

TEACHER MATERIALS - Peanuts and Peanut Butter

CONCEPTS: Math, Science, and Technology
-Standard 4.4- Living Environment
Career Development
-Standard 3a.1- Basic Skills
Personal Health and Fitness
-Standard 1.1- Health Education

- OBJECTIVES:**
1. Students will be able to label the parts of the peanut plant as previously identified on another plant.
 2. Students will be able to describe that a peanut is not a nut but actually the fruit of the plant which has developed underground.
 3. The students will make peanut butter and peanut butter fudge.
 4. The students will make a snack of peanut butter and celery.
 5. The students will complete Language Arts activities on peanuts.

BACKGROUND: Peanuts are a very nutritious food. However, they are actually not a nut at all. The peanut flower, when fertilized, grows 'pegs' which grow into the ground and fruit. The peanut vine is actually more like a pea than a nut. It is a legume like peas or beans. A peanut is very similar to a bean or pea seed. The peanut shell is similar to a pea pod.

After completing the three preceding units (parts of the plant, seeds, and roots) this lesson is an interesting comparison. It is not intended to confuse but merely demonstrate that real life is not always "by-the-book."

- ACTIVITIES:**
1. Have the students read pages 12 and 13 in "The Source."
 2. Have the students label the diagram from their own knowledge base and the booklet information or produce a model using clay or paste real peanuts onto the diagram.
 3. Have the students complete the sequencing worksheet "Growing Peanuts."
 4. Have the students complete the worksheet "From Peanuts to Peanut Butter" in conjunction with "Making Peanut Butter."
 5. Using unshelled roasted peanuts, have the students make peanut butter. Have the students shell the peanuts to obtain one cup of peanuts. Then follow the enclosed recipe. The level of oil in the peanuts can vary (adjust the amount added as needed).
 6. Make a snack of celery and peanut butter. Follow this lesson with the Science lesson on celery.
 7. Have the children make "Peanut Butter Fudge" following the recipe.
 8. Have the students complete the Language Arts activities "From a Peanut" and "Word Find."
 9. March is National Peanut month. Perhaps scheduling this lesson at that time is appropriate.

Information - Peanuts

Peanuts were grown by ancient civilizations of South America at least 2,000 years ago. Peanuts, though native to South America, have been consumed as food for centuries in other places as far away from their origin as China and Africa. European explorers and traders returning from South American voyages brought peanuts with them to their homelands of Spain and Portugal. Traders from these countries then took peanuts grown in Europe to North Africa as trade for spices and elephant tusks. Later peanuts were carried aboard slave ships sailing from Africa to North America as food for the slaves on the long voyages across the Atlantic Ocean. The word goober comes from the Congo word for peanut—*nguba*.

In the early 1800's, little attention was given to the peanut. However, during the Civil War, troops of the Southern Confederacy were often without food. That's when the peanut became a very important staple. Union soldiers came to appreciate peanuts too and carried home with them a taste for the Confederate's "Goober Peas." At least one Civil War song - "Eatin' Goober Peas" - was inspired by peanuts being roasted over the campfire.

The first commercial use of peanuts was on the farm for feeding farm animals. Peanuts were introduced as a snack food in the New York City area about 1870. They were sold roasted in the shell by street vendors. As the famous Barnum Circus made its way across the country, it was accompanied not only by its animal and high wire acts but by peanut vendors, too.

Baseball stadiums began to sell peanuts by the bagful. Once, a baseball club owner threatened to bar peanuts from his park because it cost too much to sweep out the hulls. The fans protested so loudly and energetically that the owner not only stopped the order but gave peanuts away free at the opening game of the next season! Early in the twentieth century, a Tuskegee Institute teacher and botanist,

George Washington Carver warned the people of the South about the cotton boll weevil and urged farmers to seek an alternative crop to cotton. He suggested peanuts, not only as a source of income in place of cotton but for enriching the soil. When the cotton crops were wiped out by the boll weevil, farmers began growing peanuts as a new source of revenue. Dr. Carver's plan had worked—he developed over 300 uses for the peanut.

The peanut is an unusual plant because it flowers above the ground but bears its fruit below the ground. Some misconceptions about the peanut plant are that the peanuts grow on trees like walnuts and pecans or that the peanuts grow like potatoes.

Peanuts are ranked by the U.S. Department of Agriculture as one of the six basic U.S. farm crops. Nine states grow almost the entire U.S. peanut crop. They are Georgia (which grows about 39 percent of all U.S. peanuts), followed by Texas, Alabama, North Carolina, Virginia, Oklahoma, Florida, South Carolina, and New Mexico. These states are grouped into three regions. The Georgia-Florida-Alabama region (southeastern) grows mostly the medium-kernelled runner peanuts. The southwest region (Texas and Oklahoma) grows 55 percent Spanish and 42 percent runner. The Virginia-Carolina area (Virginia, North Carolina, and South Carolina) grows mostly the large-kernelled Virginia peanut. New Mexico grows the Valencia peanut which has three to four kernels in each shell. About 55 percent of all U.S. peanuts are grown in the southeast, with the southwest accounting for 30 percent and Virginia-Carolina producing 14 percent. *

The growing season for the farmer begins in March when he/she prepares the field for planting. First, the fields are fertilized. Fertilizer (phosphorous and potassium plus trace elements) helps the peanuts grow larger and more plentiful. Second, the fields are plowed to prepare for planting followed by finer cultivations to break up the soil. The peanut seeds are planted in May.

