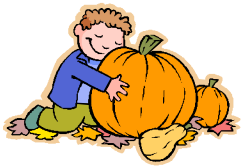
Harvest of the Month

Tulare County Office of Education
Jim Vidak, County Superintendent of Schools

CHAMPIONS for CHANGE™



A Plant's Life

Lifecycle Seed Packets

Adapted from "A Plant's Life" from Polk County, Iowa, Agriculture in the Classroom

Students Objectives: This activity is designed to help K-3rd students visualize the lifecycle of plants. Students make a lifecycle seed packet using cardstock or construction paper. You can make a larger version out of felt or fun foam to use as a visual aid in a group setting. Students will learn growth and nutritional facts about pumpkins, pumpkin flowers and pumpkin seeds. Students will have an opportunity to plant a pumpkin seed and watch their own pumpkin plant grow. Students will be able to identify a variety of healthy snacks. Pumpkin Dip: Teacher will demonstrate how to make, then students will prepare and taste test Pumpkin Dip.

Core Standards: **Kinder:** Life Science 2c, **First:** Life Science 2b, 2e, **Second:** Life Science 2f, Earth Science 3c, **Third**: Life Science 3a

Health Standards: **Kinder:** Essential Concepts K.1. N.2 Identify a variety of healthy snacks
Second: Essential Concepts 2.1.N.7 Identify a variety of healthy snacks

Activity: Read *Pumpkin Circle* by George Levenson or *From Seed to Pumpkin* by Wendy Pfeffer and James Graham Hale, or discuss plant lifecycles. Using the Pumpkin Lifecycle Seed packet, review the lifecycle of pumpkins. In front of the class, pull out one item at a time from the seed packet. Ask students questions about this stage and what happens next. Use the outline and questions below to guide the discussion.

Instructions for making the Pumpkin Lifecycle Seed Packet:

Materials:

- Construction paper or cardstock in ivory, green, yellow, orange, and brown
- White yarn (one 7-foot piece and three 4-inch pieces per student)
- Scotch tape
- Scissors
- Large white envelope (9"x12")
- Crayons or markers

Instructions:

1. Use cardboard patterns to trace each shape on the appropriate color of construction paper, or copy the shapes directly on cardstock.
   - Seed: **ivory**
   - Sprout, leaf, and small pumpkin: **green**
   - Flower: **yellow**
   - Big pumpkin: **orange**
   - Squishy pumpkin: **brown**
2. Cut out the plant part shapes. If desired, draw details such as veins, flower parts, and ridges on the shapes.
3. Tie three 4-inch pieces of yarn together with a knot at one end. Tape the knotted ends of the yarn to the bottom of the sprout's stem to represent roots.
4. Following the order below, tape the plant parts to the long piece of yarn. Start at the very end of the 7-foot length of yarn and space the parts approximately 12-inches apart.
   - 1-seed
   - 2-sprout
   - 3-leaf

- 4-flowers
- 5-small green pumpkins
- 6-big orange pumpkins
- 7-brown squishy pumpkin

5. Using markers or crayons, decorate the white envelope to look like a seed packet.
6. Tape the end of the long piece of yarn to the inside edge of the envelope. the brown squishy pumpkin should be closest to the envelope.
7. Stack the shapes neatly and place them inside the envelope.
8. Starting with the seed shape, slowly pull the shapes out of the pumpkin as you tell the story of the pumpkin life cycle.

Lifecycle Outline and Discussion Questions

What do farmers and gardeners plant when they want to grow pumpkins? Let's look in our seed packet to find out.

Seed – pull out the seed

Discussion:

- Where do farmers or gardeners plant seeds? ***underground or in the soil***
- Pumpkins grow best in loose, rich, soil. You can put kitchen scraps around the plant to help make the soil better.
- What else does the seed need to grow? ***water and warmth from the sun***
- What happens next? ***the seed starts to grow underground (germinates), and then a sprout appears***
- Pumpkin seeds are a great snack. They have vitamins A, thiamin and niacin. Vitamin A is important for normal growth. Thiamin and niacin are B vitamins that help your body change carbohydrates into energy. Pumpkin seeds are the most nutritious part of the pumpkin. Here are some other healthy snacks you could eat: peanut butter spread on celery, raisins, a juicy apple or pear, grapes, pretzels, graham cracker, carrot sticks, yogurt topped with granola, chopped pecans and blueberries, whole beans on a tortilla, slice of cheese.

Sprout

Discussion:

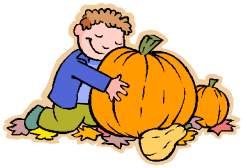
What is this tiny plant called? ***a sprout***

- What do the white strings at the bottom represent? ***roots***
- What do the roots do? ***they take water and food from the soil to the plant. They also act like an anchor to hold the plant in the ground***
- What does the plant need to grow bigger? ***sun, water, and nutrients or food from the soil***
- What happens next? ***the plant grows taller and large green leaves appear***
- Just as the pumpkin plant needs water, your body needs water too. Water is a nutrient. It helps you digest food, helps your cells grow, helps your joints move and regulates your body temperature
  - *Note to teacher: The first two leaves that form above ground are called the cotyledon leaves. They are more round and smooth than other pumpkin leaves*

Big Green Pumpkin Leaves

Discussion:

- How have the leaves changed? ***they are bigger***
- How big do pumpkin leaves grow? ***more than one foot across***
- Ask students to make a big circle with their arms to represent the size and shape of a big pumpkin leaf.
- The big green pumpkin leaves can be eaten. Wash them in clean water before cooking them. The dark leaves have a lot of vitamin A. They also have calcium which helps make your teeth and bones strong.
- What comes next? ***the flower***



