

GARDENING CAMP

DAY TWO: READY, SET, GROW!



Oklahoma State University, as an equal opportunity employer, complies with all applicable federal and state laws regarding non-discrimination and affirmative action. Oklahoma State University is committed to a policy of equal opportunity for all individuals and does not discriminate based on race, religion, age, sex, color, national origin, marital status, sexual orientation, gender identity/expression, disability, or veteran status with regard to employment, educational programs and activities, and/or admissions.

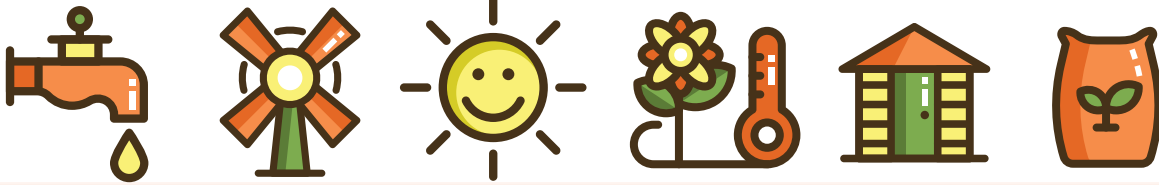
For more information, visit <https://eeo.okstate.edu>.



READY, SET, GROW!

Welcome to Gardening Camp Day Two!

Today, we are going to learn about the many things that plants need to grow and how photosynthesis works! Plants need several things in order to grow and survive. This includes water, air, light, temperature, protection and soil!



Water:

Water transports minerals to different parts of the plant. Plants also use water to make their own food and to help regulate the plant's temperature to ensure it doesn't get too hot or too cold. The water circulates through the plant and evaporates from the leaves, this process is called transpiration. This protects the plant from rapid changes in

Air:

Air contains oxygen, carbon dioxide and nitrogen! Plants need all of these things to grow. Oxygen helps plants use nitrogen from the soil, roots can't grow without oxygen and plant leaves use carbon dioxide to make food!

Light:

Plants use light to make their food. Chlorophyll is what gives leaves their green color. Chlorophyll is what helps plants absorb sunlight! Leaves use a combination of water, nutrients, and carbon dioxide to change light energy into sugars and starches, which are then turned into fats and proteins (plant food)! This process is called photosynthesis. In addition to light, plants also need a certain amount of time in the dark each day. Some plants need more time in the dark than they need in the sunlight!

Temperature:

Many types of plants need cool temperatures to grow, while others need warmer temperatures. Chemical reactions in the soil become slower at cooler temperatures and the plant may go through a rest period until temperatures get warmer. Some plants require this rest period in order to grow the next

Food:

Plants need food, or nutrients to grow. Plants make their own food using a process called Photosynthesis! Photosynthesis is the process that keeps plants alive and growing. In order for photosynthesis to occur, plants need light, water, carbon dioxide and nutrients. Many of the nutrients that plants use are from organic matter (worm casings, decomposing leaves, manure, etc.) found naturally in the soil or fertilizers that we add to the soil!

Protection:

In order to grow, plants have to be protected from insects, disease, weeds, injury from humans and undesirable weather! This is why we use greenhouses or hoop houses and why some plants are not planted until warmer weather in the spring. In Oklahoma, warm season plants may be planted in greenhouses or hoop houses in February-March to protect them from cold weather and extend the growing season. Leafy greens and tomatoes are two popular crops grown using this method. Home gardeners can start seeds in a sunny area inside their homes in late winter or early spring.



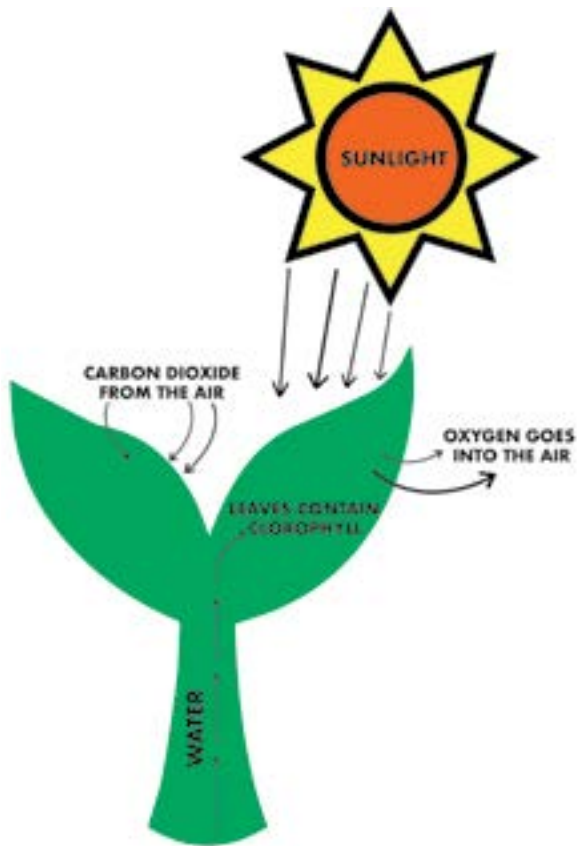
READY, SET, GROW!

How Do Plants Make Their Food?

Plants use a process called photosynthesis to make their food. During photosynthesis, plants absorb water from the soil and carbon dioxide from the air. Next, Chlorophyll (the green color in leaves) absorbs energy from the sunlight. The leaves use water and carbon dioxide to make oxygen and nutrients called sugars! Plants use some of the sugars and store the rest, and oxygen is released into the air.

Watch this video and follow along with Stephanie to draw your own model of the photosynthesis cycle!

<https://youtu.be/9oH27NoAyt8>



Want to Learn More?

For more information, check out the following links!