Throughout the growing season, the peanuts are cultivated (to get rid of weeds), sprayed for insects and diseases (to prevent plant injury, crop loss, and increase yield), and irrigated. Irrigation takes place during dry periods (drought). Harvesting begins in September. The peanuts are dug from the ground

*Based on data collected in 2003.

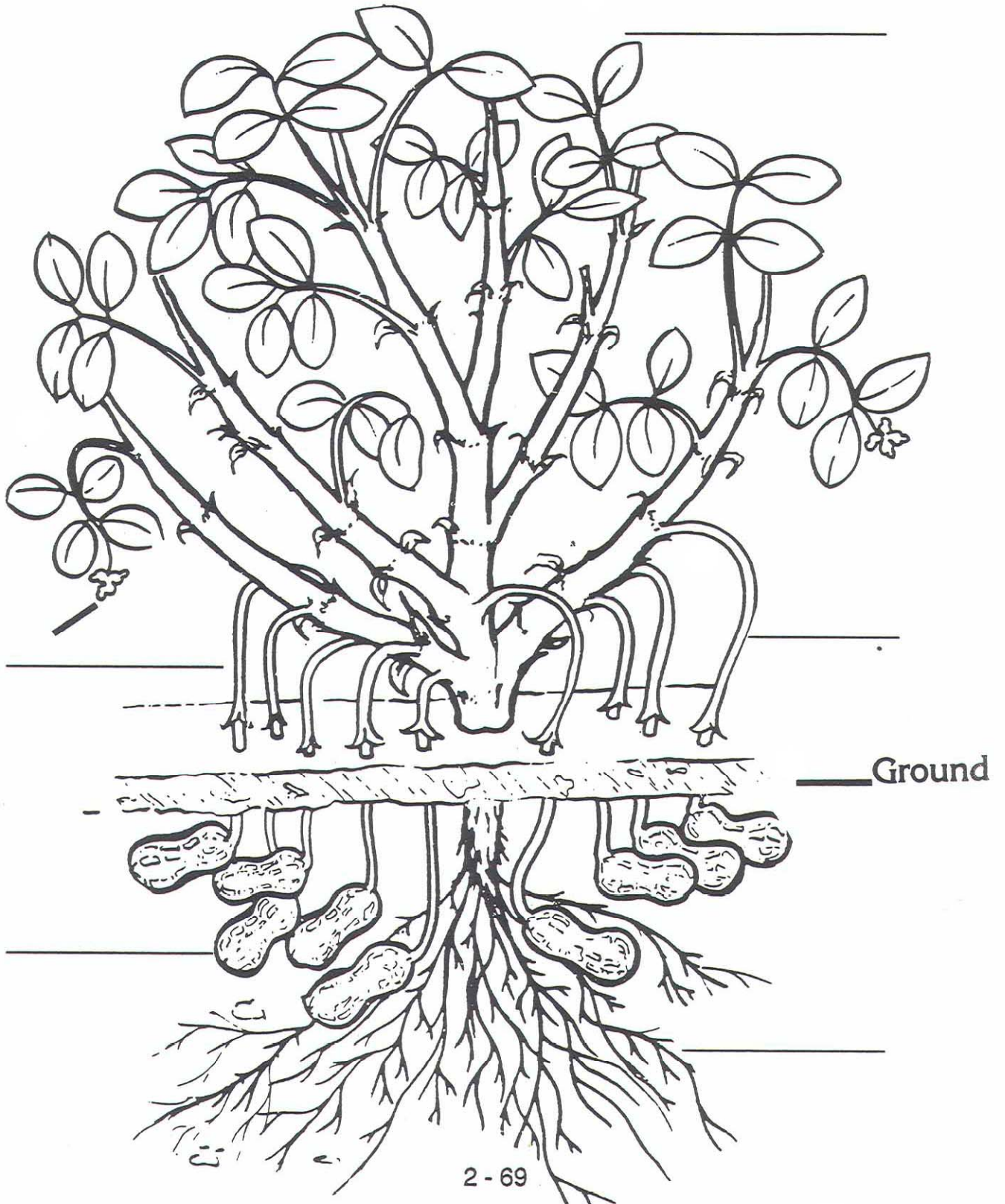
and turned over to dry in the fields. The peanuts dry for several days. A combine picks up the rows of peanuts and removes the peanuts (in their shells) from the vines. The combine dumps the peanuts into drying trailers. The peanuts are dried further and hauled to a buying station or shelling plant to be sold.

