The Nature of Color

BACKGROUND FOR EDUCATORS

Overview of Student Worksheets

Using worksheets, students explore the exhibition to learn how color works and how it helps organisms adapt to their ecosystems all across the planet. We perceive objects as having color when light reflects off the surface of the object and reaches our eyes. Colors help animals blend in with their surroundings or stand out, both of which can help them survive and reproduce. For example:

- Camouflage, or blending in with the background, can help organisms hide from predators or help camouflaged predators trick their prey.
- Bright, noticeable colors can also be important for survival: Toxic animals use reds and oranges to warn predators not to eat them, and plants use the same colors to advertise ripeness to the animals that will eat their fruits and disperse their seeds.

These observations help students experience a **natural phenomenon**: Organisms have different colors. This phenomenon can serve as an anchoring point in discovery and discussion as the students explore the **investigation question:** How do the colors of organisms help them survive?

Extension Ideas

Back in the classroom, students can color their worksheet sketches and place them next to those of their peers to create a rainbow of organisms. Ask students: Are all the colors of the rainbow represented by the organisms we chose? Are any colors missing? Have students research organisms of every color and complete your classroom rainbow! Suggested resources:

- What's This? Colorful Creatures (ology.amnh.org/zoology/whats-this-colorful-creatures)
- Color in Nature (ology.amnh.org/marine-biology/color-in-nature)

Correlation to Standards

This activity supports the following Next Generation Science Standards:

Disciplinary Core Ideas	**LS1.A: Structure and Function** All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive, grow, and produce more plants.
Crosscutting Concepts	**Structure and Function** The shape and stability of structures of natural and designed objects are related to their function(s).
Science and Engineering Practices	**Engaging in Argument from Evidence** Construct an argument with evidence, data, and/or a model.

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