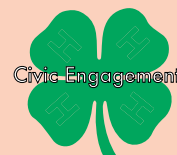
<https://extension.okstate.edu/fact-sheets/high-tunnels.html>

<https://extension.okstate.edu/fact-sheets/greenhouse-structures-and-coverings.html>

Activity Idea!

Play the attached matching game with your family and learn fun facts about different vegetables along the way! All of the vegetable on the matching game are options that you can grow in your garden at home!

Check out this fair entry idea: Category: 4-H Home Gardening (Section 4322: Home Gardening)



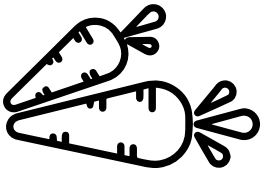
Matching Game Instructions:

- Carefully use sissors to cut out each card. Mix up the cards and lay them out in rows, face down.
- Take turns flipping over two cards at a time.
- If the two cards match, you can keep them. If the two cards don't match, turn them back over.
- The game is over when all of the cards have been matched. Whoever has the most cards at the end wins.

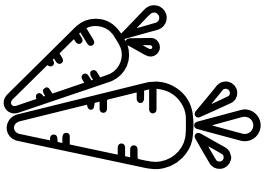


Resources:
Oklahoma State Extension Plant Science Classroom Activities
Brittanica Kids Photosynthesis

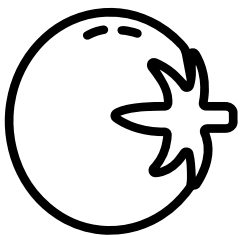




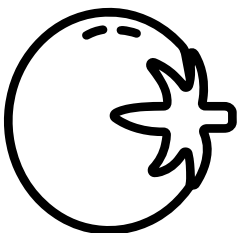
Did You Know?
Carrots come in a wide variety of colors! They can be orange, white, yellow, red and purple!



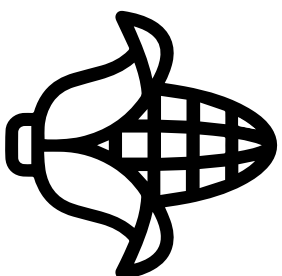
Did You Know?
Carrots come in a wide variety of colors! They can be orange, white, yellow, red and purple!



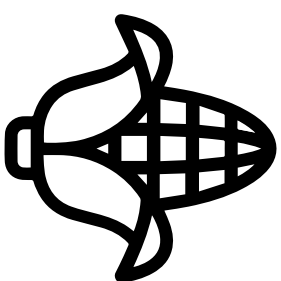
Did You Know?
Tomatoes are the state fruit of Ohio!



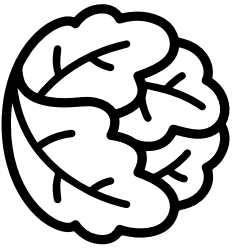
Did You Know?
Tomatoes are the state fruit of Ohio!



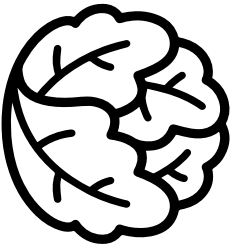
Did You Know?
The average ear of corn has 800 kernels!



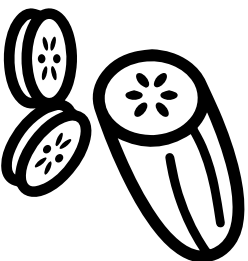
Did You Know?
The average ear of corn has 800 kernels!



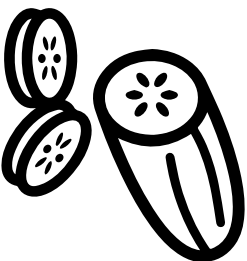
Did You Know?
The average American eats 30 pounds of lettuce each year!



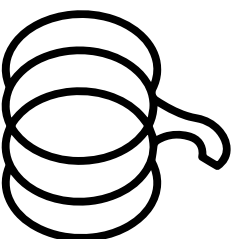
Did You Know?
The average American eats 30 pounds of lettuce each year!



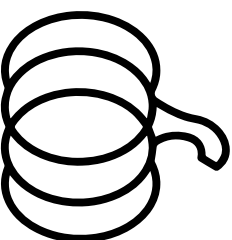
Did You Know?
Sliced cucumbers can be used to keep slugs and grubs out of your garden!



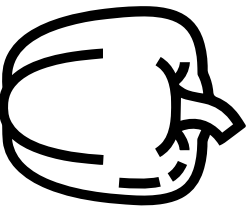
Did You Know?
Sliced cucumbers can be used to keep slugs and grubs out of your garden!



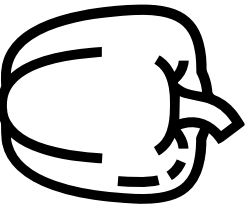
Did You Know?
Pumpkin pie was not served at the Pilgrim's Thanksgiving dinner!



Did You Know?
Pumpkin pie was not served at the Pilgrim's Thanksgiving dinner!



Did You Know?
Peppers are called Capsicums in Australia!



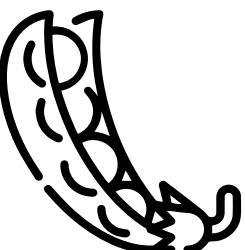
Did You Know?
Peppers are called Capsicums in Australia!



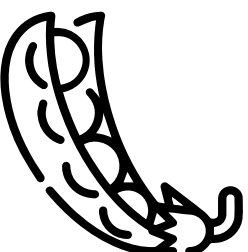
Did You Know?
Dogs can not eat onions. Doing so can make them very sick!



Did You Know?
Dogs can not eat onions. Doing so can make them very sick!



Did You Know?
Pea leaves are considered a delicacy in China!



Did You Know?
Pea leaves are considered a delicacy in China!