Once the peanuts are all harvested, the farmer bales the vines to be used for animal feed (like hay) or plows the vines back into the soil. The vines plowed back into the soil act as fertilizer for next year's crop.

Name _____

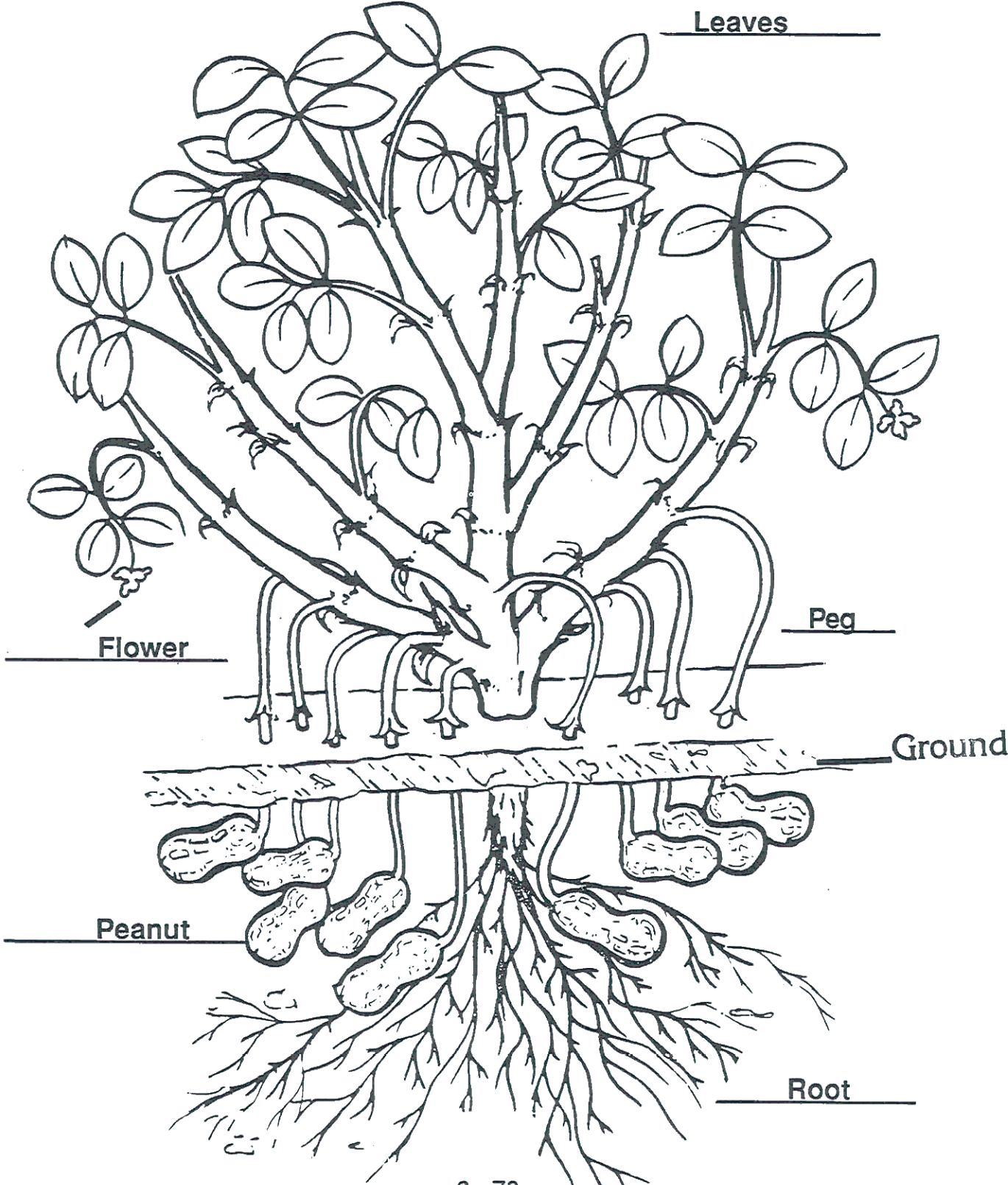
The Peanut Plant

Label the parts of the peanut plant.



