

Ag in the Classroom

Alabama Ag in the Classroom



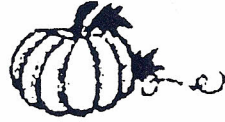
Pumpkin Unit

Seeds of Discovery

What's large, orange, and filled with seeds? Even the youngest of elementary-age students can answer this riddle with ease. Take a pumpkin to school with you and create an atmosphere of fun and excitement with the activities included in this unit. Each activity featured can be used by itself or as part of a week-long festival in honor of October's most famous fruit.

The specific activities are designed to be used by the elementary teacher and require readily available, inexpensive materials. There's a lot of mileage in one modestly priced pumpkin. So plant the seeds of discovery and watch as learning takes over in your classroom.

How Pumpkins Grow



Pumpkins belong to a family of plants called cucurbits. Other members of the family are squash, gourds, melons, and cucumbers. These grow in fields on long vines that cover the ground. Pumpkins come in a variety of colors, from white to yellow to orange, and range in size from less than a pound to more than 1,000 pounds. They trace their origins to Central America. The name *pumpkin* comes from the Greek word *pepon* meaning "large melon."

Pumpkin seeds are planted in May and June, depending on the temperature of the soil. The seeds, dependent upon warmth and moisture, generally germinate in 7-10 days. As the leaves and vines develop above the ground, an extensive root network is developing in the top twelve inches of soil. These shallow roots are noticeable as offshoots of the vine along its entire length and are used to gather most of the food, moisture, and air that the developing plant needs. The pumpkin plant develops a strong tap root that grows as deep as 2-3 feet. Tendrils that form along the length of the vine help to support the plant.

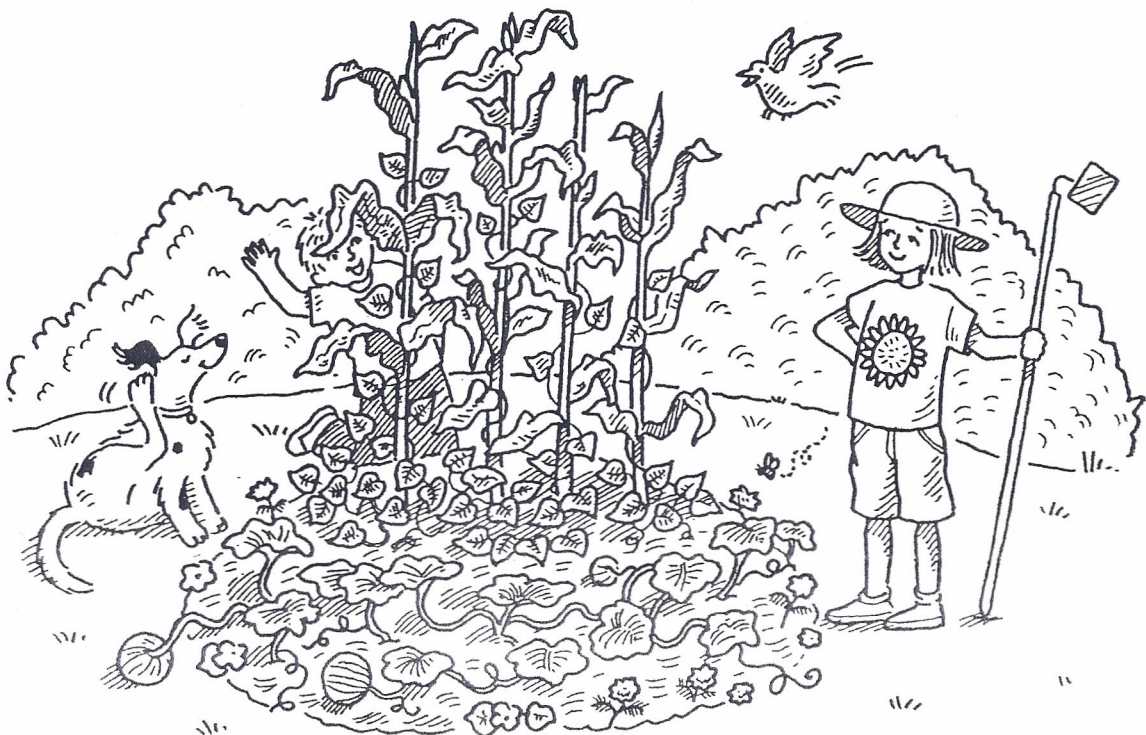
Yellow blossoms begin to appear after several weeks of growth. The vine develops both male and female flowers. Female blossoms are easily distinguished from the male by the presence of a small, rounded shape at the base of the flower. Bees spread pollen from the male to the female flowers. After pollination, the fruit at the base of the female blossom begins to develop into a full-sized pumpkin. At this stage of development, the pumpkins require a steady supply of moisture and sunlight. It takes approximately 90-120 days for the pumpkin to fully develop after the seed has been planted.

Gardening with the Three Sisters

Did you know that Native Americans planted pumpkins with corn and beans? These three crops are known as the Three Sisters. In Iroquois legend, the Three Sisters are believed to be the gift from the Sun God, who created corn, beans, and squash to keep the first people of the earth healthy. The Three Sisters were traditionally planted together in a circular mound garden, reflecting the never-ending cycle of nature. Each 3-foot-diameter mound included 4 to 6 corn plants in the middle, surrounded by bean plants. Pumpkins or other winter squashes were planted along the mound's edge.

As they grow, each of the Three Sisters helps her other sisters to grow better. The pumpkin vines and leaves cover the ground like a blanket, crowding out light and thus preventing weeds from getting started. They create a prickly barrier that helps keep raccoons, deer, and other critters away from the corn. The bean plants add nutrients to the soil, helping to feed the hungry corn, while the corn makes a natural trellis for the beans to climb. It's a pretty smart setup! Give your pumpkins some pals by growing them with corn and beans.

In Native American tribes of the past, women were the pumpkin farmers. To prepare the hills for planting, they used digging sticks made of shells, sticks, rocks, antlers or even animal bones. Planting sticks, made from a thin branch with a seed-size tip, were used to poke the seeds into the ground.



Growing Pumpkins in the Classroom

What's Inside That Seed?

Objective: Students will observe the embryo of a seed.

You'll need: Pumpkin seeds (enough so that each student has one), water, shallow dish, hand magnifiers

Procedure:

1. Discuss with students the conditions needed for seed germination: moisture, temperature. Is soil a requirement? Why or why not?
2. Explain the role and importance of the plant embryo.
3. Place a moistened paper towel in a shallow dish. Cover with pumpkin seeds. Cover with another paper towel and a small amount of water.

The next day:

4. Direct student to examine the damp seeds with magnifiers, observing the embryo. Have students illustrate, label, and write about their findings.

Ziplock Success!

Objective: Students will observe germination of pumpkin seeds.

You'll need: Seeds (clean and dry), ziplock bags, potting soil, permanent marker

Procedure:

1. Have each student label his/her bag with a permanent marker.
They should include the variety of pumpkin planted and the date.
2. Place a small amount of potting soil in each bag and add several seeds.
3. Add a small amount of water and zip the bag closed.
4. Hang bags up in the classroom and observe. They should require no further care.
5. Record changes noted over the next week. Send the young plants home to be transplanted.

NOTE: This can also be done by substituting a moistened paper towel for the potting soil.

More Growing Ideas. . .



A Handful of Seeds

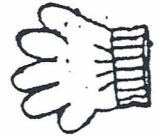
Objective: Students will compare and contrast the rates of germination of different varieties of pumpkins.

You'll need: Pumpkin seeds (try to find 5 varieties, or use other seeds related to pumpkins, such as gourds, squash, cucumber), clear, plastic or latex gloves, cotton balls, water, wide masking tape, fine-point permanent marker.

Procedure:

1. Label each finger of the glove with the date and variety of seed that it will hold. Example: Jack-Be-Little 3/12/01
2. Place a moistened cotton ball in the tip of each finger of the glove.
3. Place a seed on the moistened cotton ball.
4. Seal the glove at the wrist with wide masking tape or duct tape.
5. Place in a well-lighted spot out of direct sunlight.
6. Observe. Illustrate and write about changes that are noticed.

Think about it: Does the largest seed germinate first?



An Easy Pumpkin Patch

Objective: Students will observe the stages of plant development.

You'll need: 1-10 lb. bag of potting soil, a shallow plastic tub, scissors, pumpkin seeds, water, plant light or sunny window sill

Procedure:

1. Place the unopened bag of potting soil in the shallow plastic tub (it should lie flat).
2. Using scissors, cut a large X diagonally across the bag, from corner to corner. Fold the extra plastic back.
3. Plant the pumpkin seeds in the soil about $\frac{1}{4}$ inch deep. Water lightly and place in a well-lighted spot.
4. Keep the soil moist but not overly wet and watch for signs of growth.
5. Have students illustrate and write about the changes they notice.

Pumpkin Math

Pumpkins are a natural for hands-on math. The following suggestions make use of a class pumpkin in teaching about estimation, graphing, place value, and measurement.

How Many Seeds?

Objective: Students will estimate the number of seeds in a pumpkin.

Students will explore place value concepts by counting pumpkin seeds.

You'll need: Chart paper, marker, pumpkin, index cards, white glue

Procedure:

1. Ask students how many seeds they think a pumpkin contains. Record all their estimates on chart paper.
2. Open the pumpkin, remove the seeds, clean and dry them.
3. Glue ten pumpkin seeds on each index card.
4. When approximately half the seeds have been grouped and counted, allow the students to revise their original estimates.
5. Continue gluing pumpkin seeds ten to a card. Tape or staple ten cards together to create a group of one hundred.
6. Compare the final count with the estimates.

