



NGSS Classroom Activity:

Scientific Classification



FOCUS QUESTION:

“What patterns do we notice among the various objects, and how could we organize them into groups?”

SCIENTIFIC CLASSIFICATION BACKGROUND AND LESSON OVERVIEW

What’s this, and what’s that? How do scientists classify living things and non-living things? What do they look for? How can they group them together? The Next Generation Science Standards (NGSS) note that “noticing patterns is often a first step to organizing phenomena and asking scientific questions about how and why these patterns occur.” As Part of the NGSS Performance Expectations, students will need to compare plant and animal life of different habitats. To introduce this concept of scientific classification, and to make sense of the idea in general, students will have the opportunity to start practicing sorting and grouping based on the patterns they observe during this introductory exploration.

NEXT GENERATION SCIENCE STANDARDS

Performance Expectation

K-2-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive
**Also Relates to: 1-LS1-2 & 2-LS4-1*

<p>Science and Engineering Practices:</p> <ul style="list-style-type: none"> • Asking Questions and Defining Problems • Constructing Explanations and Designing Solutions
<p>Disciplinary Core Ideas:</p> <ul style="list-style-type: none"> • LS1.A: Structure and Function
<p>Cross Cutting Concepts:</p> <ul style="list-style-type: none"> • Patterns: Patterns can be observed, used to describe phenomena, and used as evidence. • Structure and Function: The shape and stability of structures of natural and designed objects are related to their function(s)

Goals

- Students will begin to understand that there are multiple ways to classify objects
- Students will recognize the function and structure of objects and compare and contrast
- Students will naturally explore and organize according to the patterns and prompt questions about the relationships of the given objects

Inspiring respect and stewardship for the marine environment through experiential learning



Objectives

- Students recognize that these given materials are the way they are (in terms of shape, structure, material used, etc.) to achieve a specific or many functions
- Students explore classification in a new way, which will get them thinking about what they observe when identifying and classifying animals rather than what they “know”

Materials for Every Student Group

- 8-10 various classroom objects: pencil, pen, marker, ruler, tape, paper, etc.
- Large sheet of paper
- Markers or writing utensils

Activity

Duration: 10-45 minutes (depending on grade, background knowledge, and extensions used)

Procedure

1. Explain to students that there are many objects we use every day in our classroom, and for this lesson, we will explore ways to organize and categorize these objects, according to a framework that student groups agree upon.
2. Have students form small groups (2-4 students) and give each group all of the listed materials
3. Ask them to create 2-5 categories on paper, and put these objects into categories they agree on.
4. After students have placed their objects into their chosen categories, and agreed on an arrangement with their team they will share out their results.

Conclusion and Discussion

Student groups could share their results with the class through one, or all of the following:

1. Students write a screen cast of their thoughts:
We placed _____, _____ and _____ in the _____ group. We think this because _____...
2. Students have a general discussion:
 - *How is organizing these objects helpful? Do we need it?*
 - *Is there any type of classification better than another?*
 - *Is there a benefit to sticking to one standardized system of classification?*
3. Student groups rotate to other group tables to view what other students came up with, “gallery style”.

Return to the focus question: *“What patterns do we notice among the various objects, and how could we organize them into groups?”*

Extended Question: *“How do you think classification helps scientist study plants and animals?”*

Students may think on their own, discuss with a partner, and/or write their ideas in their science notebook about their questions and the results of the activity.