The Peanut Plant

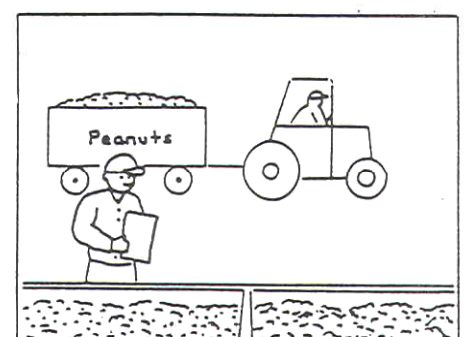
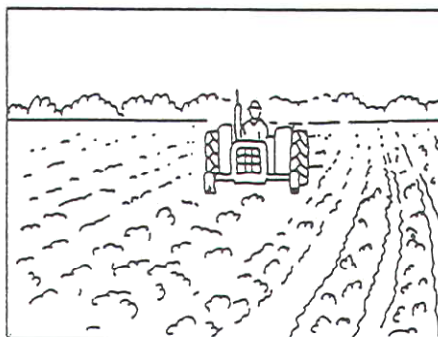
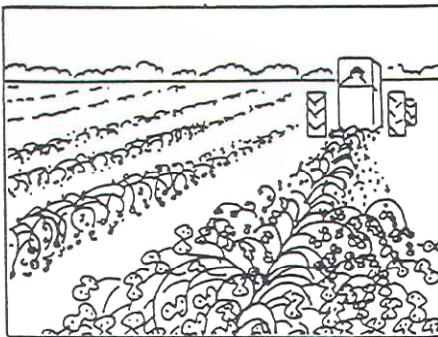
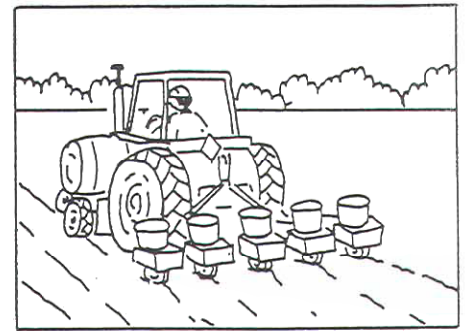
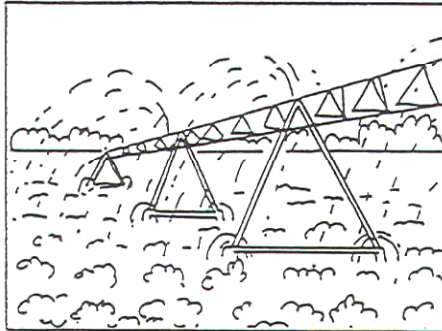
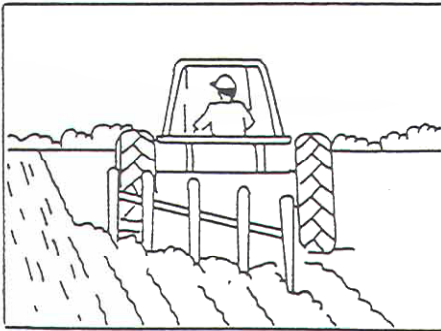
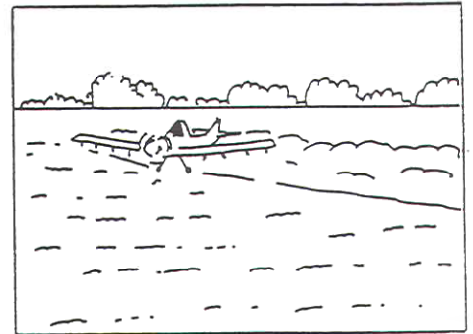
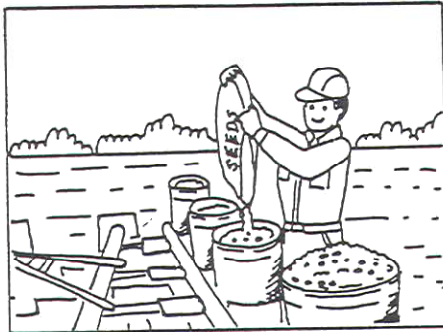
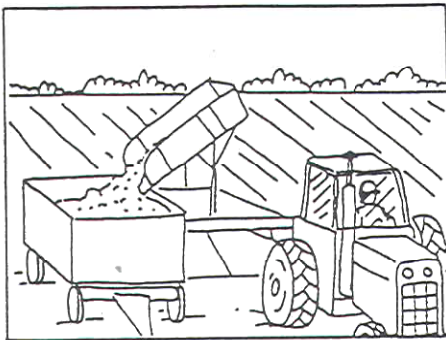
Label the parts of the peanut plant.