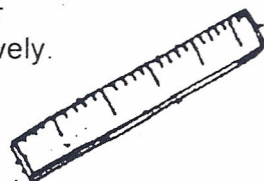
Your Pumpkin and Circumference

Objective: Students will estimate and graph the circumference of a pumpkin.

You'll need: A pumpkin, twine or string, scissors, three construction paper pumpkins, labeled "too long," "too short," and "about right," respectively.

Procedure:

1. Discuss the meaning of circumference and give examples using items found in the classroom (globe, kickball).
2. Tell students they are going to estimate the circumference of the class pumpkin. Tape the three construction paper pumpkins to the board.
3. Pass around a spool of twine or string and direct each student to cut off a length that they think will fit around the widest part of the pumpkin.
4. After all students have cut a length of string, allow them to take turns checking their estimates by fitting their strings around the pumpkin.
5. Direct students to tape their strings on the appropriate pumpkin (too long, too short, about right).
6. Ask students: How many strings were too long? too short? about right?





Create a Pumpkin Graph

Objective: Students will create a seasonal graph.

Students will be able to interpret information from a graph.

You'll need: Posterboard or chart paper. 3 in. x 3 in. orange construction paper squares, pencils, black crayons, scissors, glue

Procedure:

1. Give orange squares to students and have them draw pumpkins that fill the squares.

(Younger students: Teachers may want to trace pumpkin shapes on the orange squares before giving them out to students.)

2. Have students use black crayons to create their favorite jack-o-lantern faces (happy, sad, scary, etc.). Then cut out the pumpkins.

While the students are working on their jack-o-lanterns:

3. Use a black marker to write the date and *Our Favorite Pumpkin Faces* on the long side of the posterboard.

4. Write *scary, happy, sad*, etc. categories on the short side.

After students have completed their jack-o-lanterns:

5. Ask students to glue their completed jack-o-lanterns in the appropriate category.

6. Display the completed graph.

7. Ask students the following questions.

- a. How many students chose scary faces? happy faces? sad faces? something else?
- b. How many more chose scary than sad?
- c. How many scary and happy faces were chosen all together?

NOTE: Be sure to include at least one question that cannot be solved by looking at the graph. For example: "How many children like to decorate pumpkins?"

Other graphing ideas:

1. Use the Internet to research the size of giant pumpkins. Create a bar graph showing the weight of the ten largest on record.
2. If several classrooms in the school have pumpkins, assign upper-grade students the task of recording and graphing vital statistics: circumference, weight, # of seeds, # of creases or ribs, etc.
NOTE: a bar graph can be used to show the relationship between size and number of seeds or creases.
3. Create a graph of favorite ways to eat pumpkin.

Problem Solving with Pumpkins

Read and solve the following problems. Check your answers with the ones provided on the answer key.

1. Sarah and John planted pumpkins in their garden last summer. In October they picked 11 orange Giant pumpkins, 34 Jack-Be-Little pumpkins, and 18 White Casper pumpkins. How many pumpkins did they pick all together?
2. David harvested 68 pumpkins from his pumpkin patch. Jim picked 36. How many more did David pick than Jim?
3. Mrs. Jones bought a pumpkin for her classroom at the Farmers' Market for \$5.25. She paid for it with a ten-dollar bill. How much change did she receive?
4. Jamie's pumpkin weighs 24 lbs. and Jenny's weighs 18 lbs. How much do they weigh all together? How much more does Jamie's weigh than Jenny's?
5. Mr. Alison took 98 pumpkins to the market in October. Fifty-nine of the pumpkins weighed at least 10 lbs. The rest were miniature pumpkins. How many mini-pumpkins did he take to the market?
6. Brown's Pumpkin Patch harvested 176 pumpkins in October and 128 in November. How many did they pick in all? How many more did they pick in October than November?
7. Mrs. Brown gave the fourth grade 45 pumpkins to sell so that they could raise money for a class trip. If they sold them at \$5 each, how much money did they earn?
8. The fifth graders want to decorate the cafeteria for the Fall Festival. They would like to put 3 pumpkins on each of 15 tables. How many pumpkins do they need? If they have to pay \$2 for each pumpkin, how much will it cost? If they sell the pumpkins for \$4 each, how much profit will they make?

Answer Key: 1.) 63 pumpkins; 2.) 32 more; 3.) \$4.75; 4.) 42 lbs, 6 lbs more; 5.) 39 mini-pumpkins; 6.) 304 in all, 48 more; 7.) \$225 earned; 8.) 45, \$90, \$90 profit

Interesting Investigations

Here are some intriguing questions that will get your students involved in the learning process. They can be used as part of a group exercise with younger students or with older students working in cooperative groups.

Think about the creases that run from the stem to the bottom of the pumpkin.

1. Are the creases the same distance apart at the top, bottom, and middle of the pumpkin? If not, where are they closer together? Farther apart?
2. Measure the distance between the creases at the middle of the pumpkin. Are all the creases the same distance apart?
3. Compare several different sized pumpkins. Do larger pumpkins have more creases? Do they have creases that are further apart or closer together?
4. Where on the pumpkin are the creases the shallowest? The deepest?
5. Is the crease visible on the inside of the pumpkin?

Speaking of Seeds . . .

6. Is there a relationship between the size of a pumpkin and the size of its seeds? If so, what is it?
7. Do bigger pumpkins have more seeds than smaller ones?
8. Are all of the seeds from the same pumpkin the same size? If not, where are the seeds the largest? The smallest?

Other thoughts. . .

9. Do pumpkins sink or float when placed in water? Why or why not?
10. If pumpkins float in water, do they float stem side up? Stem side down? On their sides?
11. If you tap on pumpkins of different sizes, do they all make the same sound? If not, how are the sounds different?
12. Can you make different sounds by tapping on different parts of the pumpkin? If so, why do you think this happens?

Pumpkin Poetry and Songs

Pumpkin, Pumpkin

Pumpkin, pumpkin
Sitting on the wall.
Pumpkin, pumpkin,
Tip and fall.
Pumpkin, pumpkin,
Rolling down the street.
Pumpkin, pumpkin,
Good to eat!



Jack-O-Lantern

There is a little pumpkin
Orange and round.
Down in the garden
Laying on the ground.
But on Halloween night
You will see,
A glowing jack-o-lantern
Scary as can be!

Five Little Pumpkins

There were five little pumpkins
Sitting on a gate.
The first one said,
"Oh, my it's getting late!"
The second one said,
"There are witches in the air!"
The third one said,
"I don't care!"
The fourth one said,
"Let's run, run, run!"
The fifth one said,
"I'm in the mood for fun!"
Then crash went the thunder
And out went the lights
And the five little pumpkins
Rolled out of sight.

Pumpkin Song

(tune: I'm a Little Teapot)

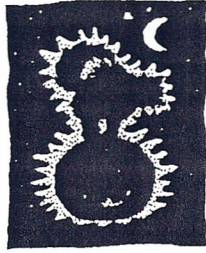
I'm a little pumpkin
Orange and round.
Here is my stem,
There is the ground.
When I get all cut up,
Don't you shout!
Just open me up
And scoop me out!

Mr. Pumpkin

(tune: Where is Thumbkin)

Mr. Pumpkin
Mr. Pumpkin
Round and fat.
Round and fat.
Harvest time is coming.
Harvest time is coming.
Yum, yum, yum.
That is that!

The Pumpkins' Halloween



Five lonely pumpkins on a cloudy night,

- (1) Made a spectacular ghostly sight.
- (2) One of them hopped around on his toes,
- (3) Another one fell and skinned his nose.
- (4) A third one stretched up high in the air,
- (5) And the fourth one danced like a big, brown bear.

The last one made up a scary song,

- (6) So the five lonely pumpkins sang it all night long.

The following gestures may be used to accompany the poem as it is read or as the students say it aloud. Numbers match the line of the poem as shown above.

1. *Students make scary faces.*
2. *Point to one student who hops around.*
3. *Point to one student who rubs his or her nose with hand.*
4. *Point to a student who stretches his or her arms up high.*
5. *Point to a student who dances like a bear.*
6. *All students pretend to sing.*

Ten Little Pumpkins



Ten little pumpkins fresh from the vine,
One sits down and then there are nine.

Nine little pumpkins standing up straight
One bends over and then there are eight.

Eight little pumpkins -the clock strikes eleven,
One runs away and then there are seven.

Seven little pumpkin doing funny tricks,
One forgets how and then there are six.

Six little pumpkins looking at a hive,
One gets stung and then there are five.

Five little pumpkins knocking at the door,
One steps back and then there are four.

Four little pumpkins playing by the sea
One falls asleep and then there are three.

Three little pumpkins, friends just like you,
One goes home and then there are two.

Two little pumpkins having lots of fun,
One goes to bed and there is one.

One little pumpkin, sitting in the sun.
Goes to look for others and then there are none.



Tempting Pumpkin Treats

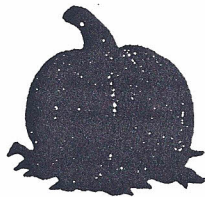
Roasted Pumpkin Seeds

The following recipe makes a delicious classroom treat that is fun and easy!

