  
[www.choosemyplate.gov](http://www.choosemyplate.gov)

### Do the Activity:

Review digestion of food:

When we eat such things as bread, meat, and vegetables, they are not in a form that the body can use as nourishment. Our food and drink must be changed into smaller molecules of nutrients before they can be absorbed into the blood and carried to cells throughout the body. Digestion is the process by which food and drink are broken down into their smallest parts so that the body can use them to build and nourish cells and to provide energy.

Hold up a stalk of broccoli. Discuss what happens to broccoli when we eat it. This is called digestion. (*Review only what is appropriate for the age of your students.*)

1. Digestion begins in the mouth where the broccoli is chewed and swallowed.
2. Once the broccoli is in the stomach, it mixes with other foods and liquids that you ate with the broccoli. Digestive juices are released and mixed with the food. Your stomach is a very strong muscle!
3. The stomach slowly releases the food mixture into the intestines (like a long, soft tube) where the food is further broken down so our bodies can absorb the nutritious parts of the food such as protein, carbohydrates (starch and sugars), fats, vitamins and minerals.
4. The water, sugar, vitamins C and A, and calcium from the broccoli are absorbed in the small intestine.
5. These nutrients pass through the intestine into the blood and are carried off in the bloodstream to other parts of the body for storage or further chemical change.
6. The leftover fiber from the broccoli would go into the large intestine or colon where it would remain, usually for a day or two, until feces are expelled by a bowel movement.

Instruct student to complete the “Veggie and Fruit Maze” worksheet. Tell them that the digestion process is much like a maze that that food goes through.

**Talk It Over:**  
**2<sup>nd</sup> Grade**

How does your stomach feel when you eat lots of food at one time? Does that feeling stay with you or go away?

**3<sup>rd</sup> Grade**

There is a saying, “You are what you eat.” Does this have new meaning to you now that we have reviewed digestion? What did you learn about digestion that was new? There are many ways to eat broccoli. Broccoli is great to eat raw as a snack or in a salad or cooked as a side dish or in a casserole. Broccoli can be boiled, steamed, stir-fried, or pureed and added to soups.

**Apply:**

Pick a **better** snack™ reminds you that it is easy to eat vegetables as snacks.



**Tasting  
Opportunity**

Have the students wash their hands. Cut broccoli into bite-sized florets. Give each student a small amount of a low-fat Ranch Dressing. Taste broccoli without dipping into the dressing first, then taste with dressing. Students can then put an “X” through the bingo square of broccoli if they tasted it.

What would you do (with adult help) to broccoli to get it ready to eat as a snack?

Broccoli – **Wash. Eat. (How easy is that?)**

Broccoli – **Wash. Dip. Eat. (How easy is that?)**

Take the bingo card home and have your family try out the fun ideas on the back. How will you get a bingo this month?

**Extend the Activity**



**Art, Music  
& PE**

Invent a winter scene- in forest, in storm, etc. Use real broccoli piece glued to the paper to represent trees and bushes.

Modify the lyrics of Kermit the Frog's song "It's Good to be Green." Include all the good qualities of broccoli.

Write a Haiku (a three line poem consisting of 5-7-5 syllables) about broccoli:

Broccoli has C  
Italians brought it to us  
Grow healthy with it.



**Language Arts  
& Reading**

Research information on broccoli, write a one paragraph article and illustrate. Share with class.



**Math**

Fact: Over 90% of broccoli is grown in California. Discuss percentages. Cut apart graph paper into 10 x 10 squares. Place 90 of the squares into one pile and 2 in another.



**Science &  
Health**

What makes broccoli green? What are some things you can eat with broccoli? How many have you tried? Bring in recipes from home and see how many different ones you can collect. Share with parents.

Ask "Where does broccoli grow?" *Mainly California, but is now grown in nearly every other state, including Iowa.* Have someone who grows broccoli come in to describe how broccoli is planted, harvested, etc. Contact Master Gardeners through Extension or there are many "truck" gardens around the area.



**Social Studies**

Using scale of miles, use a map to calculate the distance from the capitol of California (Sacramento) to the capitol of Iowa (Des Moines).



# Veggie and Fruit Maze

**START  
HERE**



**FINISH**

**Parents:** MyPlate suggests that children 4 to 8 years old eat 1 to 1½ cups of fruit every day. Go easy on 100% fruit juice; choose whole fruit for more fiber and nutrients. Go to [www.choosemyplate.gov](http://www.choosemyplate.gov) for more details.