Name _____

Growing Peanuts

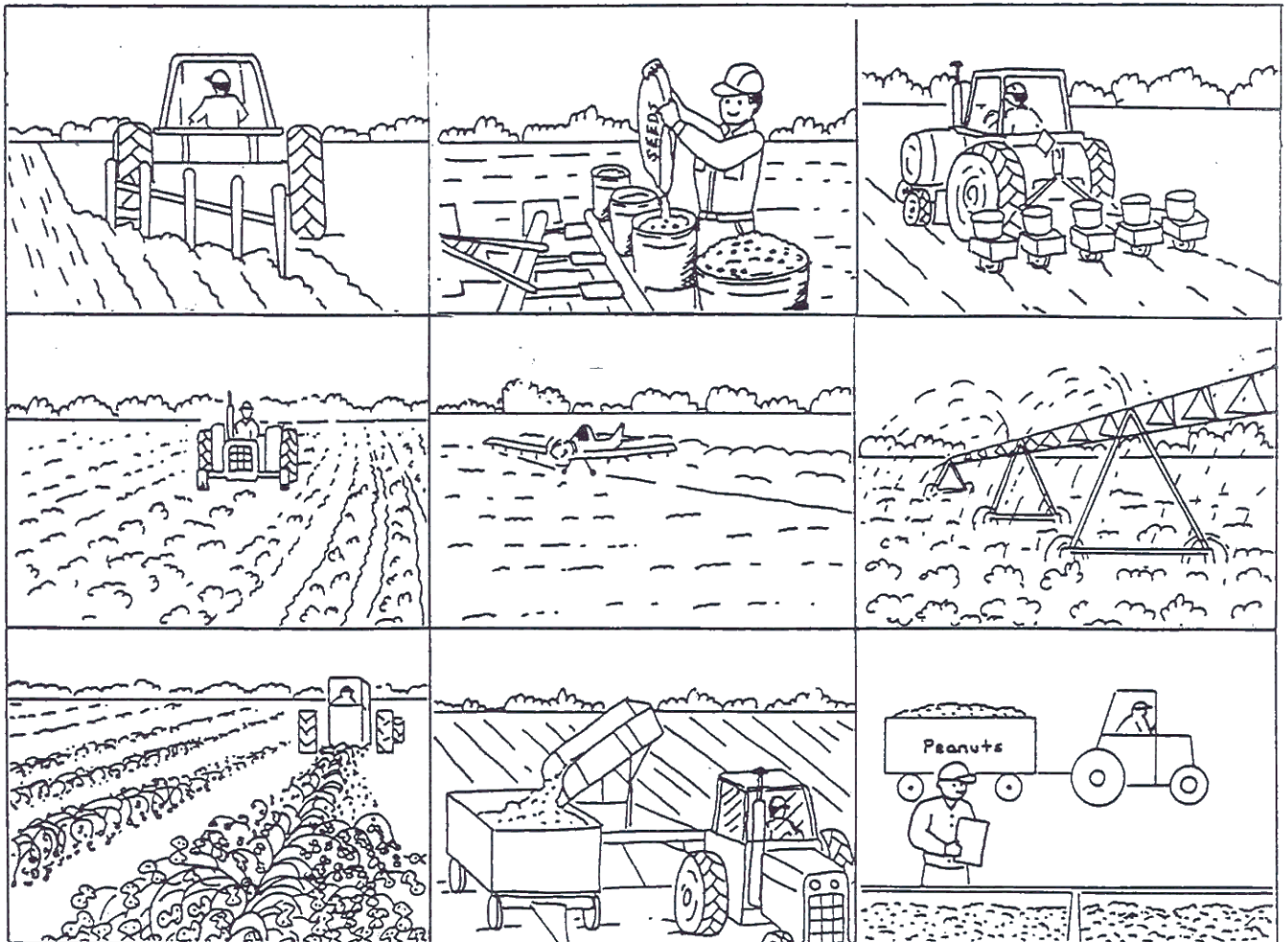
Growing peanuts begins in March. The farmer plows the field after fertilizing it. The farmer then fills the planter with seed and plants them. Once the peanuts are growing, the farmer cultivates the rows to kill weeds, sprays to kill insects and disease, and waters the crop. In September, the peanuts are pulled out of the ground, combined, and dumped into wagons. The peanuts are dried and sold. Cut out these pictures and put them into the correct order.



Name _____ Answer Key _____

Growing Peanuts

Growing peanuts begins in March. The farmer plows the field after fertilizing it. The farmer then fills the planter with seed and plants them. Once the peanuts are growing, the farmer cultivates the rows to kill weeds, sprays to kill insects and disease, and waters the crop. In September, the peanuts are pulled out of the ground, combined, and dumped into wagons. The peanuts are dried and sold. Cut out these pictures and put them into the correct order.



Information - Peanut Butter

Peanut butter began as a health food. A St. Louis, Missouri, physician was the first to make peanut butter in 1890. He used it as a food for the elderly because it was easy to digest. In 1903, the first peanut butter machine was patented. Today, over 600 million pounds of peanut butter are consumed in the United States, or three pounds per person each year.

Peanuts and peanut products are very nutritious. They provide a child with protein for body growth and maintenance. Peanuts and peanut butter are at least 26 percent protein, and an economical protein, as well.

The average American consumes about nine pounds of peanuts a year--mainly in the form of peanut butter, roasted peanuts, and confections.