You'll need: Pumpkin seeds (clean and dry), 1 qt. water, 1 Tablespoon of vegetable oil, 2 Tablespoons of salt

Procedure:

1. Pick through the seeds, removing any cut seeds and as much fiber as possible.
2. Bring the water and salt to a boil. Add the seeds and boil for 10 minutes. Drain, spread on paper towels, and dry.
3. Preheat oven to 250 degrees.
4. Place the seeds in a bowl and toss with the oil.
5. Spread seeds evenly in a single layer on a large cookie sheet.
6. Place in preheated oven and roast for 30-40 minutes, stirring about every 10 minutes, until crisp and golden brown.
7. Enjoy!



Mini-Pumpkins

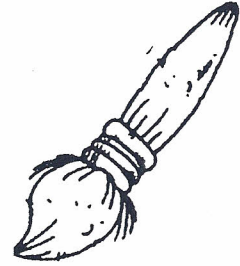
Create a sweet treat during pumpkin week!

You'll need: Candy orange slices (6-7 per child), green gumdrops, 1-can white icing, plastic knife, paper towels or plates

Then you: (Working in a small group or center)

1. Pass out materials to each child.
2. Demonstrate how to "glue" the orange slices together with icing, sides together with the bottom edge facing out to form a pumpkin.
3. When the pumpkin is complete, add a green gumdrop for the stem.
4. Admire for a minute, then enjoy!

The Artistic Pumpkin



Would you like a pumpkin patch in the classroom, but don't have the time or room to grow your own? Turn your students loose with the following art ideas and watch your pumpkin patch spring to life!

Paper Bag Pumpkin Patch

You'll need: Brown paper bags (lunch size), orange tempera paint, brushes or sponge applicators, green yarn or curling ribbon

Next:

1. Have students write their names on the bottoms of the bags.
2. Use a brush or sponge applicator to paint bags with orange tempera paint.
3. Let the bags dry for at least an hour.
4. Stuff with paper and tie the top with green yarn or curling ribbon.

Then: Display your pumpkins on a windowsill or counter. You may turn them into jack-o-lanterns for Halloween by adding construction paper features.

Create a Patch of Mini-Pumpkins

This idea works best in an art center or with a small group.

You'll need: 4 in. x 12 in. strips of brown paper (grocery bags are great), a sponge, orange tempera paint, green markers, fine point black markers, Styrofoam meat tray.

Next:

1. Cut out one strip of brown paper for each student.
2. Place the damp sponge on the Styrofoam meat tray. Cover sponge with orange tempera paint and let it soak in.
3. Touch fingertips to the paint-soaked sponge and press onto the brown paper, creating mini-pumpkins.
4. Allow at least an hour to dry. Add stems, vines, and leaves with a green marker or crayon.
5. Label the pumpkin patches with the students' names. For example: Mike's Pumpkin Patch.

Tin Can Jack-O-Lantern

This can be used as a room decoration, candy holder, or gift.

You'll need: A large can for each child (1 lb. coffee size), white and orange acrylic craft paint, twine or pipe cleaners, black felt, Elmer's glue.

Next:

1. Thoroughly wash and dry the cans, removing all outside paper and glue.
2. Paint cans with one coat of white paint and let dry.
3. Paint cans with a coat of orange paint and let dry.
4. Cut shapes of black felt for the facial features and glue on each can.
5. Punch two holes on opposite sides of the top edge of each can.
6. Use twine or twist pipe cleaners through the holes for handles.

Then: Fill with candy or display in the classroom as decorations.



Paper Plate Pumpkins

What's inside that pumpkin?

You'll need: Paper plates (two per child), white glue, orange crayons or markers, small pieces of yellow or orange yarn, pumpkin seeds, brads

Next:

1. Color both the top and bottom sides of two paper plates with crayons or markers.
2. Glue small pieces of yarn and pumpkin seeds to the top side of the first plate.
3. Print –“What's inside a pumpkin?” on the top side of the second plate.
4. Add a stem and leaves cut from construction paper just above the printing on the second plate.
5. Fasten the two plates together with a brad so that the bottom of the second plate is touching the top of the first plate with the yarn and seeds attached.

Language Arts for Pumpkin Fans

Pumpkin Shape Poetry

Objective: Students will be able to list and use adjectives.

You'll need: A pumpkin, chart paper, marker, 8" x11" white drawing paper (one sheet per student), pumpkin shapes to trace, pencils, fine-point black markers (optional)

Procedure:

1. Display the pumpkin in a spot visible to all students.
2. Lead students in a discussion of adjectives as describing words and elicit specific examples of adjectives that describe the pumpkin.
3. List student-supplied adjectives on chart paper for all to see.
4. Have students choose their favorite five adjectives from the list and record them on a piece of notebook paper.
5. Distribute white art paper and ask each student to lightly trace around one of the pumpkin patterns.
(NOTE: using a variety of pumpkin shapes makes the final display more interesting)
6. Use the list of favorite adjectives and have students copy the words in order around the outline of their pumpkins, repeating the pattern until the entire outline is complete. Trace over the words with a fine-point marker.
7. Erase all pencil marks.
8. Share with other class members and display for all to admire.

Pumpkin Shape Books

Objective: Students will create and share pumpkin stories.

You'll need: Pumpkin shapes to trace (see previous lesson), orange construction paper, white paper, crayons, pencils, stapler.

Procedure:

1. Trace pumpkin shapes onto orange construction paper and plain white paper. Cut out in sufficient quantity for each student to make a book.
2. Brainstorm ideas for pumpkin stories. Develop an information web with students on large chart paper.
3. Direct students to complete a rough draft. Conference with students to edit their efforts.
4. Copy final stories on pumpkin-shaped white paper. Use orange construction paper pumpkins for front and back covers. Add jack-o-lantern faces with black crayon.
5. Share stories with other class members.

Make a Paper Pumpkin Garland

What you need:

Orange construction paper - Scissors - Markers or paint - Ruler

What you do:

1. On the top layer, draw a pumpkin with a stem. Make the widest sides of the pumpkin go beyond the folded edge.
2. Cut a 3-inch by 12-inch strip from a piece of orange construction paper. Fold up the paper, accordion style, six times.
3. Now cut through all the layers except the sides of the pumpkin that touches the fold.
4. Open the garland, and decorate the pumpkins with markers or paint.

Pumpkin Crayon Suncatcher

What you need:

Orange and green crayons - Pencil sharpener or cheese grater - Wax Paper - Iron - Scissors - String and tape

What you do:

1. Sharpen the orange and green crayons and collect the shavings. Or, grate the crayons on a cheese grater.
2. Sprinkle the orange shavings on a sheet of wax paper, so that they resemble a round pumpkin. Sprinkle the green shavings at the top for the pumpkin stem. Cover with a second sheet of wax paper.
3. Iron the wax paper "sandwich" on a low setting until the shavings melt, about 5 to 8 seconds.
4. Use the scissors to trim around the pumpkin. Then, tape a loop of string to the pumpkin stem. Hang your suncatcher in a sunny window to capture the sun's rays.

Plant a Play Clay Pumpkin Patch

What you'll need:

1 cup flour

1 cup water

$\frac{1}{2}$ cup salt

2 tsp. cream of tartar

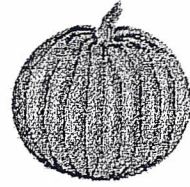
1 tbsp. cooking oil

Orange and green food coloring

What you do:

1. In a saucepan, mix dry ingredients. Add oil and water. Cook three minutes or until mixture pulls away from sides of the pan.
2. When the dough is cool enough to touch, divide it in half and knead immediately. Add orange to one half and green to the other.
3. Working over a sheet of wax paper, roll the orange dough into mini pumpkins or use a pumpkin cookie cutter.
4. Using the green dough, make stems and leaves.
5. Use green curling ribbon for the vines.
6. Use styrofoam trays to hold your pumpkin garden.

See How the Pumpkins Grow!



You'll Need:

- 2 orange paper plates (per student)
- construction paper
 - green, orange, yellow, brown
- yarn - brown or green (four 12-inch pieces per student)
- scissors
- stapler
- hole punch
- black markers
- patterns (attached)

Directions:

