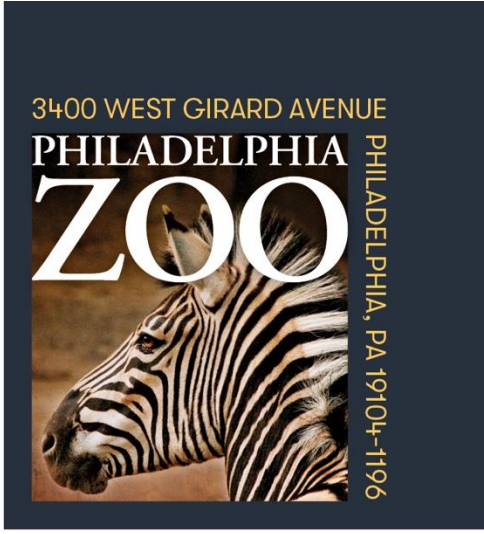
# Characteristics of Life
# 3-5 Post-Activity




## Lesson Summary
Students use references to differentiate pictures of animals and use characteristics to classify animals into groups.

## Objectives
Students will be able to differentiate animals into groups based on characteristics
Students will be able to classify animals into groups by name

## Essential Question
How are living things similar or different from one another?

## Materials
- Photos of different animals (examples provided at end of the lesson)
- References with more information about animals (example provided at end of the lesson)
- Paper (or worksheet such as provided at the end of the lesson)
- Writing utensils

## Prep
1. 1 week before: Select photos to present to students.
2. 1 day before: Print and cut out photos for students. Prepare as many sets of media as there will be groups. Prepare worksheets and references as needed as well.

## Key Terms
- **Classification:** the assignment of organisms to groups that share characteristics
- **Invertebrate:** an animal without a backbone, including insects, arachnids, worms, mollusks, crustaceans, and more
- **Vertebrate:** an animal with a backbone, including mammals, birds, reptiles, amphibians, and fish
- **Mammal:** any warm-blooded vertebrate having the body more or less covered with hair, nourishing the young with milk from the mammary glands, and giving birth to live young
- **Bird:** any warm-blooded vertebrate having a body covered with feathers, forelimbs modified into wings, scaly legs, a beak (no teeth), and bearing young in a hard-shelled egg
- **Reptile:** any cold-blooded vertebrate having a body covered with scales that shed, and bearing young in a typically soft-shelled egg
- **Amphibian:** any cold-blooded vertebrate in which the larvae being typically aquatic, breathing by gills, and the adults being typically semiterrestrial, breathing by lungs and through the moist, glandular skin

## Background
There are many ways in which organisms (living things) can be classified. This process involves grouping organisms together based on shared characteristics. Some of these characteristics might include habitat, presence of a backbone, food source, diet, how they move, etc. By observing these organisms and sorting through their similarities and differences, we gain a better understanding of them and their needs, and are therefore able to better work toward protecting and preserving all living things!


## Implementation

1. Excite: Ask students to share their favorite animals.

2. Explore: Ask students to share some ways that we could put animals into groups based on shared characteristics. This could include habitat, presence of a backbone, food source, diet, how they move, etc.

3. Explain: Share with students that there are certainly many ways that animals could be put into groups. Scientists make observations of animals to sort them into groups. This process is called classification.

4. Share with students that there are many layers to classification. One of the first of these layers is looking into if the animal has a backbone or not. Animals that have a backbone are called vertebrates and animals without a backbone are called invertebrates. Ask the students to share some examples of animals they might know of that are in either category.

5. Share with the students that today they will be focusing on vertebrate animals. Animals that are vertebrates can further be classified into groups including mammals, birds, reptiles, amphibians, and fish.

6. Elaborate: Split the class into groups and provide each group with a set of animal photos. Tell the students to select one animal at a time. For each animal, they should use using previous knowledge, observations, the informational chart provided, or other research or references to determine if the selected animal is a mammal, bird, reptile, or amphibian. Students should also be ready to explain their reasoning. Students should classify as many animals as possible, and as many different animals as possible, in a given time.

7. Evaluate: Ask the class to share what features they used to determine which animas belonged in each classification. Ask the class to share which features they think are the most obvious or most challenging to use to classify animals.

## Expansion

If you visited the Zoo, consider using your students' observations of animals at the Zoo to help classify the animals into their proper groups.

