

IT'S TIME TO EXPLORE YOUR POLK COUNTY BACKYARD



4-H 
GROWS HERE

WEEK TWO: THE PLANT ISSUE

- It Starts with a Seed (p. 2)
- Life Cycle of a Plant (p. 3)
- Seed Germination (p. 4)
- Your Backyard Garden (p. 5)
- The Parts of a Plant (p. 6)

Planting Some Fun

Dear 4-H Families,
So you have investigated your soil...now what? Let's consider what we might want to **plant** in that soil.

In this week's unit we will take a closer look at the plants in our backyard and even possibly plan for new ones. While we're all at home right now, this is the perfect time to think about types of food you can grow in a small area of your yard or even in containers.

Also be watching for our next issue where we will discuss insects and the role that they play in your backyard!

**Polk County 4-H Youth
Development Agent
Helen Blackwell**



Contact Helen

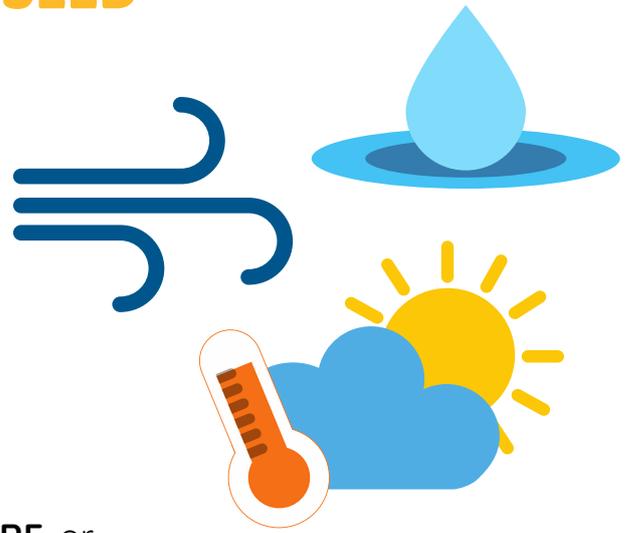
**Some of the
content for this
newsletter was
pulled from the
NC State Extension
"Soil Solutions"
curriculum.**

IT ALL STARTS WITH A SEED

Seeds are living things, but when you take one out of a packet, it is sleeping--in it's "dormant" stage. Seeds need certain conditions to wake-up or to "germinate." Once a seed germinates it can grow into a seedling.

So what conditions does a seed need to germinate?

The equation is **H₂O + O₂ + TEMPERATURE**, or Seed+Water+Oxygen+Temperature= germination.

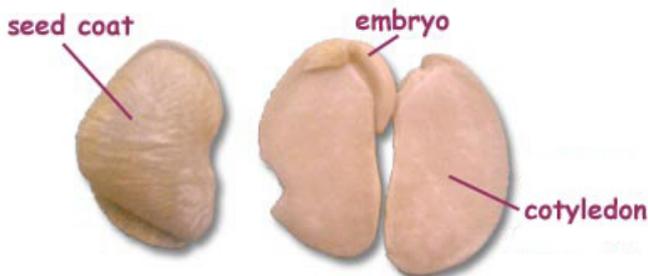


Hands On Activity



SEED SOAK

Take some dry beans that you might have in your pantry. They can be pinto, navy, kidney, any kind of dry bean. Take some of the beans and add warm water to them and soak them overnight. This should have softened the beans and you should be able to take your finger nail and split the bean in half.



Look closely at the two halves. You should be able to see the basic parts of the seed.

Your bean should look like the image above. You'll see the **seed coat**, which protects the seed and the **cotyledon**, which is food for the plant until the plant is able to make its own food through the process of photosynthesis. The **embryo** becomes the root, stem and first leaves of the plant!

LIFE CYCLE OF A PLANT

Now, let's take some more dried beans and use them to explore the full life cycle of a bean plant. Would you believe you can do this with just a clear jar, some wet paper towels, and a sunny area of your house? If you aren't convinced, watch this timelapse video to see how it happens...

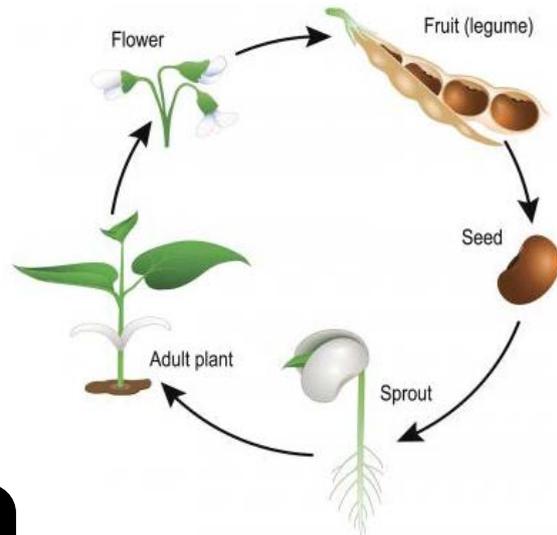
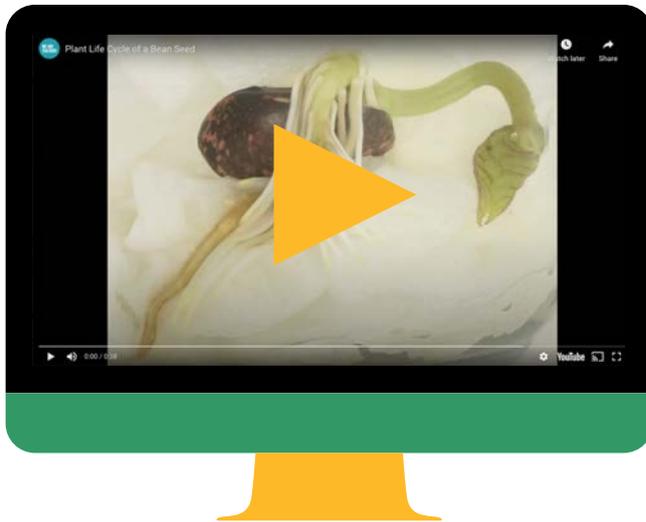


