

# Plants Grow Children Curriculum

## LESSON

### Amazing Potato

#### Grade Level

2

#### Objectives

- To learn what a potato needs to germinate, live, and grow.
- To reinforce previous lessons on the life cycle of plants and the six basic parts of a plant.
- To learn how a potato grows.
- To develop an appreciation for the potato, including its history, its importance in daily nutrition, and its place in American agriculture.

#### Vocabulary

stolon potato  
bud eye  
root stem  
vegetable  
seed piece

#### Time

60 minutes.

#### Lead Time Required

1 - 5 days to prepare materials

#### Activity Materials

- Potato seed
- 6 inch pot
- Potting soil
- Activity handouts
- Potato People supplies (construction paper, google eyes, lunch sacks)
- Individual bags of potato chips - note they may be fried in peanut oil. Must check for peanut allergies. Ask if any students are allergic to peanuts

#### Demonstration Materials

- Visuals from Washington State Potato Commission (WSPC)
- CD from WSPC (Not too many classrooms have the technology to

use this, but a few do and the pictures are great)

#### Teaching Procedure

1. Find out whether there are any peanut allergies (if we do the Tim's Cascade Chips – they are cooked in peanut oil).

2. Ask teacher if she/he prefers to hand out the chips later or if she/he doesn't mind doing it at the end of the class.

3. See if there are any restrictions on the potato "tattoos" donated by WSPC (Some schools don't care, others would prefer to put the tattoo in the students cubby to take home.)

4. Give the teacher the evaluation form and ask if they could fill it out during your presentation so you can take it with you when you leave

5. Introduce yourself. Tell the class who you are. Explain briefly about the WSU Master Gardener Program and why you are in the classroom.

#### Discussion

##### 1. Topic Introduction

Today we're going to talk about the Amazing Washington Potato.

Question the class on potatoes to get them involved. Ask the class, "What do you know about potatoes?"

##### 2. Did you know?

The potato is about 80 percent water and 20 percent solids. (explain what that means)

The potato belongs to the family Solanaceae or nightshade family and is known to scientists as *Solanum tuberosum*. All the plants in this family share certain characteristics, like having similar leaves and flowers. Other members of the family are the tomato, pepper (green, chili, jalapeno, etc.), eggplant, nightshade, belladonna, petunia, and

tobacco. Some parts of these plants are very poisonous.

In 1974, an Englishman named Eric Jenkins grew 370 pounds of potatoes from one plant.

In October of 1995, the potato became the first vegetable to be grown in space.

##### 3. What's the difference between potatoes and sweet potatoes?

The sweet potato (*Ipomoea batatas*) belongs in the same family as the morning glory and **is not** a relative of the potato. The Spanish who brought sweet potatoes back from the West Indies called them by their native name batatas. When white potatoes (papas) were introduced into Spain some years later, some people thought they were related. Soon papas were renamed patatas, but both were translated into the English as potato.

##### 4. What are your favorite ways to eat potatoes?

The average American eats about 134 pounds of potatoes per year while Germans eat about twice as much. (That's like 2 second graders put together.)

An 8-ounce baked or boiled potato has only about 150 calories (some people think potatoes are fattening – but they are actually like a giant vitamin pill)

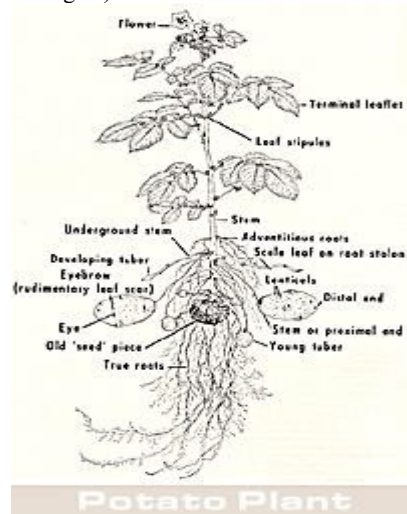
Did you know that one of our presidents (Thomas Jefferson) gets the credit for introducing 'French fries' to America when he served them at a White House dinner in 1800's.

The potato chip was invented by accident in New York – an important railroad tycoon sent his potatoes back to the chef because he said they were too thick – the Chef sliced them

paper thin and fried them in hot oil and the Potato Chip has been famous ever since.