## Curriculum References

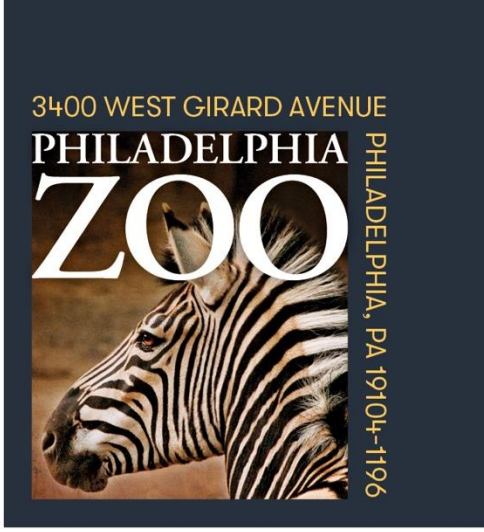
3.1.K.A1, 3.1.1.A1, 3.1.3.A1, 3.1.4.A1, K-LS1-1

Name: _____

Teacher: _____

School: _____

Date: _____




Scientists put animals into groups based on shared features. In the chart below, create a list of animals. Then, determine if this animal is a mammal, bird, reptile, or amphibian using previous knowledge, observations, or other research and references. Share your reasoning for this classification in the final column of the chart.

| Mammal | Bird | Reptile | Amphibian |
|---|---|---|---|
| • Fur or hair<br>• Ear flaps<br>• Born alive<br>• Drink milk<br>• Warm-blooded | • Feathers<br>• Beak<br>• Wings<br>• Hatch from hard eggs<br>• Warm-blooded | • Scales<br>• Shed skin as they grow<br>• Hatch from soft eggs<br>• Cold-blooded | • Absorbent skin<br>• Hatch from eggs in water<br>• Go through metamorphosis<br>• Cold-blooded |

| Animal | Classification | Reasoning |
|---|---|---|
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## Additional Resources

Here are some image options to print and provide to the students

Black & White Ruffed Lemur

Reticulated Giraffe

Indian Peafowl

Red Panda

Cheetah

Galapagos Tortoise

Western Lowland Gorilla

Andean Bear

Splendid Tree Frog

Two-toed Sloth

Giant River Otter

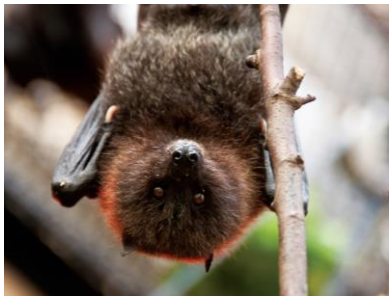
Humboldt Penguin

Snow Leopard

Southern White Rhinoceros

Blue and Gold Macaw

Golden Lion Tamarin



Rodrigues Fruit Bat

Gaboon Viper

| Animal Fact Chart | Bat | Bear | Cheetah | Frog | Giraffe | Gorilla | Lemur | Leopard | Macaw | Otter | Panda | Peafowl | Penguin | Rhino | Sloth | Tamarin | Tortoise | Viper |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Is terrestrial | X | X | X | | X | X | X | X | X | | X | X | | X | X | X | X | X |
| Is aquatic | | | | | | | | | | | | | | | | | | |
| Is semi-aquatic | | | | X | | | | | | X | | | X | | | | | |
| Has hair or fur | X | X | X | | X | X | X | X | | X | X | | | X | X | X | | |
| Has feathers | | | | | | | | | X | | | X | X | | | | | |
| Has scales | | | | | | | | | | | | | | | | | X | X |
| Has absorbent skin | | | | X | | | | | | | | | | | | | | |
| Has a back bone | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Gives live birth | X | X | X | | X | X | X | X | | X | X | | | X | X | X | | |
| Lays eggs | | | | X | | | | | X | | | X | X | | | | X | X |
| Is a producer | | | | | | | | | | | | | | | | | | |
| Is a consumer | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Is a herbivore | X | | | | X | X | X | | X | | X | | | X | X | | X | |
| Is a carnivore | | | X | X | | | | X | | X | | | X | | | X | | X |
| Is an omnivore | | X | | | | | | | | | | X | | | | | | |
| Moves by walking/hopping | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | |
| Moves by swimming | | | | X | | | | | | X | | | X | | | | | |
| Moves by flying | X | | | | | | | | X | | | X | | | | | | |
| Moves by slithering | | | | | | | | | | | | | | | | | | X |
| Has a tail | | X | X | | X | | X | X | X | X | X | X | X | X | X | X | X | X |
| Has 0 legs | | | | | | | | | | | | | | | | | | X |
| Has 2 legs | X | | | | | X | | | X | | | X | X | | | | | |
| Has 4 legs | | X | X | X | X | (X) | X | X | | X | X | | | X | X | X | X | |