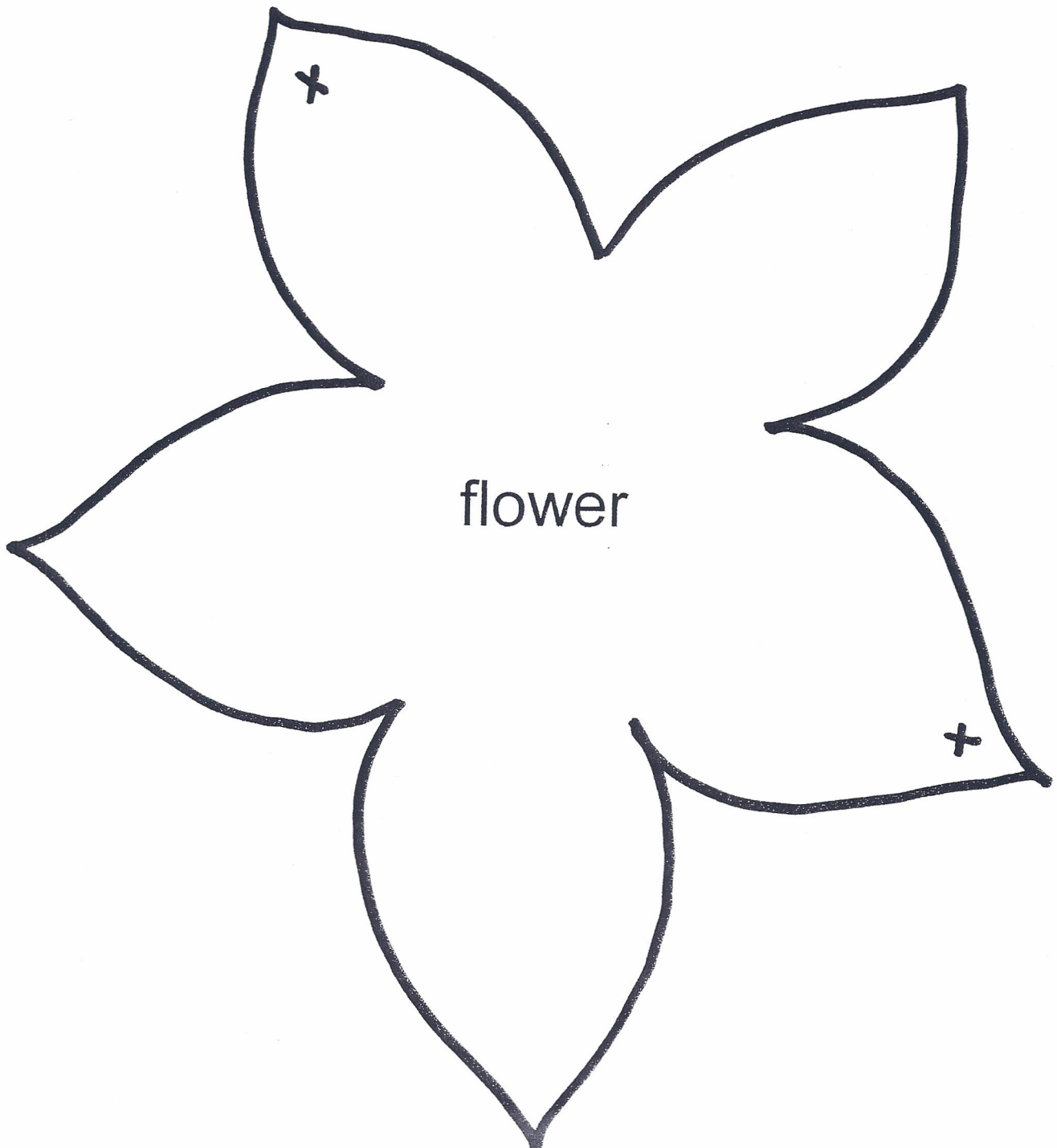
Before you begin the activity

1. Trace pattern pieces (for each student) onto the following colors of construction paper:
 - seed. . .brown
 - leaf. . .green
 - flower. . .yellow
 - immature fruit. . .green
 - maturing fruit. . .orange

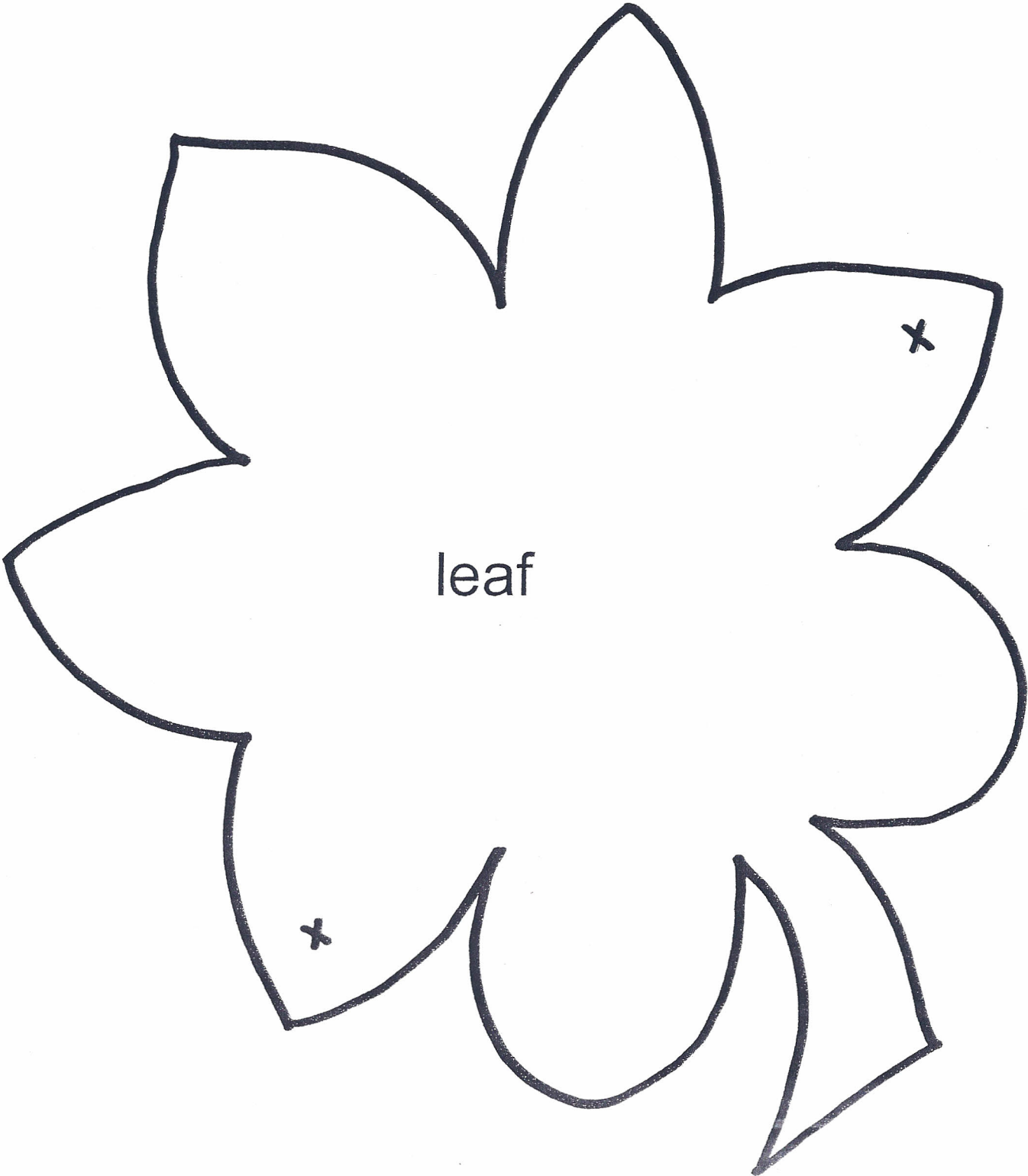
During the activity

2. Pass out to each student:
 - 1 of each of the pattern pieces
 - 2 orange paper plates
 - 4 - 12 inch pieces of yarn (green or brown)
3. Direct the students to cut out their pattern pieces
4. Demonstrate, then help students punch holes in opposite ends of each pattern piece they have cut out.
5. Connect the pattern pieces with yarn in the following order:
 - seed - leaf - flower - immature fruit - mature fruit
6. Staple the yarn from the mature fruit to the top side of one of the orange paper plates.
7. Connect the two paper plates (bottom side out) with staples along the edges, leaving room to slide the pattern pieces inside.
8. Use markers to decorate the paper plate pumpkin to resemble a jack-o-lantern.

