Integrated Lesson Plan: Pumpkins

Measurable Learner Objectives:

Science:
The student will be able to recognize the plant life cycle.

Language Arts:
The student will be able to correctly sequence a story or everyday events.

Assessment:
The student will correctly sequence pictures of the pumpkin life cycle.

Suggested Learning Activities:

1. Shared reading of Pumpkin, Pumpkin by Jeanne Titherington
2. Sentence strips telling the story are displayed. The students are given cards with pictures to fill in the blanks and are invited to come up and place them on the chart.
   Jamie planted a pumpkin _____,
   and the pumpkin seed grew a pumpkin _____,
   and the pumpkin sprout grew a pumpkin _____,
   and the pumpkin plant grew a pumpkin _____,
   and the pumpkin flower grew a pumpkin.
   And the pumpkin _____, and _____, and _____,
   until Jamie _____ it.
3. Students create a model of the pumpkin cycle.
   Staple two paper plates together, leaving the top section unstapled. Decorate like a jack-o-lantern. Attach a piece of yarn to the pumpkin. Attach pictures to the yarn that represent each of the steps leading up to the jack-o-lantern. The "vine" can be stuffed inside the pumpkin and gradually pulled out as students retell the *Pumpkin, Pumpkin* story, or recite the steps of the pumpkin life cycle.

Resources:
Big Book: Pumpkin, Pumpkin by Jeanne Titherington
Sentence strips, word/picture cards
Pumpkin life cycle sheet, paper plates
Pumpkins

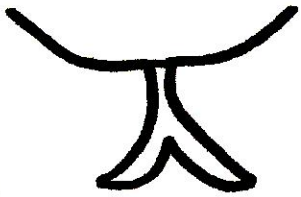
Reteaching/Enrichment:
Take a field trip to a pumpkin patch. Recall events or use pictures from field trip to sequence.

Plant pumpkin seeds:
Place in plastic bag with wet paper towel until they sprout, then place in soil. Keep track of and sequence steps.

