

Introduction to Heredity Module Guide

Abstract

A suggested sequence for using the *Introduction to Heredity* module activities in the classroom to create an introductory unit on heritable traits. Includes homework assignments for families to learn about traits together.

Logistics

Time Required

- ▶ **Class Time:**
approximately 150 minutes
- ▶ **Prep Time:**
varies

Prior Knowledge Needed

none

Appropriate For:

Primary Intermediate Secondary College

Learning Objectives

- ▶ Traits are observable characteristics that are passed from parent to child.
- ▶ An individual will have many traits in common with others and more so with siblings and parents.
- ▶ An individual's overall combination of traits makes them unique.
- ▶ Some traits are more common in a population than others.
- ▶ An equal number of traits are passed from each parent.
- ▶ DNA is a set of instructions that specifies the traits of an organism.
- ▶ Information in the DNA molecule is divided into segments (called genes).
- ▶ Variations in DNA lead to the inheritance of different traits.

Classroom Implementation

Below is a suggested sequence for implementing the activities contained in the *Introduction to Heredity (Grades 5-7)* module. Please see each individual activity for implementation instructions, suggestions for adaptations and extensions, and applicable standards.

Day	Activity	Notes
Day 1 (30 mins.)	An Inventory of My Traits	• Students take an inventory of their own easily-observable genetic traits and compare those inventories with other students in groups.
	Teacher Reference: Inherited Traits: A Quick Reference	• A pictorial reference of the traits included in <i>An Inventory of My Traits</i> and other activities in this module. Includes information about inheritance patterns, frequencies and interesting facts about each trait. (Optional)
	Family Traits Trivia (Homework)	• Students use game cards to inventory the traits in their family. (Note: individuals in families do not need to be related to participate in this activity.)
Day 2 (30 mins.)	A Tree of Genetic Traits	• Students find the most and least common combination of traits in the class by marking their traits for tongue rolling, earlobe attachment and PTC tasting on paper leaf cut-outs. Students then organize the leaves on a large “tree of traits”.
	Handy Family Tree (Homework)	• Students distinguish between inherited and learned traits by creating a “family tree of traits” using handprints. (Note: Individuals in families do not need to be related to participate in this activity.)
Day 3 (50 mins.)	Generations of Traits	• Students track and record the passage of colored “pom-pom traits” through three generations of ginger-bread people.
	Traits Bingo	• A review activity where students cross off or color bingo squares in response to questions about their traits.
Day 4 (40 mins.)	A Recipe for Traits	• Students learn that differences in DNA lead to different traits by: 1) randomly choosing strips of paper that represent DNA then 2) decoding the DNA strips to complete a drawing of a dog.
	Family Traits and Traditions (Homework)	• Students and their families play a matching game with cards to identify traits that are inherited and traits that are learned or passed on through tradition.

Credits

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