### 5. Potatoes come in lots of colors!

Guess how many colors? They come in white, yellow, brown, purple, blue, red, and even special orange ones are grown. Some are just for making potato chips, and others are best when they're mashed. (Note: Some potatoes turn green – those shouldn't be eaten because some people get sick from them because of the alkaloids that develop in the skin and tissue of the potato when exposed to sunlight.)



### 6. The Parts of a Plant

How many students remember the six parts of a plant? Show them the diagram (see picture) and see if they can name them... roots, stems, leaves, flowers, fruits and seeds. Have them repeat it with you... it sounds like a rhyme and they can remember them.

### 7. What's a vegetable?

Hold up the vegetable poster and see if anyone knows the definition. A vegetable is any part of a plant that can be eaten, usually it is the leaves, stem or roots of a plant. Take the poster and demonstrate by asking questions about what part of the plant gets eaten when it's a carrot, cabbage, etc. and then ask them what part of the plant they are eating when they eat a potato. This is a tricky question because most people think it's a stem, but although potatoes

grow underground the part we eat are actually swollen stems (called stolons) not roots. Go over the handout that shows the parts of the potato plant.

### 8. Potato History

#### Where did the potato come from?

Use a wall map or a globe and trace the journey of the potato from South America to the United States.

**Inca Indians (Peru)** were the first to cultivate potatoes in about 200BC.

Potatoes also were an important influence on Incan culture. Potato-shaped pottery complete with eyes is commonly found at excavated sites, sometimes having tiny heads growing out of the little eyes. Incan units of time correlated to the length of time it took for a potato to cook to various consistencies. Potatoes were even used to divine the truth and predict weather.

#### In 1536 Spanish Conquistadors

conquered Peru and discovered the potato and they took them back to Europe – mostly for curiosity – but they noticed that the sailors who ate them didn't get sick with scurvy – due to their nutritional value. Families of sailors started to grow their own on the northern Coast of Spain. For a while, a lot of people in Europe were afraid to eat them because they thought they were poisonous.

**Sir Walter Raleigh** introduced potatoes to Ireland in 1589. Potatoes soon became the most important part of the Irish people's diet. They ate about 10 potatoes a day and even fed their animals with them.

**The Governor of Bermuda** sent 2 large chests of potatoes as a present to the Governor of Virginia in 1621. The first permanent potato patches in America were in New Hampshire. Washington State produces 20 percent of all U.S. potatoes.

### 9. How Potatoes Are Planted, Grow and Harvested

Seed potatoes are cut using

complicated machines that cut them into the same sizes. Then the seed pieces get a treatment to keep bacteria and fungus away.

Cut seed pieces are loaded into trucks and carried to the field for planting. Some farmers use laser sensors to keep the lines in a straight row.

Potatoes are planted in Washington starting the last week of February. Plants grow quickly and emerge from the ground in about 2 weeks.

Farmers have to be careful to:

- keep the potatoes watered while they're growing (potatoes are very thirsty)
- give the potatoes the right amount of fertilizer
- keep insects away - green peach aphid is one insect that causes a lot of problems in potatoes. Nematodes are also a problem. Nematodes are minute worms that infect plant roots and potato tubers.

Potato harvest starts in Washington around the 4th of July and some potatoes are processed immediately into French fries or chips, or packed in bags and boxes and sent to supermarkets and grocery stores.

Potato harvesters are complicated machines that must dig the potatoes out of the ground, separate potatoes from other plant material, dirt, and rocks. Harvesters must do all this while being gentle enough to prevent bruising.

### Action Learning

1. Plant a seed potato in a pot for the class that will be left in the classroom. Explain that in about 2 weeks they should start looking for the plant to emerge. Write the date on the pot so they can keep track.

2. Make potato people puppets. Each student gets a paper sack, pieces of colored construction paper, google eyes (they have scissors and encourage them to make their own creative potato people puppet

3. Hand out potato snacks – thanks to the Washington State Potato Commission for their donations and great support. Questions? Wrap up and thanks to the teacher and students.

### Evaluation

- Make notes of successes, problems with the unit or classes, interesting comments from the children.
- Take a camera with you if it is convenient to take pictures of the students and their activity.
- Give the teacher the evaluation

form. Ask her or him to fill it out and either give it to you then, or mail it to the Extension office at the address indicated on the evaluation form.



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