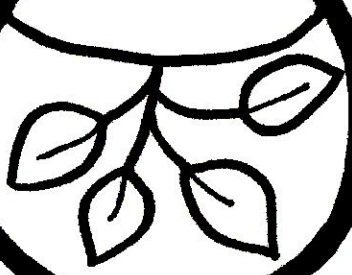
Pumpkin Life Cycle

seed

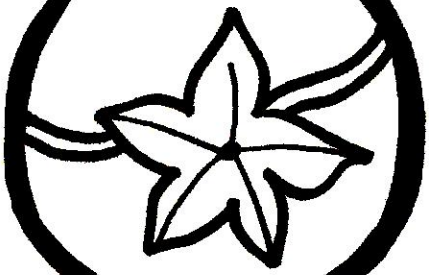
sprout



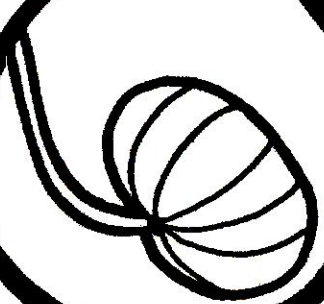
plant



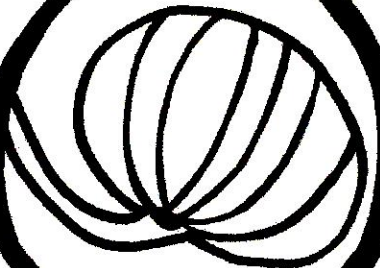
flower



green pumpkin

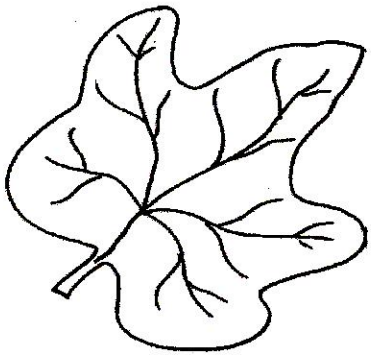


orange pumpkin



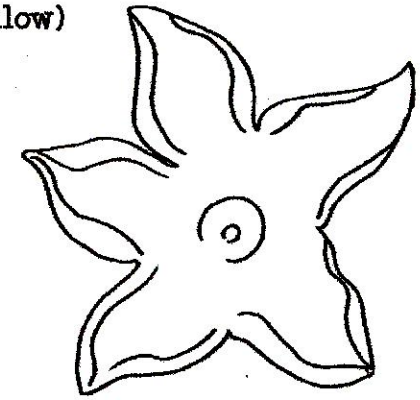
Life Cycle of a Pumpkin

1. **Seed** (brown or tan)

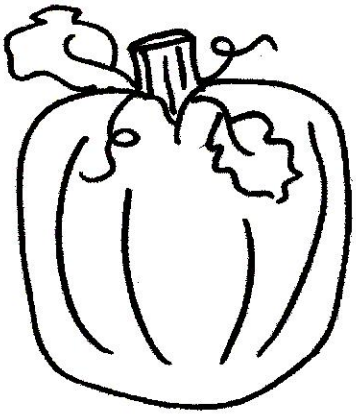


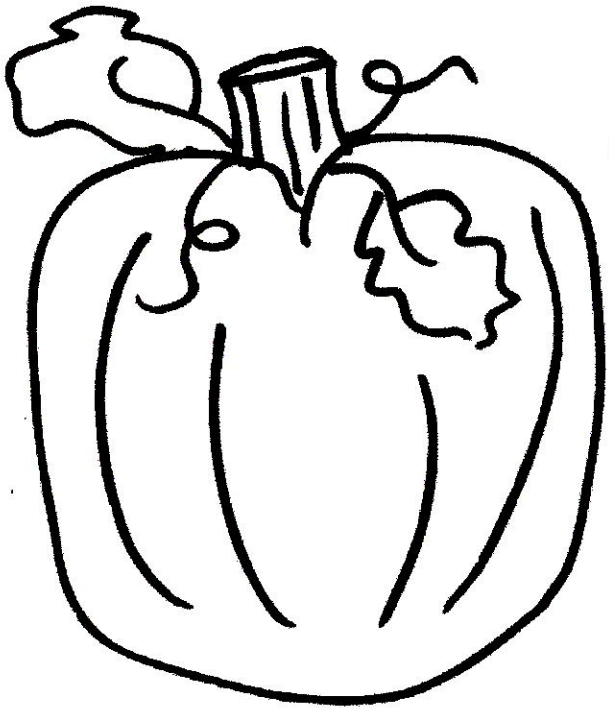
2. **Sprout/Leaf** (green)

3. **Flower** (yellow)



4. **Small Pumpkin** (orange and green)





5. **Large Pumpkin** (orange and green)

Instructions:

1. Color each life cycle of the pumpkin.
2. Cut out each life cycle of the pumpkin.
3. Tape each stage of the cycle onto string in the correct order.
4. Tell your life cycle of a pumpkin story.

For Complete Instructions Visit:
www.trcabc.com,
Free Classroom Crafts with Carol,
Fall.

P IS FOR PUMPKIN

1 CONNECT THE DOTS

Connect dots 1–30 to complete the picture.
Color it in when you finish! Be creative! Give your pumpkin a face.

2 THE LIFE CYCLE OF A PUMPKIN PLANT

Farmer Jeff is planting pumpkins on his family's farm. Fill in the blanks below to help Jeff understand what is needed for his plants to grow.

1. The _____ is planted in the ground.

2. _____ grow down into the _____ and a _____ grows up toward the sky.

5. What other things does the plant need to grow?
_____ and _____!

3. _____ begin to grow and then _____ appear on the _____.

4. _____ visit the blossoms to collect _____ and _____. Then the pumpkin begins to grow big, round and orange!