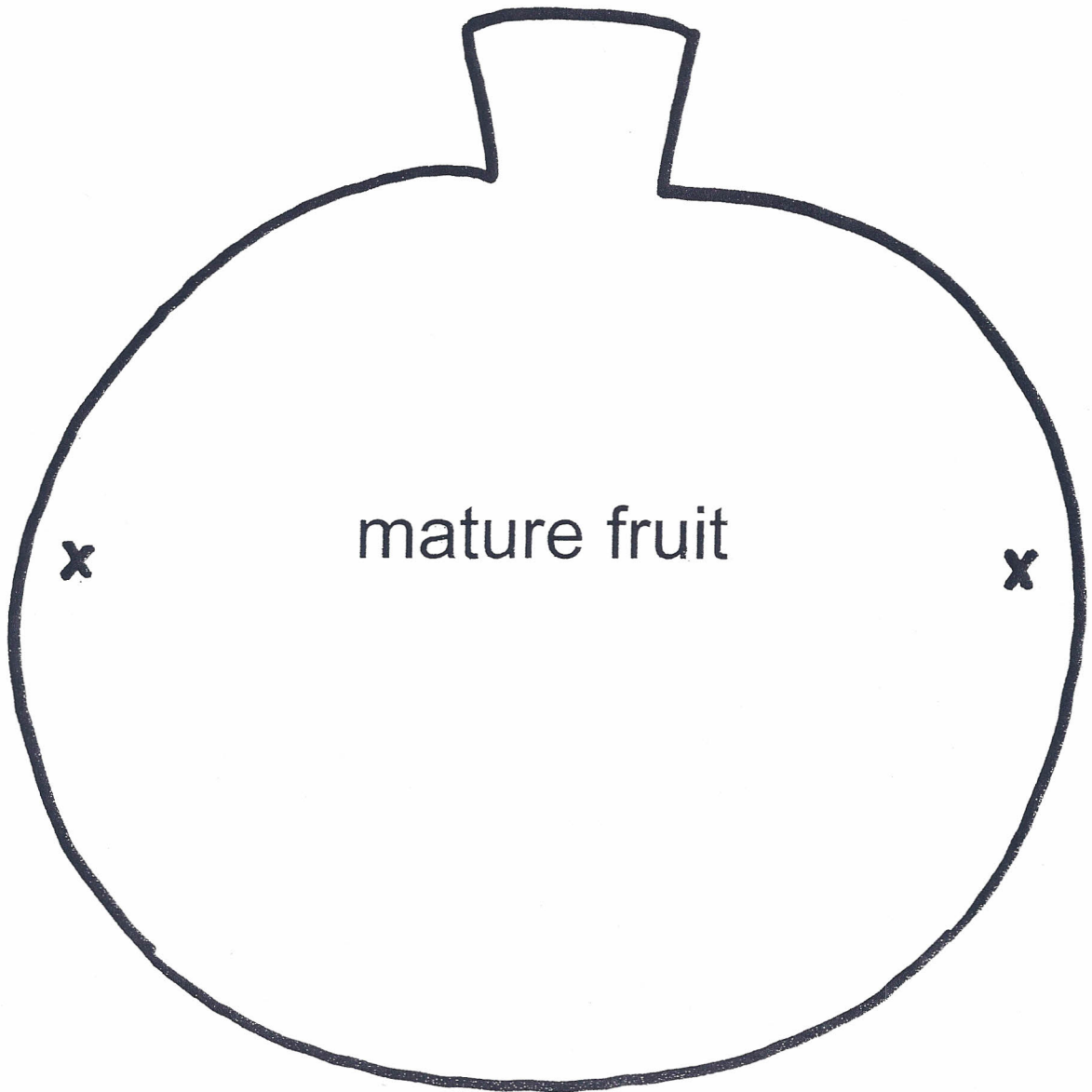
Pumpkin Cycle Pattern

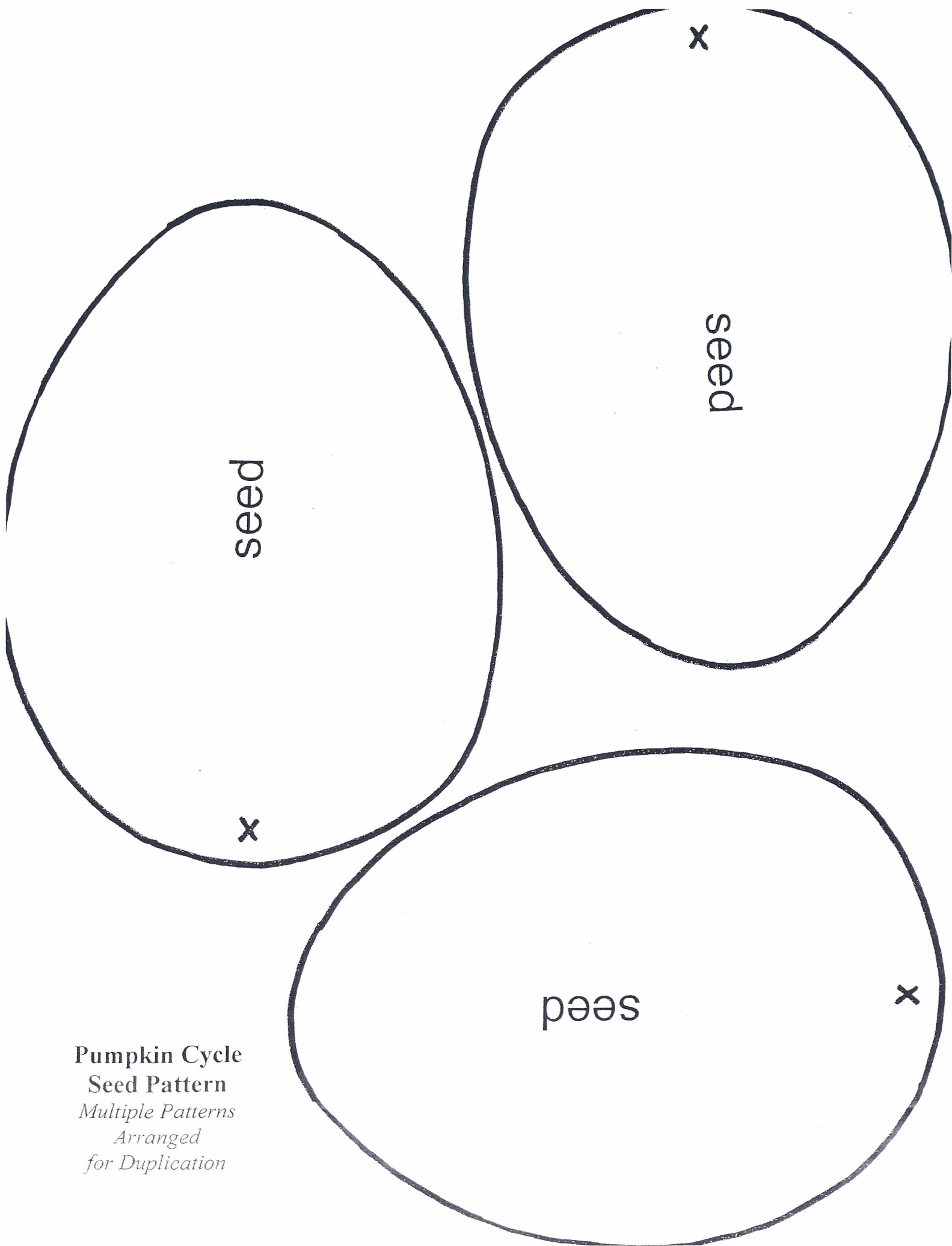


Pumpkin Cycle Pattern

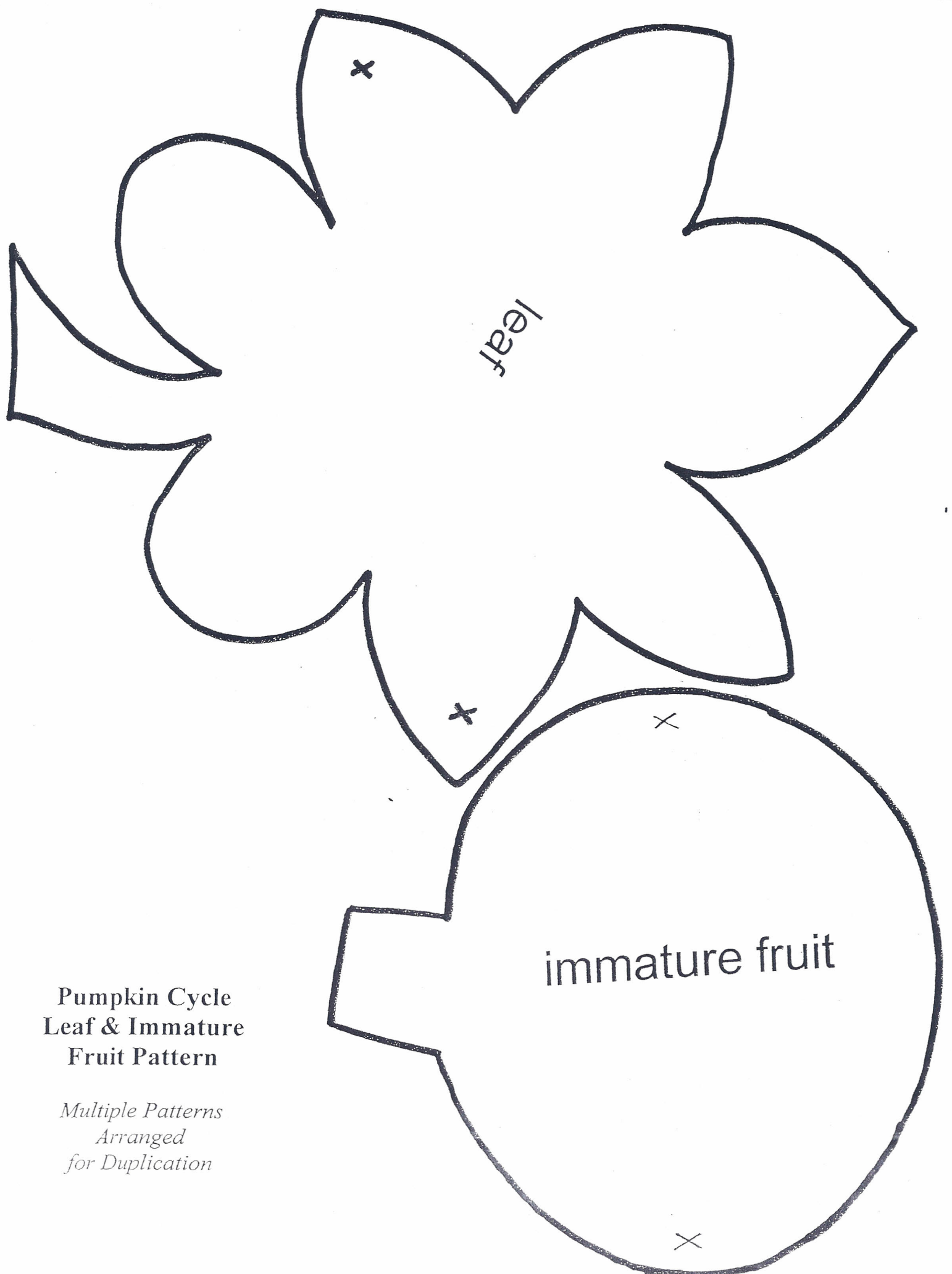


Pumpkin Cycle Pattern



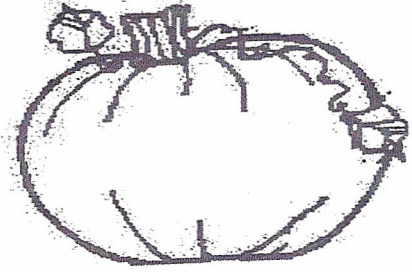


**Pumpkin Cycle
Seed Pattern**
*Multiple Patterns
Arranged
for Duplication*



**Pumpkin Cycle
Leaf & Immature
Fruit Pattern**

*Multiple Patterns
Arranged
for Duplication*



Pumpkin Facts

- Pumpkin seeds can be roasted as a snack.
- Pumpkins contain potassium and Vitamin A.
- Pumpkins are used for feed for animals.
- Pumpkin flowers are edible.
- Pumpkins are used to make soups, pies and breads.
- The largest pumpkin pie ever made was over five feet in diameter and weighed over 350 pounds. It used 80 pounds of cooked pumpkin, 36 pounds of sugar, 12 dozen eggs and took six hours to bake.
- Pumpkins are members of the vine crops family called cucurbits.
- Pumpkins originated in Central America.
- In early colonial times, pumpkins were used as an ingredient for the crust of pies, not the filling.
- Pumpkins were once recommended for removing freckles and curing snake bites.
- Pumpkins range in size from less than a pound to over 1,000 pounds.
- The largest pumpkin ever grown weighed 1,140 pounds.
- The name pumpkin originated from "pepon" – the Greek word for "large melon."
- The Connecticut field variety is the traditional American pumpkin.
- Pumpkins are 90 percent water.
- Pumpkins are fruit.
- Eighty percent of the pumpkin supply in the United States is available in October.
- In colonial times, Native Americans roasted long strips of pumpkin in an open fire.

***"Pumpkin"* in Other Languages**

Listed below are the translations of the word Pumpkin into other languages. Do you know one that isn't listed? Let us know.

Afrikaans	Pampoen
Czechoslovakia	Tykex or D`yn
Chinese (Mandarin)	Nangua
Denmark	Graeske
English	Pumpkin
Esperanto	Kukurbo
French	Potiron or Citrouille
German	Keurbis or Kurbis
Greek	PepOn
Holland (Dutch)	Pompoen
India (Hindi)	Kaddu
India (Marathi)	Lal Bhopala
Irish	Puimcin
Italian	Zucca
Japan	Kabocha
Latin	Cucurbita
Malaysia	Labu
Native American	Isquotersquash
Pakistan (Urdu)	Patha
Poland	Dynia
Portugal	Abobora
Russian	Tikba
Spanish	Calabaza
Sweden	Pumpa
Turkey	Kabak
Yugoslavia	Ludaja

PUMPKIN SCRAMBLE

Name: _____ Date: _____

Unscramble the letters to answer the question.

- | | | |
|-----|--|-----------|
| 1. | What is a pumpkin dessert? | epi |
| 2. | What do pumpkins grow on? | nisve |
| 3. | What is the color of a ripe school pumpkin? | rengo |
| 4. | What is the color of a Baby Boo pumpkin? | hewit |
| 5. | What is colorful corn? | nidani |
| 6. | What pollinates pumpkins? | ebes |
| 7. | What removes the cotton seeds from the lint? | ngi |
| 8. | What is a stuffed man? | ocresarcw |
| 9. | What is a pumpkin flower? | slomsob |
| 10. | What is inside a pumpkin? | deses |

Pumpkins by the Pound

Skills: Math, Science, Social Studies

Objective: Students will use pumpkins of various sizes to experiment with weight and perimeter.

Background

The pumpkin is a vegetable, but most pumpkins grown today are sold for decorating and carving. They come in all sizes and shapes, from minipumpkins, the size of apples, to giant ones, weighing over 200 pounds. Some pumpkins are gray or pale green, but most are yellow or orange. Some are even white.

Pumpkin flowers are large and yellow. Some kinds of pumpkins are grown for cattle to eat. Cucumbers, squash, melons and gourds are all related to the great pumpkin.

The pumpkin is one of only a few foods we still eat today that is native to North America. The Pilgrims and other early New England settlers liked to use pumpkins because uncut pumpkins would keep for several months, if stored in a cool, dry place. Pumpkins were a main part of the early settlers daily diet.

Pilgrims and other early American settlers made the first pumpkin pies by burying pumpkin in the ashes of their fires. After a pumpkin had cooked, they would cut off the top, scrape out the pulp and add honey or maple syrup. The pulp was then made into delicious pies and breads. Pumpkins were used for many different things. Dried pumpkin shells served as bowls or containers for storing grains and seeds. Pumpkin seeds were dried and roasted for a high-energy treat. The Pilgrims' dependence on pumpkins is reflected in this poem, from 1630. (Notice the Old English "undoon" for "undone.")

For pottage and puddings and custards and pies,
Our pumpkins and parsnips are common supplies,
We have pumpkins at morning and pumpkins at noon,
