Classroom Teacher Preparation

Life Science 1: Hereditary Traits

Please use the following to prepare for the next SfS lesson.

Description:

In this lesson, students will examine how traits are inherited from parents to offspring by using Cootie® toys with interchangeable body parts. In the first activity, students will choose Cootie parents to make an offspring from and play the inheritance game to determine what traits their Cootie will have. In the second activity, students will deduce who the possible parents are of a Cootie baby with a given set of traits.

Lesson Objectives – SWBAT ("Students Will Be Able To…"):

3rd-5th

- Recognize that traits are heritable
- Use parental trait information to construct a hypothetical offspring

Disciplinary Core Idea (DCI)

LS3. Heredity: Inheritance and Variation of Traits

- (3rd-5th) *LS3.A Inheritance of traits & LS3.B Variation of traits:* Different organisms vary in how they look and function because they have different inherited information; the environment also affects the traits that an organism develops.

Science & Engineering Practice (SEP)

Constructing explanations and designing solutions

- (3rd-5th) Construct an explanation of observed relationships.

Planning and carrying out investigations

- (3rd-5th) Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution.

Crosscutting Concept (CCC)

Patterns

- (3rd-5th) Patterns can be used as evidence to support an explanation.

Preparation:

This lesson serves as an introduction to the topic of heritable traits, though it is helpful if students are already familiar with the terms "inheritance" and "traits".

Room Set Up for Activities:

Students will work in trios to play the inheritance game at desks or tables.

Safety:

There are no safety concerns for this lesson.

Related Modules:

This lesson may be taught as part of a sequence or group of related modules on **Adaptation and Natural Selection.** Modules include:

Life Sciences 5: Food Webs – This module teaches the basics of food webs. Students first construct a food web model for a simplified Yellowstone ecosystem. They then consider what would happen to the ecosystem if the food web were disrupted by the removal of a native species and/or the introduction of an invasive species.

Life Science 8: Owls – Students learn about the adaptations owls have that allow them to swallow their prey whole. They then dissect an owl pellet with a partner to gather data about the owl's diet.

Life Science 28: Camouflage and Mimicry – Camouflage and mimicry are explored as examples of animal adaptations that increase chances of survival. Students play a hunting game to gain an appreciation of the problems that these adaptations pose for predators.

For other module sequences and groups, look here: www.sciencefromscientists.org/sequences

Standards Covered:

Please click the following link to our website to review the standards covered by this lesson, listed by state: www.sciencefromscientists.org/standards/

Lessons are matched to both national NGSS and local state standards.

After Our Visit:

Extend this lesson by collecting genetic information from friends and family.

Access this Extension activity by visiting the Classroom Post found on our website at sciencefromscientists.org/cohorts. Use the name of your school/cohort and password to log in.

To help Evaluate, check out our Open Response questions online at sciencefromscientists.org/open-response-questions. They are freely available for all of our lessons for current teachers. Use the password supplied by your instructor to log in.

Additional Resources:

- Variation of Traits: https://www.generationgenius.com/videolessons/variation-of-traits-video-for-kids/
- Inheritance of Traits mini lesson: https://www.youtube.com/watch?v=bGiKRD5QHkI
- Genetics for Kids: https://www.youtube.com/watch?v=9ie3IbxTAcY