Lab 2: Classification

Goals

1. To understand the importance of classifying living organisms into similar groups

2. To demonstrate the understanding of classification by designing a dichotomous key

Materials and Equipment

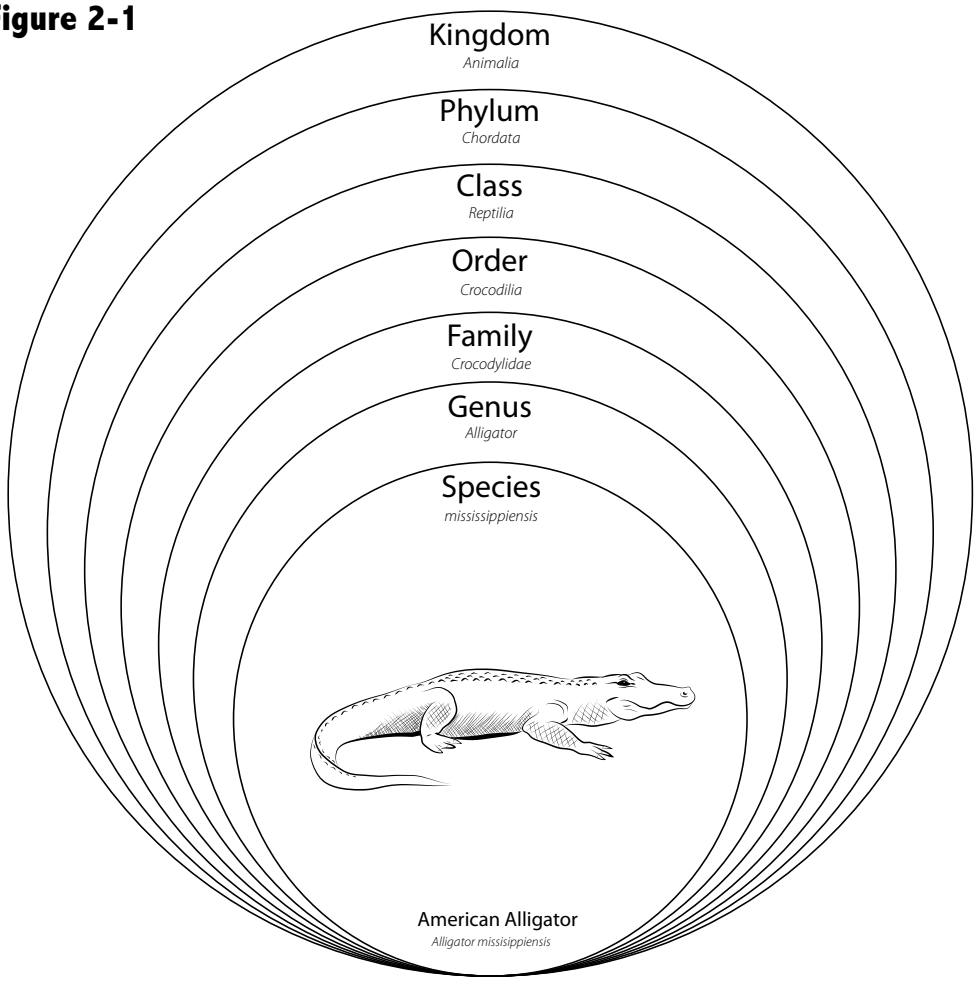
Pictures of items and organisms for classification

Introduction

God created an abundant and diverse world. In order to better understand His creations, scientists developed seven levels of classification to organize living things: **Kingdom, Phylum, Class, Order, Family, Genus,** and **Species.** See the diagram below

These classifications are based on common characteristics that the organisms share. The Kingdom level includes the largest number of organisms with broad characteristics that are shared by many

Figure 2-1



organisms. As you progress through the other levels of classification, the characteristics become more specific and the number of organisms that share these characteristics narrows. Organisms that are in the same family share more characteristics and are more similar than organisms that are in the same phylum.

Without these distinctions and groupings, it would be very hard for scientists to study and learn more about God's world. Imagine trying to study all the books in a library without having them grouped into fiction, non-fiction, children's literature etc. You wouldn't even know where to begin.

The system of classification that scientists have developed also makes it possible for us to identify unknown organisms. Scientists can create dichotomous keys to help identify an unknown organism by leading the user to the correct name through a series of multiple-choice steps. A dichotomous key is a series of identifying questions that a user answers according to the characteristics of the organism they are trying to identify. Each choice selected reduces the number of possible organisms that fit that description and leads the user to the name of the organism or another step to narrow the field further.

Devotional

"Now the earth was formless and empty, darkness was over the surface of the deep, and the Spirit of God was hovering over the waters. And God said, "Let there be light," and there was light. God saw that the light was good, and he separated the light from the darkness." Gen 1:2-4

Principle: God's world is organized.

God's world is organized. We need to look for the ways God organized his world if we want to understand it. For example, there are thousands of different types of insects but they all have six legs. There are hundreds of types of spiders but they all have eight legs. In just the number of legs on different creatures, we can see simple organized patterns.

When we classify things and creatures, we organize our world to understand it better. When we do this properly, we can see a pattern that God planned when he made all creation. You will classify different types of plants in this lab. Classification is simply describing a pattern that God put into creation. Our world is not a random chaos. It is well ordered and organized. We can see this organization when we make classifications.

Procedure

1. Choose one of the pictures from Group 1 on the classification sheet and see if you can determine the name of it by using the dichotomous key on the next page.

2. Repeat procedure 1 with the rest of the pictures in Group 1.

3. Using the pictures of living things in Group 2, design your own dichotomous key that others could use to identify one of your items.

4. Start by determining a characteristic that will divide your examples into two groups and write the first step of your key based on this characteristic.

5. Continue to use identifying characteristics to divide your groups into two smaller groups until you only have one item remaining in each group. At this point, you have the item.

1. a. The item is a fruit	Go to Step 3
b. The item is a vegetable	Go to Step 2

2. a. The vegetable is orange	Carrot
b. The vegetable is green	Broccoli

3. a. The fruit has small, brown seeds that are easily visible on the outside of the fruit	Strawberry
b. The fruit does not have easily visible seeds on the outside	Go to Step 4

4. a. The fruit is smaller than a walnut	Grape
b. The fruit is larger than a walnut	Go to Step 5

5. a. The fruit is long and slender	Banana
b. The fruit is spherical	Apple

Lab 2

Questions for Classification

1. Using the given dichotomous key, were you able to correctly identify your item in Step 1? Is a dichotomous key an effective way of identifying an unknown item?

2. How does a dichotomous key make it easier to identify an unknown organism?

3. Record the dichotomous key that you developed for your pictures or examples of living organisms.