WORD BANK

plant, seed, honeybees, blossoms, soil, sunlight, pollen, water, leaves, stem, roots, nectar

ANSWER BANK

PUMPKIN MATH
a) 6, 4, 3, 8, 4, 2 b) Shelf 4
c) Shelves 2, 3, 5, 6 d) 27
Advanced Pumpkin Math
e) Shelf 1 = 30 Shelf 2 = 20 Shelf 3 = 15 Shelf 4 = 40
Shelf 5 = 20 Shelf 6 = 10
f) Shelf 1 = 60 Shelf 2 = 40 Shelf 3 = 30 Shelf 4 = 80
Shelf 5 = 40 Shelf 6 = 20
Total pumpkins: 270

3 MY VISIT TO THE FARM...

In the space below, draw a picture of an item or scene you saw on the farm:

WHAT I SAW AT THE FARM

What is one fact you learned? Be sure to write your answer in complete sentence(s) below:

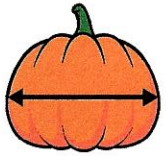
4 PUMPKIN RECORDS

Directions: Using a pumpkin you picked at the farm or purchased this fall, answer the questions below.

a. If you were to place you pumpkin in water, would it sink or float? What is your scientific guess? _____

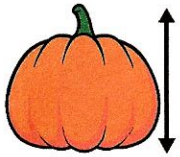
b. Place your pumpkin in a tub of water. Does it sink or float? _____

c. Using a ruler, measure the width of your pumpkin.



How many inches wide is your pumpkin? ____

d. Using a ruler, measure the height of your pumpkin.

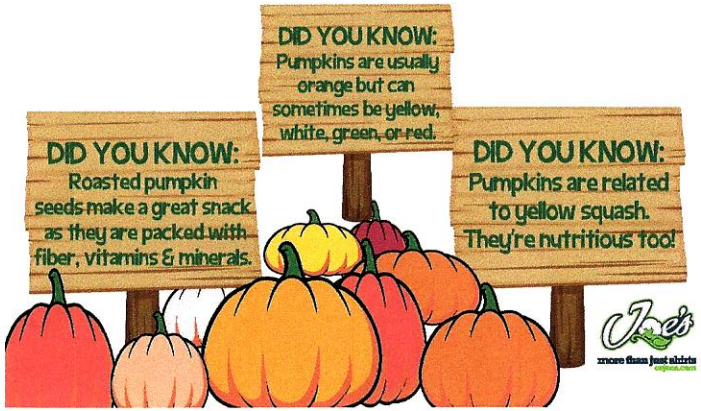


How many inches tall is your pumpkin? ____

e. How much does your pumpkin weigh? ____

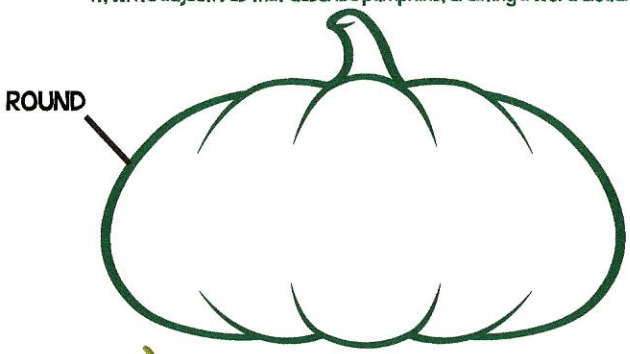
f. How many seeds do you think are inside your pumpkin? ____

g. With the help of an adult, cut your pumpkin open and count the seeds. How many seeds does your pumpkin have? ____



