Growing Fruit

Grade Level(s)

3rd grade

Estimated Time

30 minutes

Purpose

Students will discover how fruit is produced. From farm to plate, the class will explore geography, problem solving and diversity in farming.

Materials

- Links:

  Our website with virtual resources www.linncoag.com -2020/21 virtual learning- tab down -December

  Instructional video: https://www.youtube.com/watch?v=zoR5scBoWQs

  My Family's Apple Farm Book

    Book: https://www.yumpu.com/en/document/read/63057391/my-familys-apple-farm

    Read-aloud: https://www.youtube.com/watch?v=jxcCMcjgcjI&list=PL6fqYHxqQAn2WEXg3TElq3YSXqsQg2Woa&index=3

  Florida Tangerine FarmChat: https://www.youtube.com/watch?v=J_-havWT8iI&feature=youtu.be&fbclid=IwAR3Bvsrc1BrWXqjyfYCFw_kJnJdXBZdJlNp90XCiz0XNqEPfXiw6ish9Ioc

  How does it grow- apples https://www.youtube.com/watch?v=UWLmEh1HIBw

  Crazy tree grows 40 different kinds of fruit https://www.youtube.com/watch?v=ik3l4U_17bI

- Other:

  Construction paper- one per student

  Glue

  Scissors

  Markers or crayons

- Worksheets:

Grafting review/craft

Grafting station cards

Vocabulary

grafting: a plant that has a twig or bud from another plant attached to it so they are joined and grow together

heredity: the passing on of characteristics from parents to offspring

plant breeding: the purposeful manipulation of plant species in order to produce desired characteristics

trait: a quality or characteristic that makes one person, animal, or thing different from another

Interest Approach – Engagement

Watch the video: crazy tree grows 40 different kinds of fruit
https://www.youtube.com/watch?v=ik3l4U_17bI
Ask the students to brainstorm what they learned is possible from the video.

Background - Agricultural Connections

Just one fruit example: Apples have been selectively bred for thousands of years to produce the varieties that we know today. Honeycrisp, Gala, Red Delicious, Granny Smith, and the many other apples in the grocery store all come from the same species of tree, but they have distinctly different characteristics. Some are sweet and others are tart. Some are good for baking, while others are best eaten fresh. Some store well for a long time, but others need to be used soon after ripening. Knowledge of how traits are inherited in apples has allowed breeders to develop the many different varieties found in orchards and grocery stores around the world.

Apples can reproduce by seed, but farmers almost never grow apple trees from seed. In order for apple fruit and seeds to form, the flowers of the tree must first be pollinated. Some fruit trees can self-pollinate, but apple trees must be cross-pollinated with pollen from a different variety of apple tree. This means that each apple seed is genetically unique, and there is no guarantee that the tree it grows into will produce fruit anything like that of its parents. If a farmer started an apple orchard by growing trees from seed, each tree would produce apples with different flavors, colors, and ripening times, making it difficult to manage and market the crop. So, most apple orchards begin by **grafting** a desirable apple variety onto a strong rootstock. A section of a stem with leaf buds is inserted into the trunk of another. The two will fuse together and the stem section will grow and produce apples just like the tree it was taken from.

Procedures

1. Read the story My Family's Apple Farm or listen to the read-aloud video (links above)- emphasize how the apple trees grow, how they are harvested and other key concepts from the story.
2. Watch: How does it Grow-Apples or Tangerine FarmChat (links above)
3. Use the following discussion questions to explore the video:
   Why don't farmers grow fruit from seed?
   What is grafting? *(The process of joining a cut stem—or bud—with the trunk of another tree so that the two grow together.)*
   Why do apple farmers graft their trees? *(Grafting allows farmers to "clone" the trees that produce the fruit they want. A grafted branch has the same genetic makeup as the tree it was taken from.)*
4. Pass out the grafting review and craft worksheet. 1. Review together as a class or individually and 2. instruct the students to cut out the grafting pictures, glue to a piece of construction paper and create a fictional or nonfictional fruit tree with markers or crayons.
5. Optional: students can share their crafts with the class.

Organization Affiliation

Morgan Hibbs, Linn County Farm Bureau

Agriculture Literacy Outcomes

Science, Technology, Engineering & Math

Identify examples of how the knowledge of inherited traits is applied to farmed plants and animals in order to meet specific objectives (i.e., increased yields, better nutrition, etc.) (T4.3-5.c)

Iowa/ Common Core Standards

3-LS3-1 Analyze the interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

3-LS4-3. Construct and argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.