



KEEP GROWING DETROIT POTATO'S AWESOME ADVENTURE

LESSON:

The Awesome Adventures of The Potato

GRADE LEVEL: K-6

OBJECTIVES:

- Learn about the history of potatoes
- Identify seed potatoes and mature potato plants
- Practice planting seed potatoes (or, practice harvesting mature plants)
- Understand the nutritional value of potatoes
- Prepare and taste a delicious potato salad

KEYWORDS:

Seed Potatoes- A potato tuber grown for its eyes, which are used to start new plants.

Tuber- A swollen, fleshy, usually underground stem of a plant.

Processed- Chemically altered food that has been unnaturally modified.

Carbohydrates- One of the three principal types of macronutrients used as an energy source.

Rhizome- a thick, horizontal underground stem that produces roots and normally shoots and roots from its nodes.

SKILLS:

- Identifying parts of plants
- Getting physical exercise
- Planting or harvesting properly
- Safely handling food and measuring ingredients

OVERVIEW:

The potato is one of the most consumed foods in the United States- the average American will eat 140 pounds of potatoes in one year! Potatoes are a **tuber** and a member of the “*Solanaceae*” (or nightshade) family. A **tuber** grows underground and is a perfect crop for Michigan, where our weather ranges from a cool spring and fall coupled with a warm summer. Potatoes have been grown as human food for an extremely long time and originate from South America, in the Andean mountain region. In present-day Peru, potatoes have been found which are more than 2,000 years old!

Potatoes are fairly easy to grow, but require loose, moist soil and a good amount of space so their roots do not run into clumps of soil or rocks which will prohibit the roots from growing properly and forming potatoes. When planting a **seed potato**, it is important to put the “eye to the sky”, or the part that is starting to sprout. The eye is where the plant will grow from.

Nutritionally, potatoes are a great source of **carbohydrates**. Potatoes are also a good source of vitamin B6, which is good for our immune and nervous systems. Vitamin B6 is necessary for the breakdown of glycogen, which is how sugar is stored in our bodies. **Carbohydrates** are one of the principal ways our bodies get energy. The potato plant has underground stem extensions called **rhizomes**. The plant stores these **carbohydrates** used to fuel our body in its **rhizomes**. As the plant grows, starch builds up and the tips swell into **tubers** that we call potatoes. The part of the plant that we consume is the “energy warehouse” of the potato plant and is packed with **carbohydrates** and other nutrients.

There are many ways that you can prepare and cook potatoes. Baking a potato is the best method to keep all of the nutrients in the super spuds. Frying is a popular way of preparing potatoes but in this process you will be adding extra fat and some of the nutrition will be lost from the potato. In this lesson we'll learn a healthier potato salad alternative.

QUESTIONS TO CONSIDER:

- What are some different ways you can cook a potato?
- What happens to nutrients in food when they are processed?
- What are the main parts of a potato plant and how do they help the plant grow?



MATERIALS:

PART 1:

- Large globe or world map
- Pictures of processed and cooking potatoes
- 1 raw potato
- Boombox or MP3 player
- 1 1lb bag of potatoes
- Whistle
- 2 baskets
- 10 coffee bags/potato sacks

PART 2:

- 1 potato for each student
- Trowels
- 5 gallon bucket of compost

PART 3:

- 5 large bowls
- Measuring spoons and cups
- Knife
- Cutting Board
- Spoons
- Food Processor
- See Recipe for ingredients



PART I: POTATO ENERGY!

PROCEDURE (K-2):

1. Show students a 1lb bag of potatoes and explain to them that the average American eats 140 bags of potatoes in a year. Ask the student the different ways we can eat potatoes. (If prompt is needed, show students illustrations of processed potatoes (hash browns, French fries, etc.)
2. Discuss what happens when we cook or process food. Explain to students that these foods lose important nutrients.
3. Point out South America and the Andes mountains on the globe. Explain that this area of the world is the birthplace of the potato.
4. Explain to students it is time to get some exercise and play 'Hot Potato'! Have students form a circle and stand with their shoulders touching. Pick one student to stand in the middle. To play, turn on some music to get the game started. Students will pass around the potato behind their backs without letting the student in the middle know where it is. When the music stops, the student in the middle has to guess who they think has the potato. If they guess correctly, they switch places with the student who was caught holding the potato.