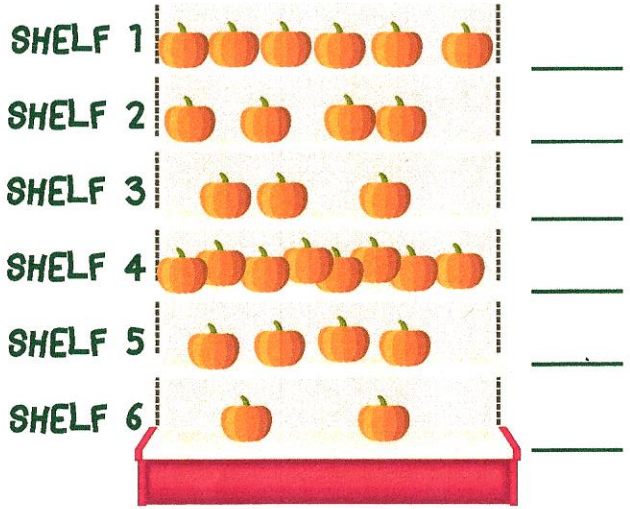
5 DESCRIBE YOUR PUMPKIN

Below is the outline of a pumpkin. Using the space around it, write adjectives that describe pumpkins, creating a word cloud.



6 PUMPKIN MATH

How many pumpkins are on each shelf at the market?



TOTAL PUMPKINS: _____

a. How many pumpkins are on each shelf?
b. Place an X beside the shelf with the most pumpkins.
c. Circle the shelves that have four or less pumpkins.
d. What is the sum of the pumpkins on the shelves? _____

*Advanced Pumpkin Math:
e. How many pumpkins would be on each shelf if each fruit represented 5 pumpkins? _____
f. What if each fruit represented 10 pumpkins? How many total pumpkins would there be? _____

7 PUMPKIN WORD PATCH

Below are some words that describe pumpkins grown in Georgia. Find them each and consider yourself a pumpkin expert!

WORD BANK

SPICE	BREAD	HARVEST	SPHERE	WATER
BAKING	PLANT	ROUND	STEM	CARVE
PIE	ORANGE	JACKOLANTERN	AUTUMN	LEAVES
SEEDS	SQUASH	MUNCHKIN	VINE	GROW
FRUIT	PUMPKIN			

M F R U I T D E S V S Y J G A
Q D P F C A R V E P L H N N Z
Y G R O W L J Y A D H I R E V
L A F V H Z Q G N U K E Q T R
F S H K A Q O U W P T N R P Z
J A Q S Y H O R M N L U S E N
Z W S U Q R M U A P K A M O B
R T J Y A K P L H N L Y N N A
L E A V E S O Z E A G A W T K
Z D K P F K H N H K R E T X I
I S E E C J I M U N C H K I N
B P H A R V E S T M U E D S G
M I J R D V D U F G L Y U B P
R C U N J P B R E A D P I E A
H E S E E D S T E M W A T E R

ANSWER BANK

DO YOU KNOW?
summer
THE LIFE CYCLE OF A PUMPKIN PLANT
1. seed 2. roots, soil, stem 3. leaves, blossoms, plant
4. honeybees, pollen, nectar 5. water, sunlight

Georgia AgriTourism ASSOCIATION

Where did my pumpkin go?!

Studying the life cycle of a pumpkin.

Summary: Students will observe the decomposition of a pumpkin under a controlled environment in the classroom. The students will take notes in a log designed by the teacher and develop questions from their notes. This will lead to discussion about investigation questions, recycling/trash/composting, and life cycles.

Learning Goals: This activity is designed to help students make careful observations of the decomposition of a pumpkin and its role in the life cycle of a plant. They will learn to take notes on what they observe, formulate questions about what they do not understand or about what they would like to know more about, and write narratives that explain the process.

Recommended literature:
Non-Fiction: "Rotten Pumpkin" by David M. Schwartz
Fiction: "Pumpkin Jack" by Will Hubbell

Part 1:

Have the students research about pumpkins (origin, history).

Bring a large pumpkin to the class to carve into a Jack-O'-Lantern. Have students write initial descriptions in their log and take photos. Include the uses of senses (feel, touch, smell, see).

Have the students write what they think will happen to the pumpkin over time.

Part 2:

Carve the pumpkin. Have the students write descriptions in their log about the inside of the pumpkin as they scoop it out. For a taste test, bring in something made with pumpkin. Don't forget to take photos!

Leave a few seeds inside the pumpkin, save a few to plant in the school garden, plant a couple of seeds in a small container, and save the rest to bake or roast for the students to taste.