Flower

Discussion:

- What color are pumpkin flowers? ***yellow or gold***
- What do the flowers contain? ***pollen***
- Who visits the flowers? ***bees***
- The yellow blossoms can also be eaten. They appear after the plant has been growing for three weeks. Before cooking, pull out the centers of the flower. Pumpkin flowers are a good source of vitamin A. Besides being important for normal growth, vitamin A also helps keep your skin healthy.
- What happens next? ***a small green pumpkin appears***

Small Green Pumpkin

Discussion:

- What color are the pumpkins when they are little? ***green***
- Ask the students to make a small circle with their hands to represent the size and shape of a little green pumpkin.
- What happens next? ***the ear gets bigger and turns orange***

Big Orange Pumpkin

Discussion:

- What color are big pumpkins? ***orange***
- Ask students to make a big circle with their arms to represent the size and shape of a big orange pumpkin
- What season do we pick big orange pumpkins? ***fall or autumn***
- Cooked pumpkin has a lot of vitamin A and vitamin C. Both these vitamins help you fight sickness.
- What happens next? ***the pumpkin gets squishy and turns brown***

Squishy Brown Pumpkin

Discussion:

- Why did the little pumpkin turn brown? ***it was old and the weather outside became cold***
- What is inside the pumpkin? ***seeds***
- Point to the seed at the beginning of the lifecycle and explain that the lifecycle will start over again. It is a continuous circle.

Follow up activities
Making a Healthy Snack and Growing a Pumpkin Plant

Growing a Pumpkin Plant

After learning how pumpkins grow, give your students an opportunity to grow their own pumpkin plant in a paper cup or egg carton filled with potting soil. You will need to purchase garden grade pumpkin seeds.

When seeds sprout and are too big for the container, replant outdoors if possible. Or have your students make their own inexpensive containers. See instructions for making a “Newspaper Pot”.

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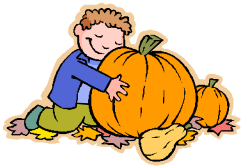
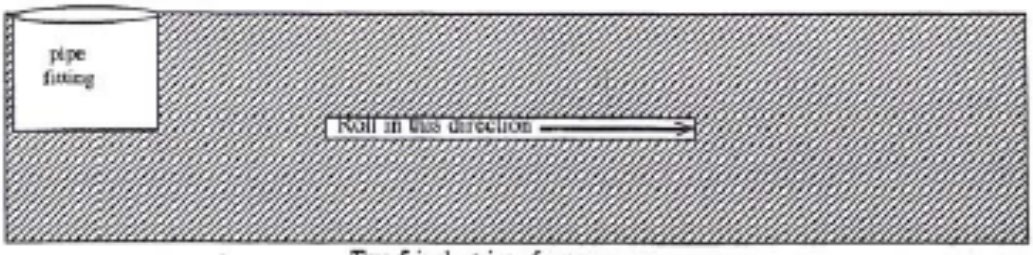


Newspaper Pots

Make biodegradable planting pots inexpensively by using newspaper.

1. Cut large sheets of newspaper vertically into 5 inch strips.
2. Lay two strips on top of each other.
3. Place a 2 inch PVC pipe fitting (found in the irrigation/pipe section of Home Depot) at one end of the strips of paper and flush with the top edge of the newspaper.
4. Wrap the 2 strips of paper around a pipe fitting, pushing the excess paper up into bottom hole of the fitting to form a bottom to the pot.
5. Remove the pipe fitting so you can make more pots.
6. Fill the pot completely to the top with good quality potting soil.
7. Immerse the whole paper pot and soil in a large tub of water so that it is thoroughly wet and the soil is settled..
8. Plant seeds to a depth equal to 2 or 3 times the diameter of the seed.
9. Label pots with popsicle sticks and place in a water tight tray.
10. Keep moist by pouring water into the bottom of the tray and the pots will stay wet.
11. When plants are several inches tall, set the whole pot into the soil.
    Be sure to bury the top edge of the newspaper or it will act as a wick and quickly dry out the whole plant.



Two 5 inch strips of newspaper.

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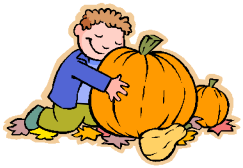
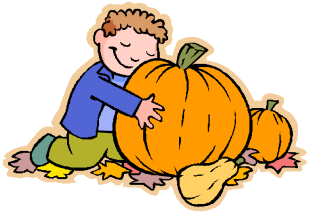


Instructions for making Pumpkin Pudding

- Assemble ingredients and measuring tools
- Select a student chef
- Have student measure all ingredients into a mixing bowl
- Scoop into a 3 oz cup
- Give students a copy of the recipe to take home and make with their parent

Pumpkin Pudding



Ingredients

2 cups pumpkin puree-canned or fresh
2 tsp. pumpkin pie spice or 1 tsp. ground cinnamon,
½ tsp. ground ginger, ¼ cloves, and ¼ tsp. nutmeg
1/8 tsp. salt
1 ½ cups low-fat milk
1 package instant vanilla pudding

Instructions: Remember to wash your hands.

1. In a large bowl mix pumpkin, salt, and pumpkin spice together.
2. Slowly stir in milk and mix well.
3. Add instant pudding mix and stir for 2 minutes.

Source: Snap-Ed Recipe Finder