

Session One Outline: What has eyes but cannot see?

Introduction

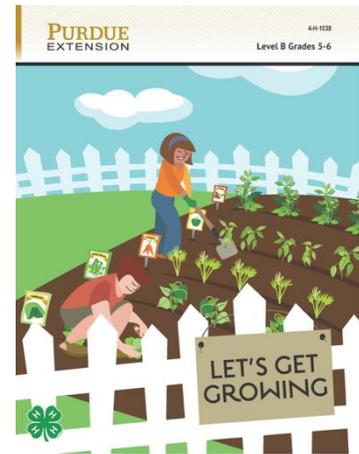
The surface of the potato has eyes. Each eye is actually a bud for a shoot. New potato plants can be grown from seed or by planting pieces of a potato (propagating) as long as each of the pieces have eyes. Eye grows into a new potato plant.

Goals

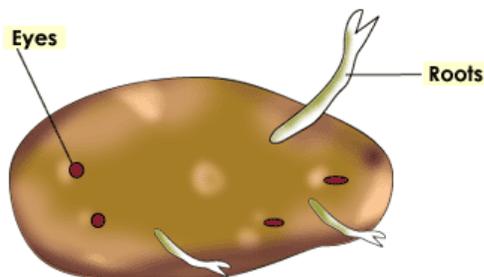
Understand the concept of vegetative propagation and demonstrate the abilities to grow plants from plant parts

Learning outcomes

- Demonstrates knowledge and skills of growing plants from plant parts
- Through gardening, youth develop important skills of using scientific methods effectively
- Understand that many plants can also produce a new, complete plant from part of another one



Potato



Activity: What has eyes and cannot see?

In part one of this activity youth will compare the growth of potato plants planted by seed and by pieces. In part 2, youth will grow garlic from cloves.

Keep an observation journal for all your pots so you can easily compare growth rates, heights, color, size, number of leaves, and other differences.

Before you start, think about what differences you might see - "plant" a question!

Material list for part 1:

1. Two six-inch-deep containers (flower pot, large can, dish pan, milk carton, even a heavy-duty plastic bag)
2. Rocks for drainage if the container has no holes
3. One to three potatoes depending on the size of your container
4. Potato seeds
5. Potting soil
6. Knife

Activity Part One Instructions: Potatoes from tubers

1. Put the potatoes in a dark cabinet. Check the skin of each potato every day for the small white growths called eyes

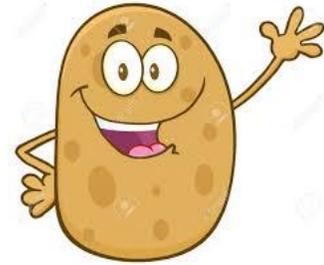




2. Ask an adult to help cut the potatoes into fairly large pieces. Make sure each piece has one or two eyes
3. Put rocks in the bottom of the containers or poke a few holes for drainage. Fill the containers with potting soil almost to the top.
4. If you are using large plastic bags, fill with soil about 4 inches deep. Put the bags in a large

box or other large container so you can easily move to a sunny window or patio

5. In one container, dig a hole 2-3 inches deep, and place a piece of potato in it with the eye up. If you want more than one potato, place the pieces about 12 inches apart. Keep the soil moist but not wet.
6. Observe for two or three weeks.
7. Plant potato seeds in the other container. Thin seedlings by pinching off the weaker ones. Observe for two or three weeks.
8. When sprouts are peaking out of the soil, add 2 more inches of soil.
9. When the sprouts are 2-3 inches long, pick them all except for a few good sprouts.
10. If your container is deep enough, add more soil when the potato plant flowers (the flowering season), so the potatoes won't be exposed to light. Water the plants less near harvest time. You might not be able to grow potatoes to maturity in your container, but it's worth a try.



Material list for part 2:

1. Garlic cloves from a bulb
2. Potting soil
3. Small container
4. Toothpicks
5. Jar



Activity Part Two instructions: Garlic from Cloves

Break a garlic bulb into individual cloves. Leave the papery skin on. Pick out the biggest cloves-no squishy ones! You can plant the garlic cloves in two ways:

1. Plant separate cloves with the flattened end down, 2 inches deep in potting soil or in the ground. Allow 3 inches between cloves. Garlic doesn't like too much water, so allow the soil to dry between watering. Watch for green shoots. It takes about five months for the leaves to turn yellow. Stop watering once the leaves begin to turn yellow. Harvest when the leaves are completely yellow.

GARDENING: MORE THAN SEEDS

2: Pole 3-4 toothpicks into a clove. Balance on the rim of a jar full of water so that the flat end of the clove is in the water. Let it sit near a window, and you'll see it grow within days. Once the clove grows lots of roots and a few green sprouts, you can plant it in a container and keep it in a sunny place until you transplant it into your garden.



Discussion:

Ask participants to:

1. Share the question they “planted” when they started this activity with their project helper
2. Show the results of your experiment to a family member. Ask if this person knows whether most farmers and gardeners grow potatoes from pieces or from seeds. How did your family member answer?
3. Why is it important for you to be able to analyze data from an experiment?
4. How does observing and keeping records help you learn?