Idea: bring enough small pumpkins for each student. Scoop them out, add soil, and plant two pumpkin seeds. They can keep a separate log for their own personal pumpkin pot. (They can give it a name, write stories, etc.)

Part 3:

After the Jack-O'-Lantern has served its purpose, place it in a large terrarium. Put some litter (such as wrappers, empty soda can, anything non-biodegradable), soil, and some of the stringy insides from the pumpkin in the terrarium as well. Lightly moisten the soil with some water.

Cover the terrarium with some plastic wrap, aluminum foil, and whatever else will work to create an air seal, and duct tape it on. (Decomposition smells unpleasant and you don't want the classroom to smell bad. However, even this is a teaching opportunity to discuss why decomposition smells bad. It is the microorganisms doing their job!)

Photos, please! Have the students record the process and date.

Place the terrarium on the windowsill somewhere that is accessible enough for the students to examine closely without the chance it will get knocked off or the cover torn.

If you do the pumpkin pots, try to place them near the terrarium. (You may want to put a paper plate under the pots in case of leaking.)

Part 4: Ongoing

Set a schedule (approximately once per week) for the students to closely observe the pumpkin in the terrarium and record those observations in their log. Take photos, too!

As they record observations, have them formulate questions. What do they not understand? What else would be good to know? Collect these for discussion. In some cases, you can hold the questions until later in the process to see if the questions will be answered as the pumpkin decomposes.

Idea: Create a "question box" and log the questions into a check list for answers.

As you are observing the pumpkin, use the "Rotten Pumpkin" book to talk about the factors that make the pumpkin decompose and how the process works.

Also, if you put litter such as soda cans, etc., in the terrarium, have them make notes on what is happening with those items as well.

If they have the Pumpkin Pots, they should record their observations of those, too.

Part 5:

By spring, the terrarium should be holding essentially soil and gooey pumpkin remains.

Gather all the questions and see if any of them have been answered in the process. What questions are left?

Discussions:
What happened to the pumpkin?
What happened to the litter?

Part 6:

Remove the decomposed pumpkin to the school garden and cover with soil. Since you left a few seeds inside, they should sprout. Have them continue their log with the sprouting and growth of the seeds.

Other notes:

My Science Project Kids Activities: Pinterest has a whole board on rotting pumpkins.

Fun facts:

- pumpkin comes from the Greek word meaning large melon
- pumpkins are thicker shelled and contain pulp and seeds
- scientifically speaking pumpkins are fruits but we consider them a vegetable
- world record pumpkin weighed 1,810 pounds but the average pumpkin weighs 13 pounds
- one billion pounds if pumpkins are grown in the United States each year
- pumpkins can be used as decorations, crafts, and good.

Save the seeds. Seeds can be dried and placed in freezer bag to use as planting seeds or they can be dried and toasted for a healthy snack. Birds love them too. They can journal their senses roasting the seeds.

Pumpkin Websites

Strong STEMS Need Strong Sprouts
http://childrenscenteratcaltech.org/wp-content/uploads/2014/04/Strong-STEM-Needs-Strong-Sprouts.pdf

Pumpkin Life Cycle Sequencing Activity- Printable Lesson Plan
http://printables.atozteacherstuff.com/375/pumpkin-pumpkin-sequencing-activity/

Pumpkin Facts (from University of Illinois)
http://urbanext.illinois.edu/pumpkins/facts.cfm

Pumpkin Facts for Kids
http://www.sciencekids.co.nz/sciencefacts/food/pumpkins.html

Illinois Ag in the Classroom Ag Mag – Pumpkins
http://www.agintheclassroom.org/teacherresources/AgMags/Pumpkin%20Interactive%20Ag%20Mag2.pdf

Where did my pumpkin go?!

As mold spores and other decomposers "eat" the pumpkin the changing composition of the pumpkin provides nourishment for the soil and the little seeds left inside the pumpkin. Then we can grow new pumpkins to make next year's Jack O'-Lanterns!!!