

Agriculture Introduction:

Georgia's largest industry is agriculture, and it is important to educate young people about the commodities grown within the state. For the 2025 National Ag Week, Georgia is celebrating soils and gardens! More information about agriculture in Georgia can be found from the Georgia Department of Agriculture, UGA Extension, commodity groups, and agriculture-related companies, such as Farm Bureau.

While this resource was initially intended for use during the 2025 National Ag Week, it can be used at anytime!

Kahoot Information:

Kahoot is a web-based interactive trivia game that could be hosted face-to-face or virtually. The game facilitator (4-H professional, volunteer, teacher, etc.) will need the capability to share the presentation screen (projector/screen, virtually with 'share screen' option). Participants will need a device (smart phone, tablet, laptop, etc.) to respond to the trivia questions. Depending on the device (and data package), Internet may/may not be needed.

The facilitator will use the link below to access the Kahoot game. After each question, facts about strawberries can be shared with participants.

Kahoot link: <https://create.kahoot.it/share/the-soil-in-jackie-s-garden-national-agriculture-week-kahoot/1336428a-96e8-4b23-ba74-2ca7dbf09eef>

This game could be used in various settings, including in-school club meetings, after-school activities, virtual game shows, STEM Night events, community festivals, etc.

Facts to Use with Questions:

Question 1: What are the tiny holes in leaves that turn sunlight into food?

Stomata (singular form: stoma) are tiny pores in plants that allow for gas exchange. They take in carbon dioxide and release water vapor (through the process of transpiration). Chloroplast contains chlorophyll (green pigment) which aids in the process of photosynthesis whereas, stomata is that part of a plant's leaf which helps in the process of respiration.

Question 2: True or False: Seeds only need water to grow into plants.

When a seed absorbs water, it activates the processes needed for germination, but it also needs oxygen to breathe and a suitable temperature range for the chemical reactions to occur properly.



Question 3: The waste from worms is called _____.

Worm castings, also known as vermicompost, are a natural fertilizer that can improve soil structure and plant health. Benefits include plant growth, soil structure, disease protection, nutrient absorption, and feeding soil microorganisms. Sometimes, you can purchase worm castings at a garden shop!

Question 4: What are the baby plants inside of seeds called?

The baby plant inside a seed is called an embryo. An embryo is a tiny, undeveloped plant within a seed that contains the potential to grow into a new plant when conditions are right for germination.

Question 5: True or False: Roots grow underground, supply food and water to the plant, and provide structure and support.

Roots generally grow beneath the soil surface. The primary function of roots is to absorb water and minerals from the soil. By anchoring the plant in the ground, roots provide stability and support to the plant.

Question 6: What is the responsibility of the xylem in a plant stem?

The primary responsibility of the xylem in a plant stem is to transport water and dissolved minerals from the roots, through the stem, and up to the leaves of the plant; essentially acting as a conduit for water movement throughout the plant.

Question 7: What do the bright colors of flowers attract?

The bright colors of flowers attract pollinators, like bees, butterflies, and hummingbirds, which are necessary for the flower to reproduce by transferring pollen from one flower to another. The vibrant colors act as a visual signal to pollinators, making it easier for them to locate the flower and access its nectar. Over time, flowers with brighter colors were more likely to be pollinated, leading to the evolution of brightly colored petals in many plant species. Different flower colors can attract specific types of pollinators. For example, red flowers often attract hummingbirds, while blue and purple flowers tend to attract bees.

Question 8: True or False: ALL flowering plants create fruit, even if they are not edible.

All flowering plants are called angiosperms and produce fruit, regardless of whether the fruit is edible or not. The primary function of a fruit is to protect and disperse the seeds of the plant, which applies to all flowering plants. While we often think of "fruit" as something sweet and edible, technically even things like acorns, nuts, and certain pods are considered fruits because they fit the botanical definition.

Question 9: What is the process in which worms, insects, and microorganisms break up plant scraps into soil components?

Decomposition is the natural process of breaking down organic materials into simpler substances like water, carbon dioxide, and mineral salts. Composting is a form of recycling that uses decomposition to create nutrient-rich soil. Composting can't happen without decomposers!

Question 10: True or False: Compost is NOT a rich plant food for your garden.

Compost does contain low levels of primary and secondary nutrients and important quantities of micro-nutrients. It's a great source of plant food for gardens! In general, there are typically not



enough nutrients present in the compost to supply the needs of vegetable crops and ornamental plants.

Question 11: True or False: Soil is made up of plants, air, water, rocks, living animals, and decomposed material.

Typical soil consists of approximately 45% minerals, 20-30% water, 20-30% air, and 5% organic matter. There are also living animals (like worms!) in soil!

Question 12: The process of a plant turning sunlight into food is known as _____.

Photosynthesis is the process by which plants, algae, and certain bacteria use sunlight to convert carbon dioxide and water into glucose (sugar) and oxygen, essentially creating food for themselves by harnessing light energy and storing it as chemical energy.

Question 13: Seeds are produced in what part of the plant?

Seeds are produced in the ovary of a flower, which is part of the female reproductive structure called the pistil. Once fertilized, the ovules within the ovary develop into seeds.

Question 14: Soils will lose _____ as plants take them out but will gain them back through decomposition. This is known as cycling.

Soil nutrient cycling is the process by which nutrients move between the soil, plants, and animals. It's a natural system that involves the absorption, transfer, release, and reabsorption of nutrients.

Questions about these resources can be directed to:

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Updated February 21, 2025



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