Image Credit: garden.lovetoknow.com

Do you have your jar, towels, and beans ready? Be sure to take notes on what you see over the next few days. You can even print copies of the observation sheets to record your plant's progress each day!

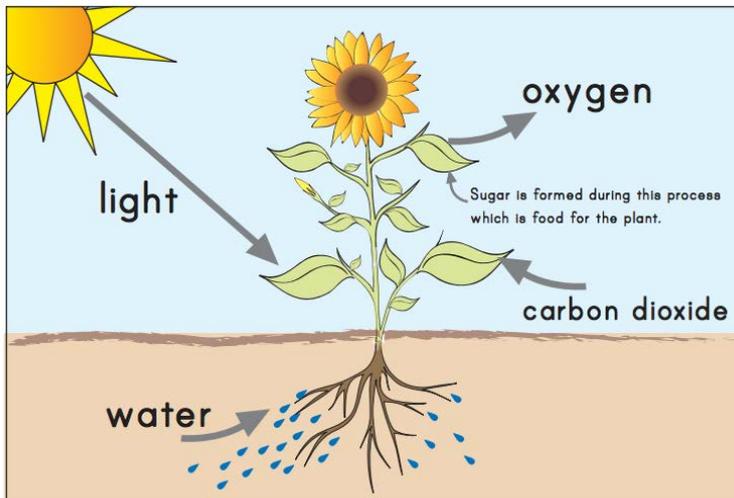


**PRINT THE
OBSERVATION
SHEET**

Things to watch for:

- Once the casing splits, the first thing to emerge from the bean seeds are the roots. Slowly, roots unfurl from the seed, reaching out for moisture and nutrients. Roots look like white threads as they grow out from the bean seed.
- After the seed germinates and the roots grow, the bean plant begins to push out a single stem.
- As the stem rises above the soil, two little leaves emerge.
- The first pair of leaves provide **photosynthesis** (the process of using sunlight to make food out of carbon dioxide and water) for the seedling. They drop off as soon as the mature leaves are produced.

WHAT DOES A PLANT NEED TO GROW?

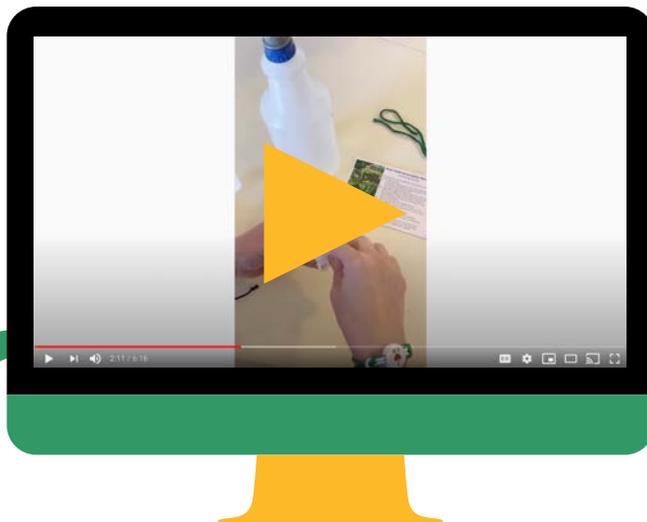


Plants use light energy from the sun to power the process of **photosynthesis**. The green chlorophyll in the leaves traps the energy for the plant's use. Think of chlorophyll as a solar-powered battery.

Just like humans, plants are made mostly of water. They use water to make food and also to move nutrients around the plant.

Another thing plants need to grow is carbon dioxide. They convert the water from the soil and the carbon dioxide from the air into oxygen (which humans need to breathe!)

Let's Make a Living Seed Necklace



What You'll Need:

- **Seed (radish seeds work well)**
- **Cotton ball**
- **Small plastic baggie**
- **Squirt bottle**
- **String or cord**
- **Water**

Can't view the video?
[CLICK HERE](#) for a
 printable pdf.

