JONES VALLEY teaching farm | GOOD SCHOOL FOOD

PLANT ADAPTATIONS (*4th Grade*)

ALABAMA COURSE OF STUDY STANDARD (Science)

⇒ 9) Examine evidence to support an argument that the internal and external structures of plants (e.g., thorns, leaves, stems, roots, colored petals, xylem, phloem) and animals (e.g., heart, stomach, lung, brain, skin) function to support survival, growth, behavior, and reproduction.

DESCRIPTION

⇒ Farmer Joi and Farmer Kelly examine how different structures and characteristics of plants exhibit how they have adapted to allow the plant to survive and reproduce over time.

OBJECTIVES

Students will be able to:

⇒ Identify how various adaptations from plants around the Teaching Farm allow the plant to grow, survive, and reproduce.

⇒ Create a plant from a specific environment with various adaptations that would aid in its ability to grow, survive, and reproduce.

MATERIALS NEEDED

⇒ Paper and Writing Utensil

⇒ PLANT ADAPTATIONS (YouTube Link)

FOLLOW-UP DISCUSSION

After viewing the video, ask students the following questions:

- What is one part of the cactus that helps it survive? How? *(deep roots reach for water, large stems store water, bright flowers attract pollinators for reproduction, spines protect from predators and shade plant)*
- What is one part of the bean that helps it survive? How? *(roots anchor it steady in the ground, tendrils help pole beans climb toward sun, large leaves to get energy from the sun, bright flowers attract pollinators for reproduction)*

- What is an adaptation? *(special structures that help organisms **survive**, **grow**, and **reproduce** in their environment)*
    - *Another example you could share: "Some plants even produce certain chemicals into the air to protect them. For example, tomato and cotton plants release a certain combination of chemicals to keep bugs away from eating them."*
- What kinds of things might help a plant survive in its environment?
    - What might help a plant survive in a **really hot environment**? *(deep roots, fibers to help shade it, spines instead of leaves lose less water)*
    - What might help a plant survive in an **aquatic (underwater) environment**? *(anchoring roots, flexible stems, floating leaves, waxy leaves regulate water absorption)*
- How are thorns an adaptation? *(over time, some plants grew bigger thorns to keep predators away)*

FOLLOW-UP ACTIVITIES

1. ***Create Your Own Plant with Adaptations*:** Draw a plant with adaptations to help it survive in the COLD ARCTIC or TROPICAL RAINFOREST.
    - ***What kind of roots would help the plant survive best? Stem? Leaves? Flowers?***
    - ***How would it reproduce, or form new baby plants?***
    - ***How might it protect itself?***
    - ***Any other features to help it survive, grow, or reproduce?***
2. ***Adaptation BINGO with Farmer Sedrick:*** To further your exploration of adaptations of plants and animals, watch the video at this link.
    - Now, make a "scavenger hunt" card like the one on the following page. Once your card is made, head outside and try to find as many adaptations as you can.
    - When you find an adaptation, cross it off on your paper and make a note of the plant or animal you found that exhibits that adaptation.

Camouflage Find a plant or animal that can disguise itself or blends into its environment to hide from predators.	**Defense** Find a plant or animal that has an adaptation that protects it against herbivores or predators. (Examples: rose bushes with thorns, porcupines, etc.)	**Seed Dispersal** Find a plant that has adapted creatively to distribute its seeds to grow new plants. (Examples: fluffy white dandelion seeds that are carried away by the wind)
Structure Find two trees, one with smooth bark and one with rough bark. Trees with rough bark grow taller quicker, while trees with smooth bark grow slower but their bark is denser to protect against insects and animals. Why else might they be different?	**FREE SPACE** Find another adaptation of your choosing!	**Photosynthesis** Find the biggest leaf you can! This leaf has a lot of space to absorb sunlight and complete the process of photosynthesis.
Hunt or Gather Find an animal that has adapted to search or hunt for its food. (Examples: spider with prey in its web, woodpecker perching on a tree, etc.)	**Reproduction** Find a colorful flower. The brighter the better! Flowers have adapted to be different colors to attract different types of pollinators which assist them in their reproductive process.	**Communal Living** Find an insect or animal that has adapted to survive within a group setting. (Examples: ants, honeybees)