Animal Classifications
3rd Grade
Matt Yung, Laura England, Summer Wiles

1. References:
   - Columbus Public Schools 2005 3rd Grade Curriculum Guide p. 47-78

2. Benchmarks:
   GLI LS-3: Classify animals according to their characteristics (e.g. body coverings and body structures).
   GLI LS-2: Relate animal structures to their specific survival functions (e.g. obtaining food, escaping or hiding from enemies)

3. Objectives:
   Students will be able to identify to distinguish vertebrates from invertebrates and also identify distinguishing characteristics of mammals, fish, reptiles, amphibians, and birds.

4. Materials:
   - Balls (tennis, baseball, soccer, basketball, golf, stress relief, softball, football, racquet)
   - Deck(s) of cards
   - Paper shapes of various colors and sizes. More specifically:
     - Sizes (small, medium, large, etc.)
     - Colors (white, red, blue, etc.)
     - Shapes (square, circle, triangle, etc.)
     - This should total 27 (3x3x3) distinct shapes for each group

5. Initial Demonstration:
   Show the balls to the class. To them that you want to put the balls into two categories. Place the first ball in one group. When sorting the other balls, ask the students if the ball should be in the first or second group. You may have the class vote on each ball or ask individual students. When a ball is placed in a group, have the student(s) explain why the decision was made. From the balls, some various ways that students may choose to separate them may include:
   - Solid vs. air in the middle
   - White vs. not white
   - Larger vs. smaller
   - Harder vs. softer
Balls that are hit with a club/bat vs. balls that are used with hands/feet

Once the students have organized the balls, propose one of the above-mentioned sorting schemes that they did not pick. Ask them if a person could also choose to sort the balls in this method. Make the point that although we might choose a certain way to sort/organize something, there can be many alternative ways.

Finally, once the balls have been sorted, have the students define the characteristics that are in common within each group of balls. Then, ask the students what we could infer if someone told us that a ball belonged to one of the groups (even if we had never seen the ball). Namely, we would be able to infer that it shared the same common characteristics that are found within each subgroup of balls.

For an additional connection with organization, you can ask the students about a grocery store or video store. Ask them to explain why they think all the fruit, meat, and cereal have their own sections. Video stores are organized alphabetically and/or by genre.

6. Target Observations:

- Things that might initially seem quite different may be the same in some ways.
- Grouping items helps us to learn about them.

7. Target Model:

- There can be several ways to group the same items.
- Grouping items helps us learn about them.

8. Procedure:

Give the class part of a deck of cards or the colored shapes of various sizes made of paper that you’ve already cut out. You can even give them some cards and some shapes too. They may work in teams of 1-4. Ask the class to take about 3-5 minutes to organize the shapes based on whatever criteria they want. They can make as many or as few groups as they would like. At the end of 3-5 minutes, have some or all of the groups show the rest of the class how/why the organized their items.

If you would like to, you may also hand out the Shape Classification Worksheet as found in the Curriculum Guide (the point of this would be to help the students to visualize on paper how the organization is done – a new, more visually appealing worksheet could also be created).

9. Target Observations:

- Different groups of students may organize the same items differently.
- There are multiple ways to organize things.
- Objects in different groups may have some characteristics in common.
10. Target Revised Model:

- Grouping things can sometimes be difficult because things share some common characteristics, but not others.
- Certain guidelines/criteria must be present to allow for classification of similar objects.

11. Procedure:

At this point you will begin introduce the types of animals. Talk about the big classification of animals into: *invertebrates and vertebrates*. Talk about how vertebrates are separated into: *birds, fish, mammals, reptiles, amphibians, and reptiles*.

After reviewing the characteristics of the five types of vertebrates, give the students the *Animal Classification Worksheet* as found in the Curriculum Guide (p. 54).

At the end of the lesson, have jars/hats containing slips of paper with these labels:
  - Hat 1: lung, gills, both (lungs/gills), ?
  - Hat 2: warm blooded, cold blooded, ?
  - Hat 3: fur/hair, scaly dry skin, smooth moist skin, feathers/wings, ?
  - Hat 4: live births, lay eggs, ?
  - Hat 5: backbone, no backbone, ?

You can pull pieces of paper from each hat and have students try to identify the type of animal as quickly as possible. If you pull out a slip from each hat, you will find that sometimes there is no animal that has all of these characteristics (you can either show this to the class, or choose to have the class identify the animal based on one or two pieces of information).

If time permits, students can be given the task to write a short research paper on an animal.

12. Target Observations:

- Animals are classified by various traits (warm/cold blooded), (eggs/live birth), (fur/scaly skin/smooth skin), etc.
- Classification helps us to know something about unfamiliar animals/objects, based on the common characteristics they might have with other things we know that are in a certain group.

13. Target Revised Model:

- What conclusions students should reach after making observations during the initial demonstration and working through the preceding procedures.
- Classification of organisms makes it easier to identify an animal and study it and its traits (structure, behavior, food needs, chemical composition, etc.).
14. Summary:

Students will be able to distinguish between vertebrates and invertebrates. They will also be able to identify birds, fish, mammals, reptiles, and amphibians given a set of characteristics possessed by the organism.