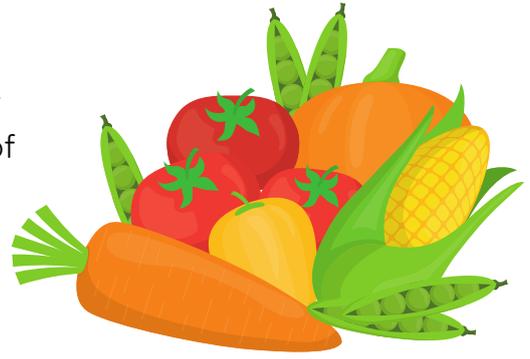


Email Helen
a picture of your
finished necklace!

YOUR BACKYARD GARDEN

What fruits and vegetables would you plant if you got to plan out your own garden for the summer? Some of the ones that grow well here in Polk County include:

- Green beans
- Cucumbers
- Tomatoes
- Bell Peppers
- Squash
- Corn
- Cantaloupes
- Watermelon



Are you ready to start a garden? Do some research with your parents about what each of the plants that you've decided to grow need to flourish.

To get you started, read these [**Tips for Beginning Gardeners**](#) written by Polk County Extension Director Scott Welborn.

Hands On Activity



Get a large piece of paper and pencil and head outside. See if you can draw a map of your yard. Pencil in the area on your map that would be the best place for your garden. Make sure it's a place that gets at least 6-8 hours of direct sunlight and has plenty of soil.

Now, finish your map by deciding where each thing that you want to plant will go. Draw them in by rows, since that's probably the way they will grow best.

Small Space Gardening

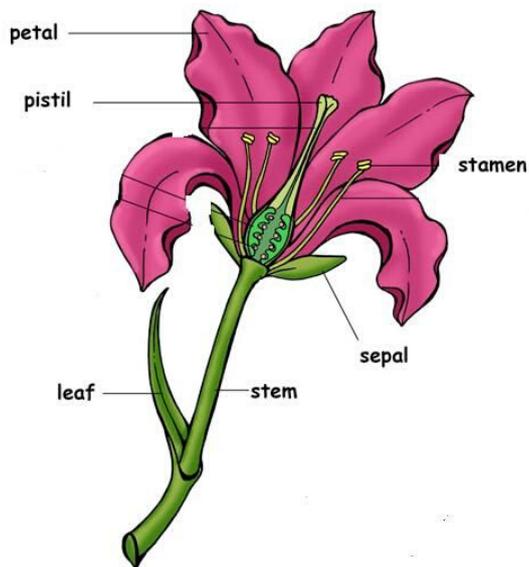
Maybe you don't have room in your yard for a garden area, or maybe you'd just like to start small. If so, you might want to investigate growing some vegetables in containers instead.

Watch this video for info on container gardening.



THE PARTS OF A PLANT

The Parts of the Flower



Now that you are growing your own plants it is important to understand the roles that the different parts of the plant play.

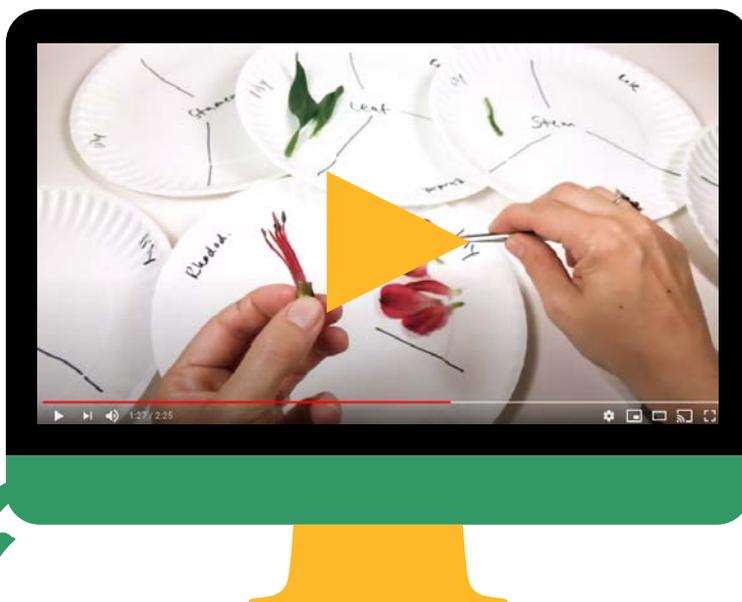
In this activity you will be dissecting and labeling the parts of the plant and researching what each part does.

Hands On Activity



Locate some flowers in your yard--they can be azaleas, iris, any type of flowers you can find. If you choose azalea, take a close look at the bush. You can see that it is attached to the ground through its root system, which brings water and nutrients from the soil to the rest of the plant. You will also see the stems or branches which are part of the nutrient delivery system.

Now pick some of the flowers from the bush. Use the video instructions below to slowly take a flower apart and put the parts on the appropriate labeled plate. You should be able to find all of the parts from the parts diagram above.



What You'll Need:

- Fresh flowering plants with large plant parts
- Glass or cup with water
- Paper plates
- Tweezers
- Scissors
- Magnifying glass or hand lens (optional)
- Paper (optional)
- Colored pencils (optional)
- Tape (optional)

Can't view the video?
[Click this link](#) instead.



Email Helen a picture of your project!