Generations of Traits

Abstract

In this hands-on activity students track and record the passage of colored pom-pom "traits" through three generations of gingerbread people. Students observe that traits are passed from parents to offspring, and that siblings each receive a different combination of traits from their parents.

Learning Objectives

- Traits are observable characteristics that are passed down from parent to child.
- An individual will have many traits they share in common with others, and more so with siblings and parents.
- An individual's overall combination of traits makes them unique.
- An equal number of traits are passed on from each parent.

Estimated time

- Class Time 30 minutes
- Prep Time 30 minutes

Materials

- Copies of student pages
- crayons or colored pencils

Per group of 3 or 4

- 24 colored pom-poms (6 each of red, yellow, brown, and green)
- 6 plastic cups

Instructions

1. Begin class by pointing out that every person in the class has a unique combination of "traits" or observable characteristics. Discuss some examples of traits (eye color, handedness, height, etc.).
2. Invite students to consider why children often resemble their siblings and parents. Explain that these resemblances occur because traits are passed down from parent to child.
3. Divide students into groups of 3 or 4. Give each group a set of materials. Instruct students to carry out the activity following the instructions on student page S-1.
4. Suggest that students close their eyes and mix the pom-poms with their hands each time before drawing them out. This will yield a more random and varied result.

Discuss

- If the siblings in a group's family end up with the same combination of traits, remind students

that human characteristics are determined by far more than six traits. It is possible to have six or more traits in common with another person, yet still maintain a unique appearance.

- Because siblings inherit traits from the same parents they often look alike. However, a child randomly inherits half of his traits from each parent. As a result, siblings each inherit a different combination of traits.

Misconceptions to watch for

Students may think they inherit traits from aunts, uncles, cousins and siblings because family members point out the resemblance between students and their relatives. Emphasize that traits can only be inherited from parents (and by extension grandparents).

Credits

This activity was adapted from "You, Me & Others", Biological Sciences Curriculum Study and March of Dimes Birth Defects (1995) (out of print).

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