PROCEDURE (3-6):

1. Show students a globe and ask if they can guess where potatoes come from. Point out South America and the Andes mountain region. Explain that this is the birthplace of the potato.
2. Show students a diagram of a whole potato plant and point out the leaves, rhizomes, and tubers. Explain that potato plants have underground stem extensions called rhizomes. Once the plant has finished its first phase of growth, the leaves make extra carbohydrates in the form of starch in the rhizomes underground. As the plant grows, starch builds up and the tips swell into tubers that we call potatoes. Explain that the carbohydrates found in potatoes give them energy to fuel their bodies in physical activity like a relay race.
3. Divide students into 4 teams. The first student in each team should start with their feet in the potato sack (or coffee bag) and their team lined up behind them. Blow the whistle and get them to race to a certain point and back. They must jump out of the potato sack and pass it to the next teammate in line.
4. Explain to students that they wouldn't have been able to do such a great job in the relay if it wasn't for carbohydrates helping their bodies.



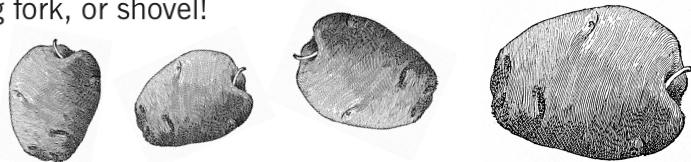
PART II: POTATOES IN THE GARDEN

PROCEDURE (ALL) SPRING:

1. Ask students what they think we need to do to get the soil ready for planting potatoes. What will make it hard for them to grow? What will make them grow well?
2. Space trowels out approximately one foot apart. Have students stand next to each trowel.
3. Show the students a seed potato. How is this seed similar from other seeds in the garden? How is it different? Point out the eye of a potato and explain that the eye is where the plant will grow from.
4. Explain to the students "eye to the sky". Demonstrate how to dig a small hole two inches deep and how to place the seeds with the eye facing up.
5. Tell students that when the plant reaches a certain height it will need to be mounded again for the potatoes to grow well and produce a lot of potatoes for the harvest.

PROCEDURE: (ALL) - SUMMER/FALL ALTERNATE

1. Bring the students to the potato patch. Ask them to recall how potatoes are planted.
2. Place trowels next to each potato mound. Have students stand next to each trowel.
3. Explain that we're going on a hunt for tasty taters. The edible portion of the potato grows underground as tubers. Tubers are the energy storehouses of the potato plant- when they are fully grown, they are jam packed with carbohydrates that the plant uses for energy.
4. Demonstrate how to carefully dig around the potato mound, freeing the plant from the soil. It is supremely important not to damage the roots with your trowel, digging fork, or shovel!



PART III: FEAST OF THE POTATO: MAKING TASTY TATER SALAD

PROCEDURE (ALL):

1. Have students name some of their favorite potato foods.
2. Recap the health benefits of the potato, including carbohydrates and Vitamin C.
3. Ask students what they think happens to some of the vitamins and nutrients of food when we cook them? Explain that some methods of cooking like frying add extra fat and cause us to lose some of the nutrition in our vegetables. Baking potatoes is one method for keep all of the nutrients in the super spuds.
4. Split the class into two cooking teams and tell them we are going to make a healthy tater salad.
5. The dressing team can measure the tahini, apple cider vinegar, mustard, water, paprika, salt, and cumin. They can also squeeze the lemon and add all the ingredients to the mixing bowl.
6. The salad team can add the sun-dried tomatoes and chipotle peppers to the food processor or to the bowl if they are already chopped. They can also separate the cilantro from the stems and add the leaves to the bowl.
7. Have the students pour the dressing over the potatoes and stir until they are coated.
8. Taste the salad. What does it taste like? Does it taste like other potato dishes they have eaten before?

RECIPE: SMOKY POTATO SALAD

For the dressing:

- 1/3 cup tahini (sesame paste)
- 1 Tbsp. apple cider vinegar
- 1/2 Tbsp. Dijon mustard
- 1 cup water
- Juice from 1/2 of a lemon, or 2 Tbsp. of lemon juice from a bottle
- 1 tsp. paprika
- 1/2 tsp. cumin
- 1/4 tsp. salt

For the salad:

- 1 pound potatoes, boiled and diced
- 1/4 cup sundried tomatoes, chopped
- 1/8 cup chipotle peppers, chopped (take out any seeds if you find them!)
- 1/3 bunch cilantro



Preparation:

1. Mix all ingredients for dressing in a bowl. Add water if the dressing is too thick, it should be thin enough to pour and easily coat all the potatoes.
2. Put the potatoes in a large bowl. Add the tomatoes and peppers to the potatoes. Separate the leaves from the cilantro stems and chop finely. Add to the potato mixture.
3. Pour the dressing over the potato mixture and stir until coated.
4. Eat and enjoy!



Keep Growing Detroit is cultivating a food sovereign city where the majority of fruits and vegetables consumed are grown by Detroiters within the city's limits. For more information visit keepgrowingdetroit.org or contact Keep Growing Detroit at (313) 757-2635 or info@keepgrowingdetroit.org.