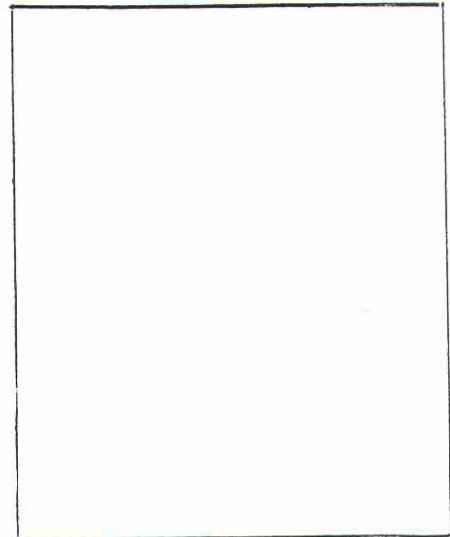
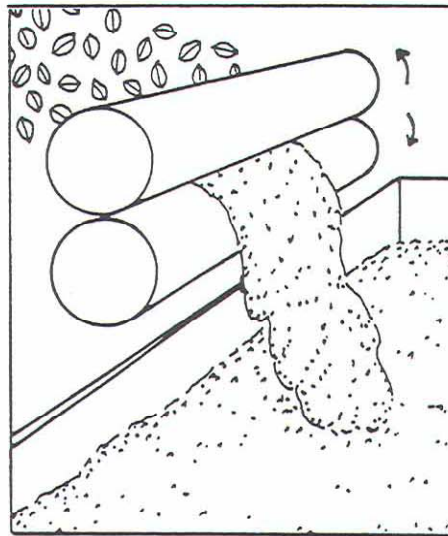
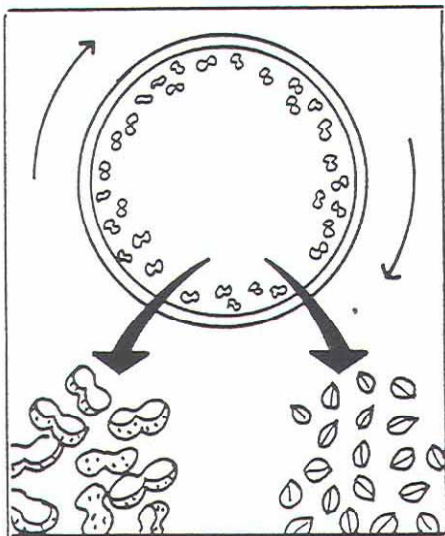
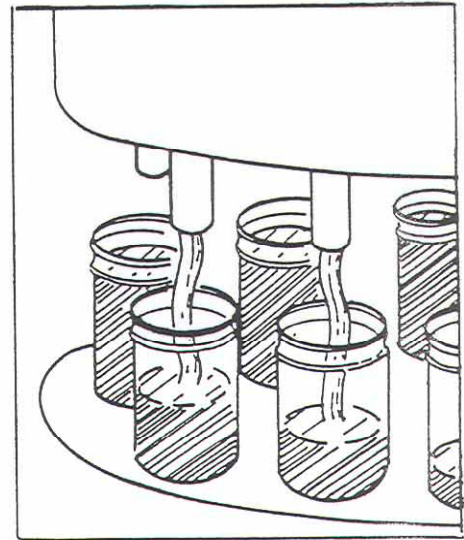
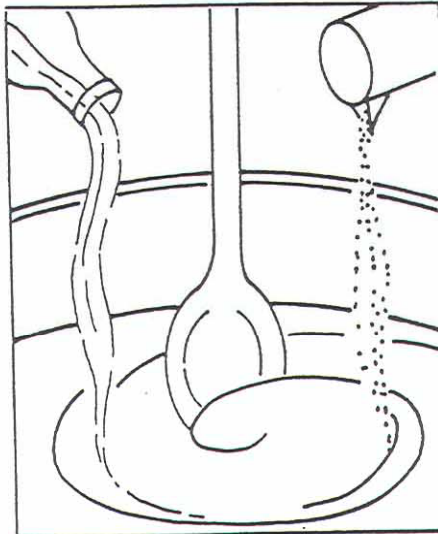
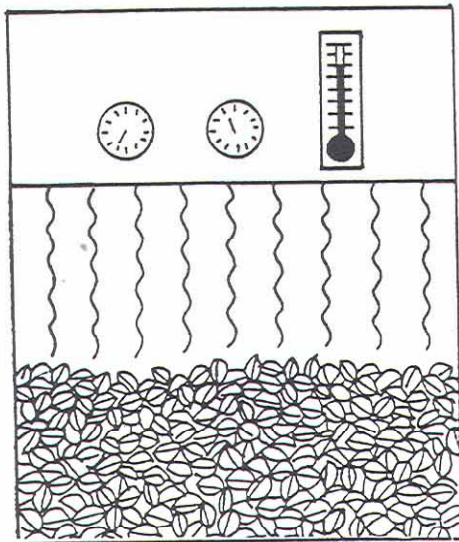
Peanuts go through many stages to become peanut butter. First, the peanuts are shelled. The shelled peanuts are then roasted. Roasting gives the peanut their crunch and makes them easier to digest. The roasted peanuts are then blanched to remove their skins. Once blanched, the peanuts are ground up. As they are being ground up, oil begins to separate from the peanut. More oil, sugar, salt, and an emulsifier (to keep the mixture from separating) are added and mixed. The mixture is heated. Heating and mixing turns the mixture into a liquid. The hot liquid is poured into jars and sealed. It is now peanut butter!

