



Unit: Classification

Lesson 3 How Do We Classify Animals?

<p>Enduring Value: Patterns Allow for Prediction</p>	<p>Essential Question(s): Why are organisms classified? How are organisms classified?</p>	<p>National Science Education Standards (NSES, 1996) Content: Life Science K-4 Characteristics of organisms Life cycles of organisms Organisms and environments 5-8 Structure and function of living systems Populations and ecosystems Diversity and adaptation of organisms</p>
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Engage and Increase Background Knowledge:

- In order to engage students in the topic of animal classification, start by reading the book *Fish is Fish* by Leo Lionni. Open a discussion about what students know about how animals are alike and different, and start the **K** – *What do student know?* on a classroom **KWL** chart.
- To increase background knowledge play a classification game as a class or in small groups. An Internet game idea would be the Kid’s Corner animal classification game:
http://www.sheppardsoftware.com/content/animals/kidscorner/classification/kc_classification_main.htm
 and
<http://www.sheppardsoftware.com/content/animals/kidscorner/games/animalclassgame.htm>
- Once the students have completed the game, ask them what they know about how zoo animals are placed in an appropriate environment in the zoo.
Do zoo officials place them based on how they are alike or how they are different? Do they place them based on if they are predator or prey? What if animals come from an environment that is very different from the one at the zoo? How or where do they place these animals? For example, where and how would they place a seal in a zoo in Arizona?
- Ask students what they want to know about this topic, the **W** – *What do you want to know?* If possible, visit a zoo as a field trip. Make an appointment with the educational staff at the zoo to learn more about this topic. Have the students prepared in advance with questions. If that is not possible, visit a virtual zoo at: <http://www.waza.org/en/zoo> <http://www.virtualzoo.org/>
<http://www.zoobooks.com/virtualzoo.aspx>
- Give students time to research and then ask them again what they want to know (**K** – *What do you want to know?*). Add that information to the KWL chart.
- Ask students how they would create a zoo in terms of animal placement, if they could create their own zoo. Choose student groups based on their interest in how they would create a zoo.
- Students, in small groups based on interest, create or design a zoo. All classification groups must be represented and labeled.
- Differentiation can be achieved through numbers of organisms in each category, depth in research, and details about placement.

Classification

Materials:

whiteboards or poster paper, markers, computer with projector or other images, computers for research and/or books on animals, zoos, and classification

Explore (Investigate):

1. Using the rubric to support success, students **investigate animal classification for their zoo project** with teacher scaffolding learning as needed.
2. The teacher uses questioning to move the students forward.
3. Using the materials provided the students are given time to explore classification. They may request additional materials if they have more ideas that they would like to explore.

Get Ready to Present:

Using the rubric to support success, students work in collaborative groups to create a zoo to present to the class. The zoo will be drawn on whiteboards or chart paper and will include their lists of categories of which animals are placed near each other, the Big Idea, and the Evidence from their experiments that supports the Big Idea. *What patterns do they see?* Scaffold and support students as needed.

Present:

Students self-grade and hand in the rubric. Student groups present, and the audience asks questions and writes a response for each presentation that will be handed in as part of the project.

Build Class Consensus of the Big Idea to Post in the Classroom:

Facilitate discussion with students to determine a class consensus about the importance of classifying animals. See example **Student Group Big Idea** and **Example Class Consensus** below. *Does this consensus affect the earlier one or stand on its own?* Have students discuss and determine this.

STEM Vocabulary:

classification
patterns
mammals
reptiles
fish
birds
amphibians
mollusks
insects
echinoderms
arthropods
sharks
bony fishes
kingdom
phylum
class
order
family
genus
species

Example Group Presentation:

1. Created or designed Zoo
2. Student Group **Big Idea:** *Animals are placed in classification groups based on similarities and differences.*
3. Evidence: Notes from research that support Big Idea

Example Class Consensus:

Animals are classified in a hierarchy of categories depending on similarities and differences.

Connections:

human genetics
nature via or versus nurture
evolution
patterns of inheritance

