

Grade Level: 2

Title: Who's My Parent?

Purpose:

The purpose of this lesson is for students to identify ways in which many plants resemble their parents.

Subject Area(s) Addressed:

Science

Common Core/Essential Standards:

Science:

2.L.2.1 Identify ways in which many plants and animals closely resemble their parents in observed appearance and ways they are different.

2.L.2.2 Recognize that there is variation among individuals that are related

Vocabulary:

air	food	parent
characteristics	fruit	plant
color	leaf shape	seed
flower	life cycle	size
flower type	light	water
flowering plants	needs of plants	young

Materials Needed:

variety of plants or pictures of plants (see Teaching Strategy below for specifics)
strawberry plant or picture of plant
strawberry runners or picture of runners

Teaching Strategy:

Begin the lesson by having students bring in pictures of themselves with other members of their family, particularly their parents and brothers/sisters. Ask students to look at their pictures and make a list of ways they are alike and different from their family members. They can pick one person in the group with whom to compare and contrast themselves. As a group, list the various areas in which they saw likenesses and differences (i.e. hair color, temperament, etc.). Transition to the topic for the lesson by stating that just as members of a family have likenesses and differences, so do plants.

Show students two different vegetable or fruit plants. Compare and contrast the two plants. Some suggestions are: celery, potato, tomato, corn, carrot, apple, orange, pear. Students should understand that all these food plants (or tree/bush

on which they grow) have roots, stems, leaves, fruit and flower. Then, show students examples or pictures of the following vegetables. All these are exactly the SAME species (*Brassica oleracea*), but have been modified by breeders/farmers over hundreds of years so that different parts of the plant are emphasized and have become the part we eat. See

http://en.wikipedia.org/wiki/Brassica_oleracea

Cabbage- terminal bud

Brussels Sprouts- axillary bud

Collards and Kale –leaves

Broccoli- buds

Cauliflower- flower

Kohlrabi- stem

Students should recognize similarities and differences among each of these. Next, show students a mother and daughter strawberry plant, preferably real plants. Have them compare the original plant (mother) with the plants on the runners (daughters). Ask students how they are the same and different. Students should talk about characteristics passed from parent to offspring, such as leaf shape, size and color; flower shape, size, and color; stems, roots, and seeds. Students will record their observations in their science journals.

Extension Activities:

Have a farmer visit the class to talk about propagation (“raising plugs”).

Have students identify the key plant parts on each plant (roots, stem, leaf, flower/fruit (if available)). Some plants are a challenge, esp. to find the stem (for strawberries, it is the crown), or figure out “rhizomes” and “tubers”.

Have students root the “tips” or daughter plants from the runners, by placing them on growing medium in a pot, and watering frequently and tending them carefully until they root. It may help to gently clip the plant in place. See videos in “Resources.”

Background Information:

Strawberries have seeds – about 150-200 per berry - which can be planted to grow new plants, just like any other seed-bearing plant. But strawberry plants also send out runners and create new “daughter plants,” giving them two strategies for reproduction. One runner may develop several daughter plants. Except for strawberry plant breeders creating new varieties, and a very few types of strawberries (primarily Alpine strawberries), cultivated strawberries are *always* propagated from these runners, and both farmers and gardeners buy plants rather than seeds. These plants are sold either as “bare root” plants or rooted into a growing medium as “plugs”. To make plugs, strawberry nurseries cut off the “tips” of the runners, before they have developed roots, and then root them.

Fruit trees, blackberries, blueberries, and most other fruit crops are also propagated vegetative from parts of the plant rather than seed. For most of these, however, cuttings are used as they don't have the strawberry's strategy of sending out runners. One advantage of vegetative propagation is that the offspring are clones -- exactly like the parent plant. Plants grown from seed are a less predictable mix of the genetics of two parents. To understand the structure of the strawberry plant (and its nomenclature), see the Strawberry Plant Diagram in the NCSI Resources.

Growing your own strawberry plants from runners:

www.youtube.com/watch?v=akgO7Re91NQ

Plug production by a commercial strawberry nursery:

www.youtube.com/watch?v=3PQ9GBQA1zM

Activities to use with plants:

www.filoli.org/downloads/education/grade2-plants-and-animals.pdf

Background information on plants:

<http://sciencenetlinks.com/lessons/plants-1-plant-parents/>

Assessment:

Information recorded in science journals

North Carolina Strawberry Association – www.ncstrawberry.com

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