Name _____

From Peanuts to Peanut Butter

These pictures show the steps to make peanut butter. They are in the wrong order. The steps are (1) shelling the peanuts, (2) roasting the shelled peanuts, (3) grinding, (4) mixing in oil, sugar, and salt and then heating, (5) pouring into jars.

Cut out these pictures and past them in correct order on your own paper to show how peanut butter is made. Use the blank square last and draw in your favorite food made with peanut butter.

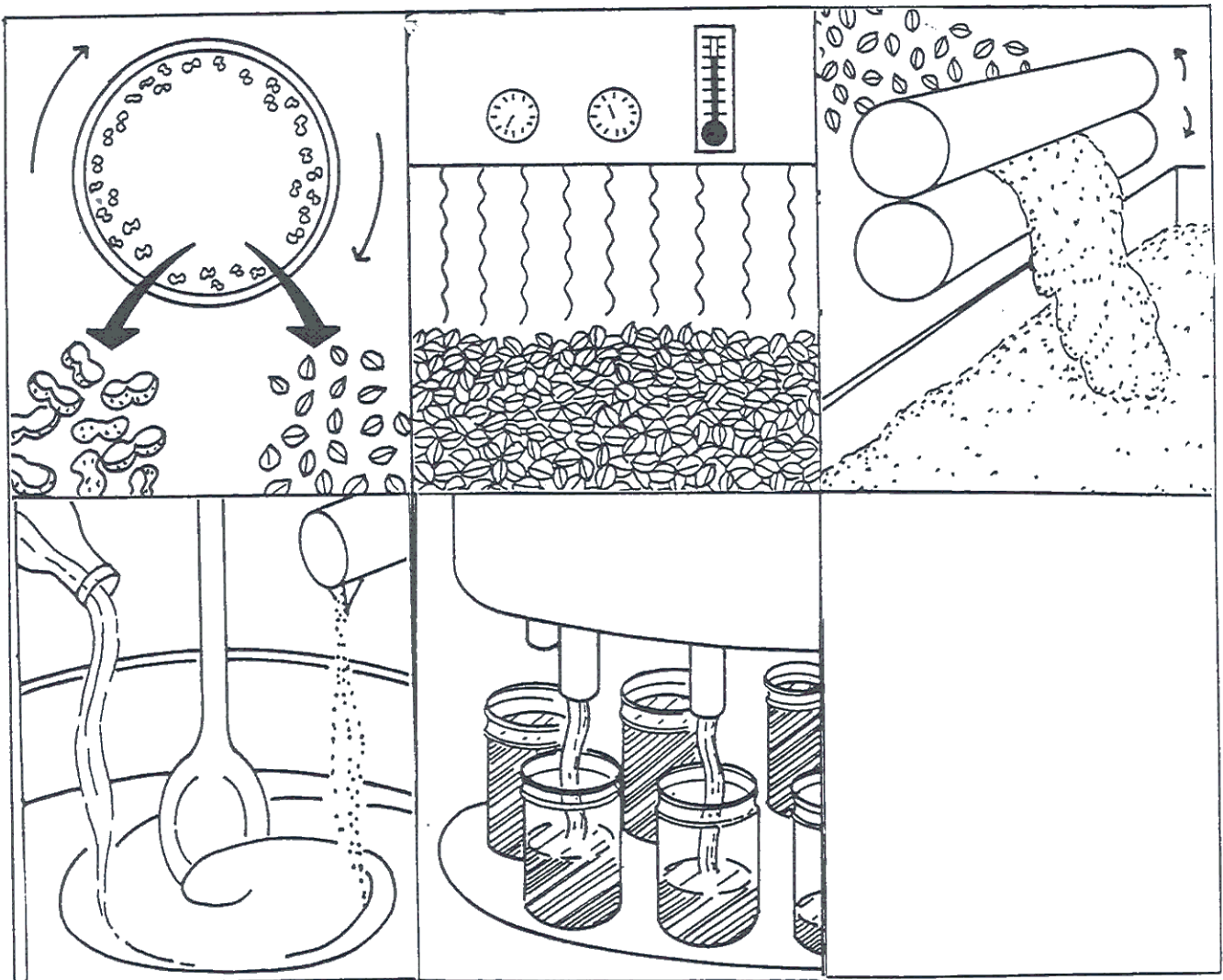


Name: *Answer Key*

From Peanuts to Peanut Butter

These pictures show the steps to make peanut butter. They are in the wrong order. The steps are (1) shelling the peanuts, (2) roasting the shelled peanuts, (3) grinding, (4) mixing in oil, sugar, and salt and then heating, (5) pouring into jars.

Cut out these pictures and past them in correct order on your own paper to show how peanut butter is made. Use the blank square last and draw in your favorite food made with peanut butter.



