

**Lesson Objectives:**

Club members and parents will:

- Use observation skills to separate animals into groups based on similarities and differences

Time: 15 –20 minutes

Equipment and supplies:

- Handout of animals; one copy for each team
- Scissors
- Pencil
- Newsprint or large paper

Preparations:

- Review Lesson
- Gather equipment and supplies

Classifying Animals

Introduction:

Scientists identify animals by grouping them according to their similarities and differences. They give every living creature a scientific name so that scientists around the world use the same name. The scientific names are in Latin.

For this activity 4-H'ers will observe pictures of several animals, identify both the characteristics that make them alike and those that make them different, and divide them into two groups based on those characteristics. 4-H members are encouraged to come up with their own classification and use some physical attributes to name the animals. They don't have to rely on scientific classifications or taxonomy.

Lesson: *(read aloud to 4-H members)*

What do we call the people who live on our planet? Yes, humans. That is the word for us in English. Every language has a word to name humans. Because scientists around the world speak different languages, they communicate with each other using a Latin or Scientific name for every living organism. For example, the scientific name for humans is Homo Sapiens. By using this scientific name, scientists who speak different languages know they are referring to the same thing.

We can't have several names for the same thing in a single language. For example, an insect that I know as a firefly you might call a lightning bug; someone else may call it a glowworm. Several different species of insects are luminescent, which means that they light up. So, if we want to be certain we are talking about the very same insect, we would have to know its scientific name.

One way in which scientists can distinguish one organism from another is to look for similarities and differences between them. Organisms are grouped based on their characteristics. Animals that belong in the reptile group will share characteristics like having scales on their skin. Can you use a common name to give an example of a mammal? Insect? Amphibian? Bird? Reptile?

In this activity, you will group pictures of animals by characteristics they have in common. This is called classifying animals. For example, what does a horse have in common with a dog? A horse with a bird?

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But first we need to learn another new term: “dichotomous key.” A dichotomous key divides a group of organisms into two separate groups that have a different characteristics (Refer to the dichotomous key example on next page) If we look at a horse, dog, and bird, we might group them by how many legs they have—two legs or four legs.

To classify a group of animals, first look at the pictures and pick a characteristic that one or several of the animals have, for example, four legs, fins, a beak, wings, etc. When you have chosen one characteristic, separate the pictures into two groups, animals that have the specific characteristic and ones that don’t. You will have a dichotomous key as you classify the animals.

Record the characteristic that you have used to separate the group on the dichotomous key. Then continue to divide this new group into two groups. Sort the groups by those that have another new characteristic and those that don’t. Record the characteristic you use to divide each new group. You will be finished when you can no longer find a characteristic that separates the animals remaining group.

Activity:

1. Divide the 4-H members into teams of three to four members. Distribute to each team a set of pictures. Students are to cut out the pictures of the animals.
2. Each team is to draw a dichotomous key on sheets of large paper.
3. Team members are to lay out the pictures across the top of the newsprint or large paper. Each team should decide what characteristic to use to divide the pictures into two groups—those that have the characteristic and those that don’t.
4. Teams should record the characteristic they are using in the boxes under the two groups.
5. Team then look at one new group that was formed and choose a characteristic by which that group can be divided again into those that have that characteristic and those that don’t. Teams should record the characteristic they are using.
6. Teams continue this process with all new groups until they can no longer be subdivided.
7. When a group can no longer be divided, teams can name the animals in that group. Each group is to have a two-part name. Encourage students to be creative with the names.

Note:

Because teams are selecting characteristics for the classifying process and creatively naming the animals, there are no “right” answers. As teams divide groups by the guidelines of “all that have” and “all that do not have,” check that students’ dichotomous keys follow this principle and that they are separating groups correctly.