If it were not for pumpkins we should be undoon.

Language Arts

1. Read and discuss background and vocabulary.
2. Hand out copies of the reading page and worksheet B.
 - Students will read independently or in groups.
 - Students will answer the questions on the worksheet

Math

1. Bring several pumpkins to class in assorted sizes.
 - Set the pumpkins out in random order.
 - Introduce the terms "weight" (a measure of the heaviness of an object)

P.A.S.S.

GRADE 1

Reading—2.1; 5.1

Math Process—1.1,2,3,5;
2.3,4; 3.2,3; 4.1,3; 5.1,2

Math Concept—2.1,2a,4;
5.1,2

Science Process—1.1;
2.1,2; 4.1,3

Physical Science—1.1,2

Social Studies—2.3

Physical Education—
1.1,3,4; 2.2,3; 3.1,2;
5.1,3,4; 6.1,2,3; 7.1,3

GRADE 2

Reading—4.1; 6.3

Math Process—1.1,2,3,5;
2.3,4; 3.2,3; 4.1,3; 5.1,2

Math Concept—2.1a,3;
4.2ab; 5.1,2

Science Process—1.1,2;
2.1,2; 4.1,3

Social Studies—2.4

Physical Education—
1.1,2; 2.1,3; 3.1; 5.2,3;
6.1,2; 7.2

GRADE 3

Reading—4.4; 5.3

Math Process—1.1,2,3,5;
2.3,4; 3.2,3; 4.1,3; 5.1,2

Math Concept—2.1a; 4.3;
5.1abc

Social Studies—2.2,3,4

Physical Education—1.1;
2.1; 3.3; 5.1,2,3; 6.2

Materials

pumpkins in assorted sizes

string

scale

tape measure

1 large knife

(for each group)

1 pumpkin

3 sheets construction paper

tape

10 small cups (muffin cup,
bathroom cup, or nut cup)

2 large styrofoam cups

Roasted Pumpkin

Seeds

1. Wash pumpkin seeds.
2. Place seeds in a vegetable steamer with some water.
3. Cover and cook for 30 minutes.
4. Dry the seeds with a towel.
5. Spread seeds on a cookie sheet, brush with vegetable oil and sprinkle with salt.
6. Bake the seeds in a preheated 300-degree oven for 30 minutes, or until golden.

and “perimeter” (the measure of the whole outer boundary of a body or figure).

- Students will lift the pumpkins one by one and estimate their weights.
 - Students will arrange the pumpkins according to their weights—from lightest to heaviest.
2. Pass out student worksheet B.
 - Students will weigh the pumpkins and record their findings in pounds and kilograms.
 3. Students will estimate the perimeter of each pumpkin by cutting lengths of string they think will reach around the pumpkin.
 - Students will measure the pumpkins with a tape measure.
 - Create a chalkboard graph with the words “too long,” “too short,” “same.”
 - Students will tape the string estimates in the correct space on the chalkboard graph.
 - Discuss the graph. Ask how many pieces of yarn were too long? Too short? The same? Most estimates were_____
 - Students will draw a model of the graph in a journal or on a separate sheet of paper
 4. Introduce the abbreviation for pounds (“lbs.”) and the pound symbol (“#”).
 5. Students will estimate the number of seeds in a pumpkin.
 - Divide class members into groups of four or five students.
 - Provide one pumpkin for each group. Allow students to handle the pumpkins.
 - Review the term “estimate.”
 - Each group will estimate the number of seeds in their pumpkin.
 - Write the group estimates on the chalkboard.
 - Hand out three sheets of construction paper.
 - Groups will tape the construction paper together in a row to create place value boards.
 - One member of each group will write the place value terms:
 - “ones” across the top of the first sheet of construction paper,
 - “tens” across the top of the second sheet
 - “hundreds” across the top of the third sheet.
 - Cut the top from each pumpkin.
 - Give each group 10 small cups and two large styrofoam cups. Keep extra containers handy in case any of the pumpkins have unusually large numbers of seeds.
 - Students scoop the seeds from the pumpkins with their hands and place them on the construction paper labeled “ones.”
 - Students count the seeds into groups of ten and place them in the small cups.
 - Students place the filled cups on the construction paper labeled “tens.”
 - When students have counted ten groups of ten they dump those cups into the larger cups and place them on the construction paper labeled “hundreds.”
 - Continue the activity until all the seeds have been counted.

- Students will write and read the exact number of seeds in their pumpkins.
- Students compare exact numbers with estimates.

Science

1. Students will guess whether the pumpkins will sink or float. Test guesses in a tub of water.
2. Use the recipe included with this lesson to make pumpkin pie in a bag.
 - Students will describe the pie ingredients before baking.
 - Ask students to write what they think will happen after the ingredients are baked.
 - Students will describe ingredients after they are baked.