OLD FASHIONED PEANUT BUTTER

WHAT YOU NEED:

Ingredients

- 1 cup roasted peanuts
- 1 tablespoon oil
- 1/4 teaspoon salt (omit if salted peanuts are used)

Equipment

- dry measuring cups
- measuring spoons
- rubber spatula
- blender or food processor

In a Blender:

1. Place ingredients in blender; close top.
2. Push button to BLEND. Let blend several minutes.
3. Turn blender to OFF.
4. Remove top. Use a rubber spatula to scrape mixture from blender sides to the bottom and back in contact with the blades.
5. Close top. Blend until it looks like paste.

In a Food Processor: (Use metal blade)

1. Place ingredients in container and close.
2. Push button to BLEND. Let blend several minutes.
3. Process for 3 to 5 minutes. (The ground peanuts will form a ball which will slowly disappear.)
4. Stop machine. Scrape sides of container with rubber spatula.
5. Start the machine. Process until it looks like paste or is easy to spread.



To serve, spread the peanut butter on crackers, bread, celery, apple slices, etc. Store in a tightly closed jar in the refrigerator. Oil may rise to the top upon standing. Just stir before serving.

Makes 1 cup peanut butter

Peanut Butter Fudge

- 1 cup peanut butter
- 2 cups confectioner sugar
- 2 cups dry milk
- 2 Tablespoons vanilla
- 1 cup melted margarine

Mix and spread in 13" x 9" pan. Chill and serve.

* Contributed by a Pilot Teacher

Name _____

From A Peanut

How many words can you make from the word 'Peanut'?

How many more can you make from 'Peanut Butter'?

Name _____

Word Find

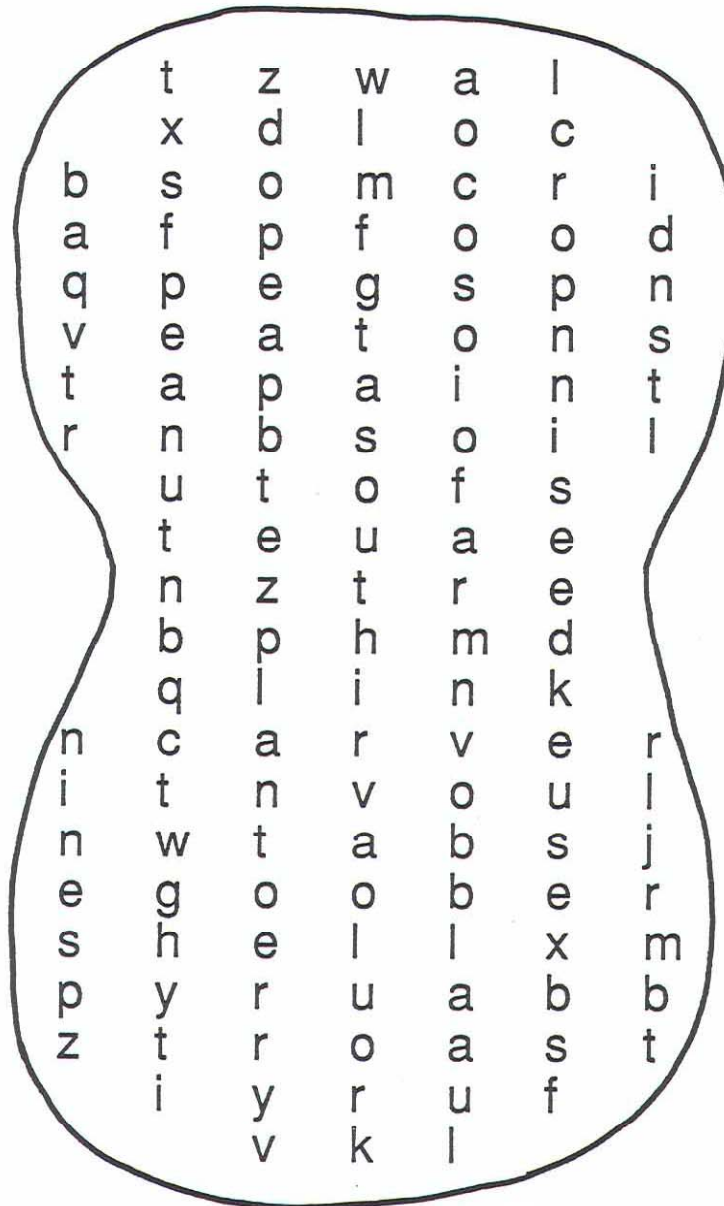
These peanut words are in this puzzle. Can you find them?

plant
south
oil
paint

crop
tons
shell
roast

peanut
food
goober
ink

pegs
seed
Carver
farm



Word Find

These peanut words are in this puzzle. Can you find them?

plant
south
oil
paint

crop
tons
shell
roast

peanut
food
goober
ink

pegs
seed
Carver
farm

