



### SKILLS

- Learn the parts of plants that we eat
- Gain knowledge about plant by-products
- Explore the process of seed germination
- Expand horticulture/gardening vocabulary
- Develop skills using the scientific method
- Increase technology skills
- Complete a service project

# HORTICULTURE and gardening

Do you ever think about the food you eat? How it grows? What plant parts we eat? Most of us take this for granted. Food is used for more than just food ... but many of the items we use everyday come from food. Some of the new skills that you can learn in the 4-H Consumer Education project are listed on the left. Check your favorites and then work with your 4-H leaders and parents to make a 4-H project plan of what you want to do and learn this year.



**LIFE SKILL** - Healthy Lifestyle Choices

## Yummy Roots and Stems!

*Did you know that many of the fruits and vegetables that we eat are actually the stems, roots, leaves, seeds and flowers of the plants from which these foods come? Look at the list of fruits and vegetables below. To which part of the plant does the food item belong? The plant parts are listed below. Write the food in the correct column. An example has been provided. P.S. there are more blanks than needed.*

- |           |             |              |
|-----------|-------------|--------------|
| asparagus | carrots     | pumpkin      |
| artichoke | cauliflower | radish       |
| beans     | celery      | spinach      |
| beets     | corn        | sweet potato |
| broccoli  | lettuce     | turnips      |
| cabbage   | peas        | watermelon   |

STEMS	ROOTS	LEAVES	SEEDS	FLOWERS
<u>asparagus</u>	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

# More than food ...

Corn-on-the-cob, popcorn, sweet corn ... we love to eat corn! Did you know that many by-products we use every day are made from corn? Using a dictionary or the Internet, look up the definition for by-products and write it in the space below.

\_\_\_\_\_

The following is a list of just a few of the products that are made from corn. Can you find them in the word jumble below? There are many other by-products made from corn. Some of these by-products are food. Others are not. Search the Internet to find others and list them in the space provided.

## WORD LIST

meal	starch	margarine
chips	soap	medicine
tortillas	flakes	oil
syrup	glue	alcohol

## BY-PRODUCTS

\_\_\_\_\_  
\_\_\_\_\_

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

# Scientific Seeds

Have you ever wondered what happens in the soil when you plant a seed? How does the seed become a plant? In this activity, you will use the scientific method to learn how seeds sprout and why it's important to take care of the seeds you plant.

## UP CLOSE AND PERSONAL WITH A SEED

### MATERIALS NEEDED:

- 11 (eleven) lima or kidney beans
- 1 cup of water
- 1 glass
- Pencil
- Paper

### DIRECTIONS:

1. Look at a kidney or lima bean seed. Write on the lines below what you think is inside of the seed.

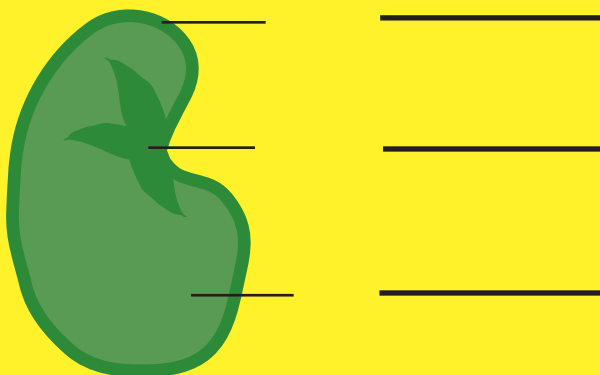
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2. Soak the beans in the cup of water for 24 hours.

3. With the help of an adult or friend, carefully peel the outer coat from one of the seeds. Split the coatless seed in half with your fingernail. Then draw what you see.

4. Use the words and definitions you learned in the Word Match to label your diagram with : seed coat, cotyledon and embryo.



# Word Match

Use the Internet to find the definitions to the words listed below. Draw a line from the word to its definition.

- SEED COAT -- to begin to grow or sprout
- SHOOT -- food source for the plant until it can make its own food with its own leaves
- EMBRYO -- contains the stems and leaves
- COTYLEDON -- a tiny plant with leaf, stem and root parts
- GERMINATE -- protects the embryo

# Did You Know?

Science is a way of understanding the environment in which we live. Using the "scientific method," we can look step-by-step at different aspects of our environment to learn more about it. There are eight steps in the scientific method:

1. Ask a question.
2. Get information about the question.
3. Make a guess or a hypothesis about the answer. This guess is based on the information you have gathered.
4. Test your hypothesis. This is typically done through an experiment.
5. Get your answers.
6. Compare the answers you get with the guess or hypothesis you have made.
7. Determine your conclusion -- what does it mean?
8. Tell others about what you have discovered.

## Service Ideas

Give a project demonstration about one aspect of horticulture and gardening.

Work with an assisted living home to grow a garden.

Host a gardening workshop for a local interest group in your community.

Organize a group of students to assist in planting a flower garden at a local school.

## Resources

School and public libraries  
Consumer education manual  
4-H project leader/groups

The following Website was used to create this activity sheet. To learn more consumer education skills visit:

[www.n4hccs.org](http://www.n4hccs.org)  
[www.utextension.utk.edu/4H/projects/horticulture.htm](http://www.utextension.utk.edu/4H/projects/horticulture.htm)

Don't forget! For more ideas and info, contact your local 4-H agent.

## Activities

4-H Demonstration

4-H Skill-a-thon

Create a weekly/monthly "Gardening Tips" for your local newspaper.

Enter your garden items in the county fair.

Set up a booth at the farmers' market to sell the items you've grown.

## Get Growing!

### MATERIALS NEEDED:

Paper towels  
Small plastic bag  
Journal/record book/notebook  
Pencil  
Magnifying glass (optional)  
10 seeds soaked overnight from "scientific seeds" activity

### DIRECTIONS:

1. Look at a kidney or lima bean seed. Write on the lines below what you think is inside of the seed.

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2. Soak the beans in the cup of water for 24 hours.

3. Dampen a paper towel. Fold the paper towel in half. Place all of the seeds on one side. Then, fold the paper towel again. Put

the paper towel in a plastic bag. Set in a warm place for 7 days.

4. Open the plastic bag daily and observe your seeds. What do you notice? Make a note in your journal (or use the one on the right) of the changes that have taken place each day. Draw a picture in your journal (or in the boxes on the right) of how your seeds look each day.

5. The moist seeds should sprout within 7 days.

6. Did your experiment support your hypothesis?

7. Transform your seed journal onto poster board or into a Power Point™ presentation. Share your study with others.

### SEED JOURNAL

Day 1: \_\_\_\_\_

\_\_\_\_\_

Day 2: \_\_\_\_\_

\_\_\_\_\_

Day 3: \_\_\_\_\_

\_\_\_\_\_

Day 4: \_\_\_\_\_

\_\_\_\_\_

Day 5: \_\_\_\_\_

\_\_\_\_\_

Day 6: \_\_\_\_\_

\_\_\_\_\_

Day 7: \_\_\_\_\_

\_\_\_\_\_