Social Studies

1. Use pumpkins as globes to represent the Earth.
 - Students will draw latitude and longitude lines on their pumpkins at 10 degree increments.
 - Students will find north, south, east and west hemispheres.
 - Students will paint continents on their pumpkins with tempera paint.
 - After the continents have dried, students will paint bodies of water.

Visual Arts

1. Make pumpkin seed art.
 - Bake clean seeds in a 300-degree oven for 30 minutes, or until golden.
 - Let the seeds cool completely.
 - Provide students with tempera paint in autumn colors, and have them dip the pumpkin seeds in the paint.
 - Let the seeds dry.
 - Students draw tree trunks with branches and glue seeds to the branches to make beautiful full trees.
4. Students draw Jack-o-lanterns, color them and use different kinds of seeds to make their features.

Get Up and Move

1. Play Pumpkin Man:
 - Teach the following chant:

Pumpkin man, pumpkin man, catch a brownie if you can,
Yes I will, Yes I will, if the brownie will stand still.
 - Divide students into two groups—a Pumpkin group and a Brownie group.
 - Students form a circle, facing inward.
 - Pumpkins step forward and put their palms together to make "windows." (Don't weave fingers.)
 - Brownies go in and out of the windows at least twice as everyone says the chant.
 - When teacher says "stop," Pumpkins lower the "windows." All Brownies inside the circle become Pumpkins and join the Pumpkin circle.
 - Play twice so everyone who started as a Pumpkin gets to be a Brownie.

Vocabulary

carve—to cut with care or exactness
decorate—to make more attractive by adding something that is beautiful or becoming
gourd—any of a family of tendril-bearing vines (as the cucumber, melon, squash, and pumpkin)
Pilgrim—one of the English colonists who founded the first permanent settlement in New England at Plymouth in 1620
pulp— the soft juicy or fleshy part of a fruit or vegetable
pumpkin—the usually round orange fruit of a vine of the gourd family widely used as food
settler—a person who settles in a new region
vegetable—a leafy plant (as the cabbage, bean, or potato) usually without woody tissue grown for an edible part that is usually eaten as part of a meal

Extra Reading

Gillis, Jennifer, *In a Pumpkin Shell: Over 20 Pumpkin Projects for Kids*, Storey, 1992.
 King, Elizabeth, *Pumpkin Patch*, Dutton 1990.

Pumpkins by the Pound

The pumpkin is a vegetable, but most pumpkins grown today are sold for decorating and carving. They come in all sizes and shapes, from minipumpkins, the size of apples, to giant ones, weighing over 200 pounds. Some pumpkins are gray or pale green, but most are yellow or orange. Some are even white.

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The pumpkin is one of only a few foods we still eat today that is native to North America. The Pilgrims and other early New England settlers liked to use pumpkins because uncut pumpkins would keep for several months, if stored in a cool, dry place. Pumpkins were a main part of the early settlers daily diet.

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For pottage and puddings and custards and pies,
Our pumpkins and parsnips are common supplies,
We have pumpkins at morning and pumpkins at noon,
If it were not for pumpkins we should be undoon.

Name _____

Pumpkins by the Pound

A

Write F for fact if the statement is a fact. Write O for opinions if the statement is an opinion.

1. ___ Pumpkins taste great!
2. ___ Pumpkins were eaten by pilgrims.
3. ___ Pumpkins are vegetables.
4. ___ Pumpkin pie is my favorite kind of pie.
5. ___ Pumpkin seeds can be dried and roasted.
6. ___ Pumpkin flowers are large and yellow.

7. Write a fact about pumpkins: _____

8. Write an opinion about pumpkins or pumpkin pie.

9. In the poem, the words at the end of lines 1 and 2 are pies and supplies. What do we call that sound pattern? Circle the correct answer.

rhythm rhyme syllables

10. Write as many words as you can that rhyme with the word "pie."

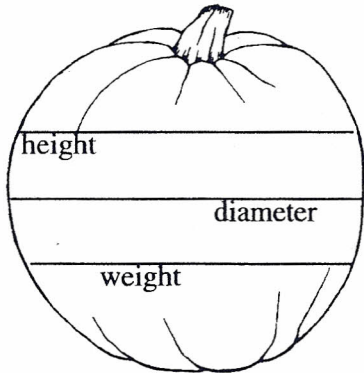
Name _____

Pumpkins by the Pound

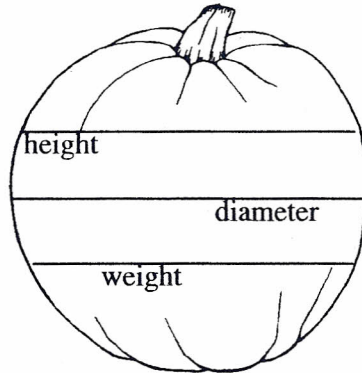
B

Measure and weigh several pumpkins. Record the facts below.

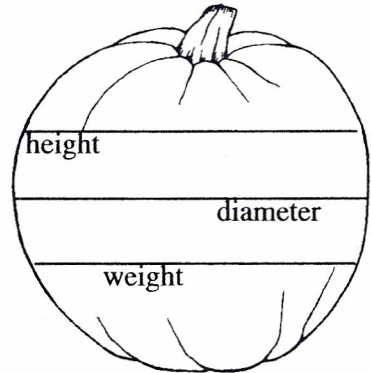
1.



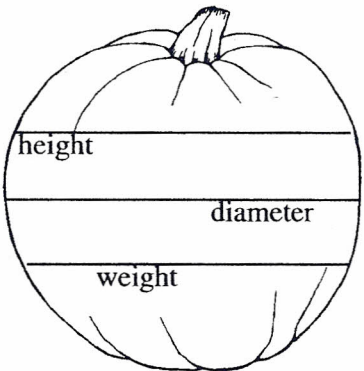
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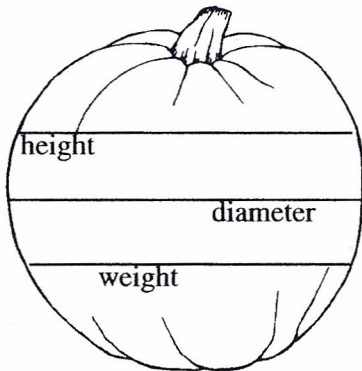
3.



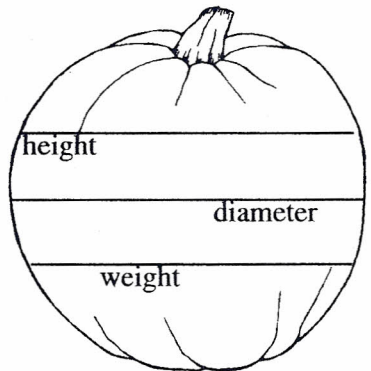
4.



5.



6.



1. Which pumpkin is biggest? _____
2. Which pumpkin weighs the most? _____
3. Does the biggest pumpkin weigh the most? _____
4. Does the smallest pumpkin weigh the least? _____
5. Which two pumpkins are closest in size? _____
6. Which two pumpkins are closest in weight? _____

EASY AS PUMPKIN PIE

1

SUBJECTS: Mathematics

STUDENT SKILL: The student will use manipulatives, models, known facts, properties and relationships to explain thinking processes.

OBJECTIVE: The student will demonstrate place values, using pumpkin seeds as a math manipulative

BACKGROUND

Pilgrims and other early American settlers made the first pumpkin pies by burying pumpkin in the ashes of their fires. After a pumpkin had cooked, they would cut off the top, scrape out the pulp and add honey or maple syrup. The pulp was then made into delicious pies and breads. Pumpkins were used for many different things. Dried pumpkin shells served as bowls or containers for storing grains and seeds. Pumpkin seeds were dried and roasted for a high-energy treat.

ACTIVITY

1. Divide class members into groups of four or five students. Provide one pumpkin for each group. Allow students to handle the pumpkins, and have them use their senses to write the words that describe the pumpkins.
2. Review the term "estimate." Ask each group to estimate the number of seeds in their pumpkin. Write the group estimates on the board.
3. Hand out three sheets of construction paper, and instruct the groups to tape them together in a row to create place value boards. Have one member of each group write the place value terms — "ones" across the top of the first sheet of construction paper, "tens" across the top of the second sheet and "hundreds" across the top of the third sheet.
4. Cut the top from each pumpkin. Give each group 10 small cups (paper muffin cup, bathroom cups, nut cups) and two large styrofoam cups. Keep extra containers handy in case any of the pumpkins have unusually large numbers of seeds.
5. Have students scoop the seeds from the pumpkins with their hands and place them on the construction paper labeled "ones."

MATERIALS

1 large knife

(for each group)

1 pumpkin

3 sheets
construction paper

tape

10 small cups
(muffin cup,
bathroom cup, or
nut cup)

2 large styrofoam
cups



6. Have students count the seeds into groups of ten, place them in the small cups and place the filled cups on the construction paper labeled "tens." When students have counted ten groups of ten they should dump those cups into the larger cups and place them on the construction paper labeled "hundreds."
7. Have students continue the activity until all the seeds have been counted. Then have them write and read the exact number of seeds in their pumpkins. Have students compare the exact numbers with their estimates.