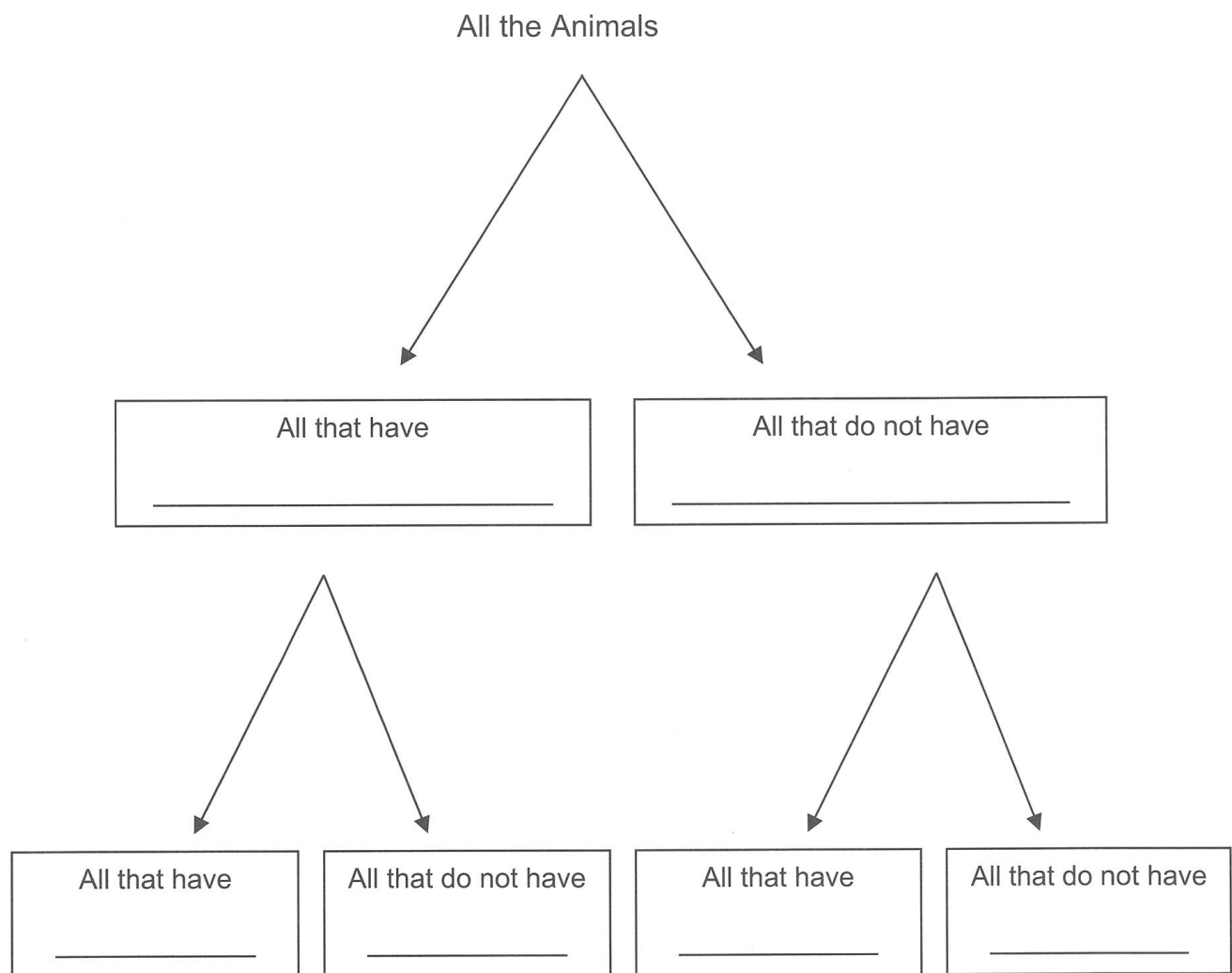
Process:

- Did your team find it difficult to decide on a characteristic to divide a group of animals?
- When you listened to the other teams explain their dichotomous keys, did you agree with the way they divided each group of animals? Why or why not?
- Were there any characteristics discussed in your team that you decided not to use to divide groups of animals? Why did you choose not to use these characteristics?
- If there were several characteristics to choose from, how did you decide which one to use?
- How did your team decide to name the groups or single animals?
- When you subdivided one group, were the groups that resulted about the same size or was one much smaller than the other? Why?

Apply:

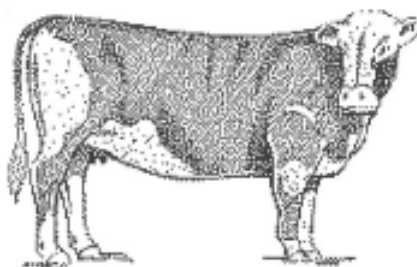
- If you were to start this activity again, what would you do differently? Why?
- How will you look at animals differently after this activity?
- What needs to be organized in your life today? How could you use the procedure of continuing to divide groups into two parts to accomplish your organizational task?

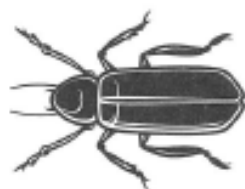
Dichotomous Key to Animal Classification

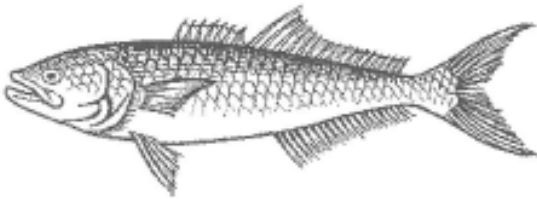


- Continue dividing large groups into two smaller groups using new characteristics until you can no longer find a characteristic that divides the group.
- When you can no longer divide groups, name animals with two-part names. Be creative in naming the animals.









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Sources & Additional Lesson info:

4-H Club GO TO Resources is being offered to 4-H clubs in Boone, DeKalb and Ogle Counties as a way to enrich and enhance 4-H experiences and programming at the club level. It is the goal of the Extension staff to assist 4-H leaders and officers in providing simple hands-on activities on a monthly basis that can broaden the 4-H club experience and as a result heighten positive youth development.

Resources: University of Illinois Extension: Scientific Inquiry with Butterflies: Activity 1.1

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