ADDITIONAL ACTIVITIES

1. Roast pumpkin seeds. Wash them, and place them in a vegetable steamer with some water. Cover and cook for 30 minutes. Dry the seeds with a towel. Spread them out on a cookie sheet, brush with vegetable oil and sprinkle with salt. Bake the seeds in a preheated 300-degree oven for 30 minutes, or until golden. Serve them to students as a snack.
2. Save some of the pumpkin seeds in a jar or envelope to plant in the spring. Have students plant the seeds in paper cups and chart the growth of the plants. Let students take the seedlings home to plant them outdoors at the end of the school year. Pumpkins grow to maturity in about 100 to 120 days depending on the variety.
3. Make pumpkin seed art. Bake clean seeds in a 300-degree oven for 30 minutes, or until golden. Let the seeds cool completely. Provide students with tempera paint in autumn colors, and have them dip the pumpkin seeds in the paint. Let the seeds dry. Have students draw tree trunks with branches and glue seeds to the branches to make beautiful full trees.
4. Make pumpkin seed jewelry. Have students string the seeds with needle and thread while they are wet. Hang the strands to let them dry. After they have dried, provide students with tempera paint and have them dip the strands in the paint and hand to dry again. Advise your students that the paint will rub off and the seeds will become sticky in damp weather.
5. Have students draw Jack-o-lanterns, color them and use different kinds of seeds to make their features

VOCABULARY

Pilgrims

pumpkin

settler

pulp

Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, 4-H Youth Development, in cooperation with the Oklahoma Department of Agriculture and the Oklahoma State Department of Education.

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<http://www.agclassroom.org/ok>



EXTRA READING

Gillis, Jennifer, *In a Pumpkin Shell: Over 20 Pumpkin Projects for Kids*, Storey, 1992.

EVALUATION

Were the students able to understand the place value concept?

Did any group's estimate come close to the actual number?

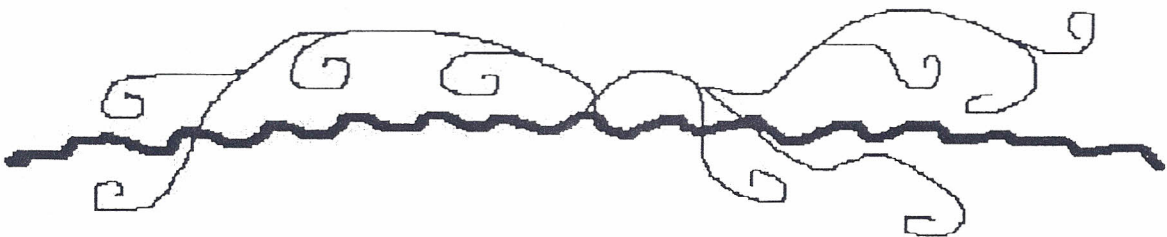
3

This is the seed the farmer planted.

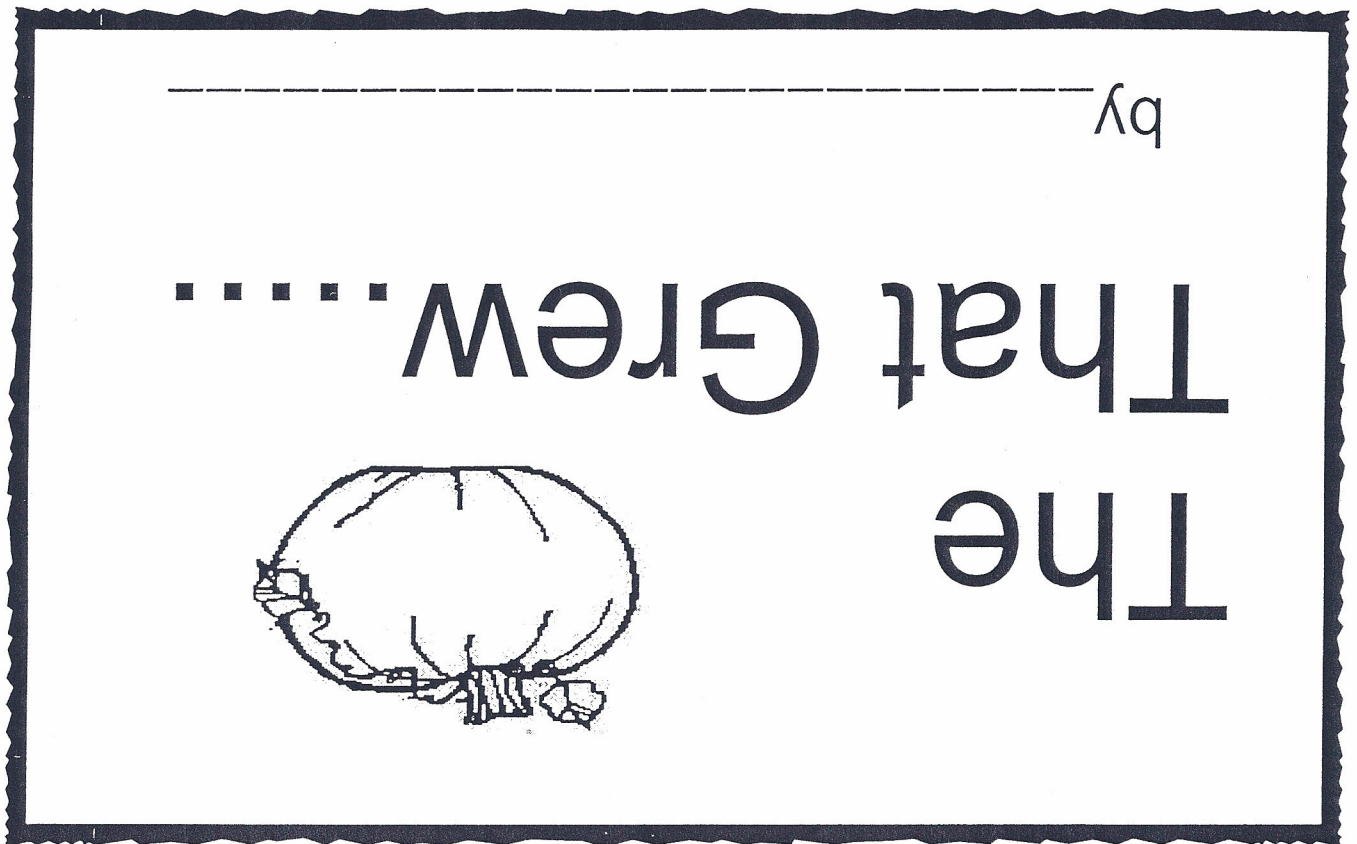


The Seed

The Vine



This is the vine that grew from the seed the farmer planted.



The Pumpkin That Grew

student booklet

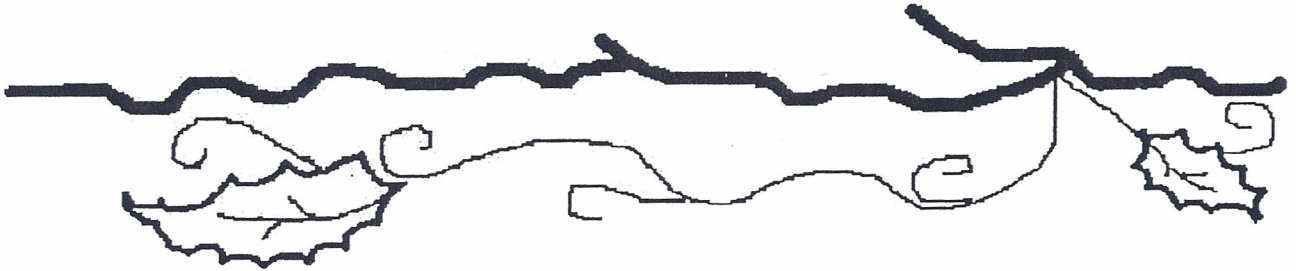
page 1 - glue on a pumpkin seed.

page 2 - glue on a piece of green curly christmas ribbon.

page 3 - glue on a yellow tissue paper flower.

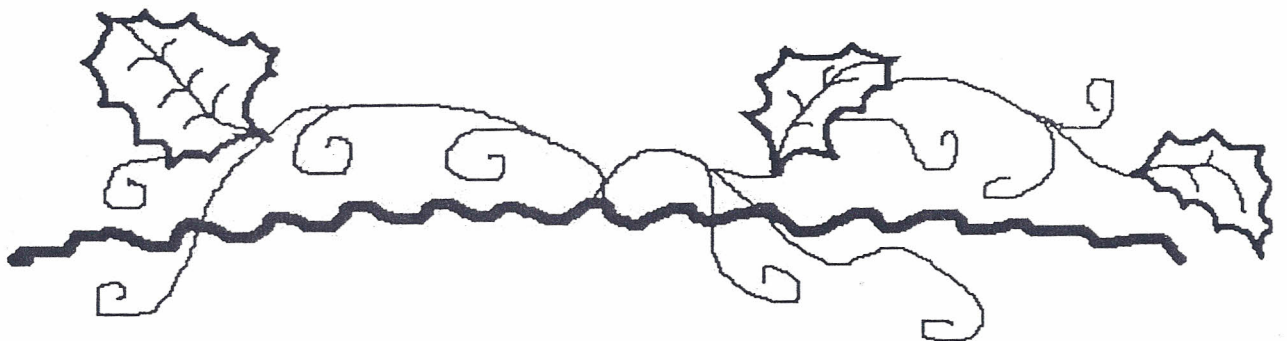
page 4 - glue on an orange pumpkin.

This is the pumpkin that grew from the flower that grew on the vine that grew from the seed the farmer planted.



The Pumpkin

The Flower



This the flower that grew on the vine that grew from the seed the farmer planted.