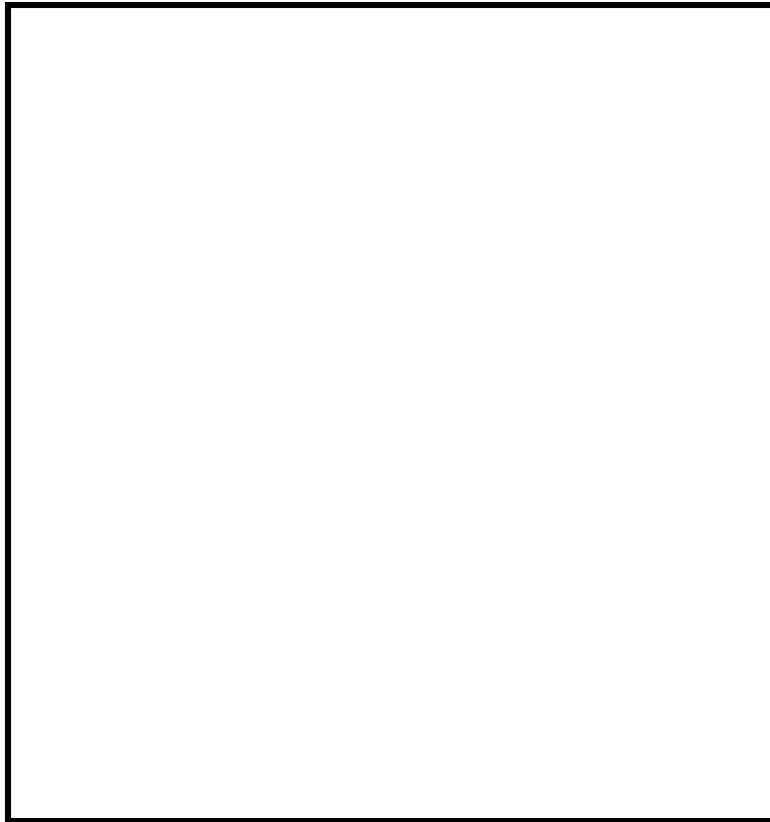
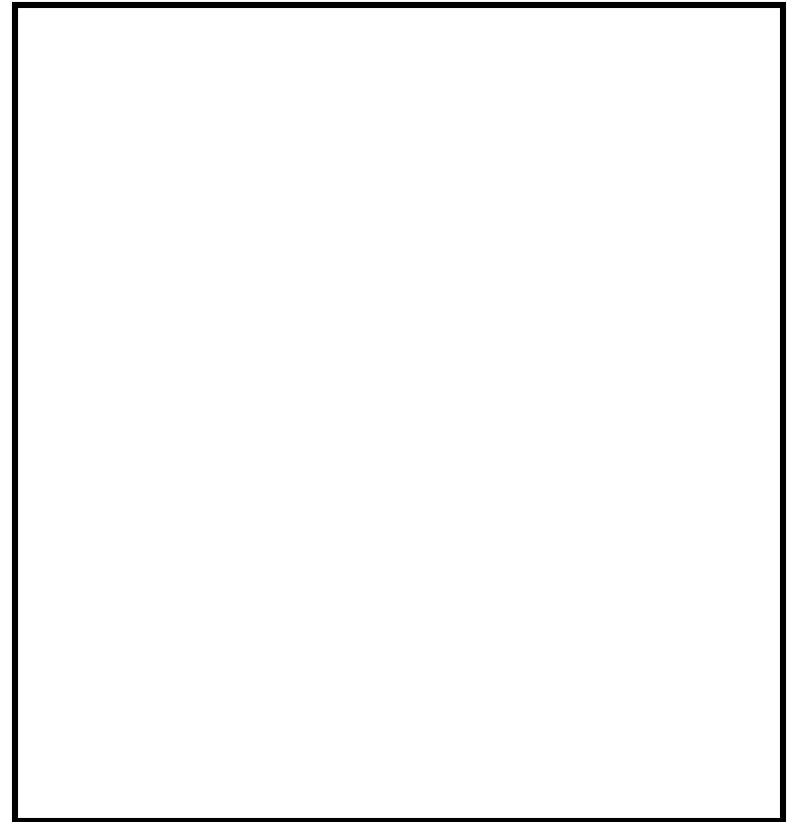


Lilly	Microwave	Shark	Motorcycle
Washer Machine	Dog	Truck	Stove
Oak Tree	Bicycle	Dishwasher	Cat
Quad	Toaster	Trout	Tulip
Razor Scooter	Dryer	Squirrel	Skateboard
Bass	Car	Pine Tree	Rose

Classify the items in the envelope into two separate categories. Give each category a name. List each item in boxes below.

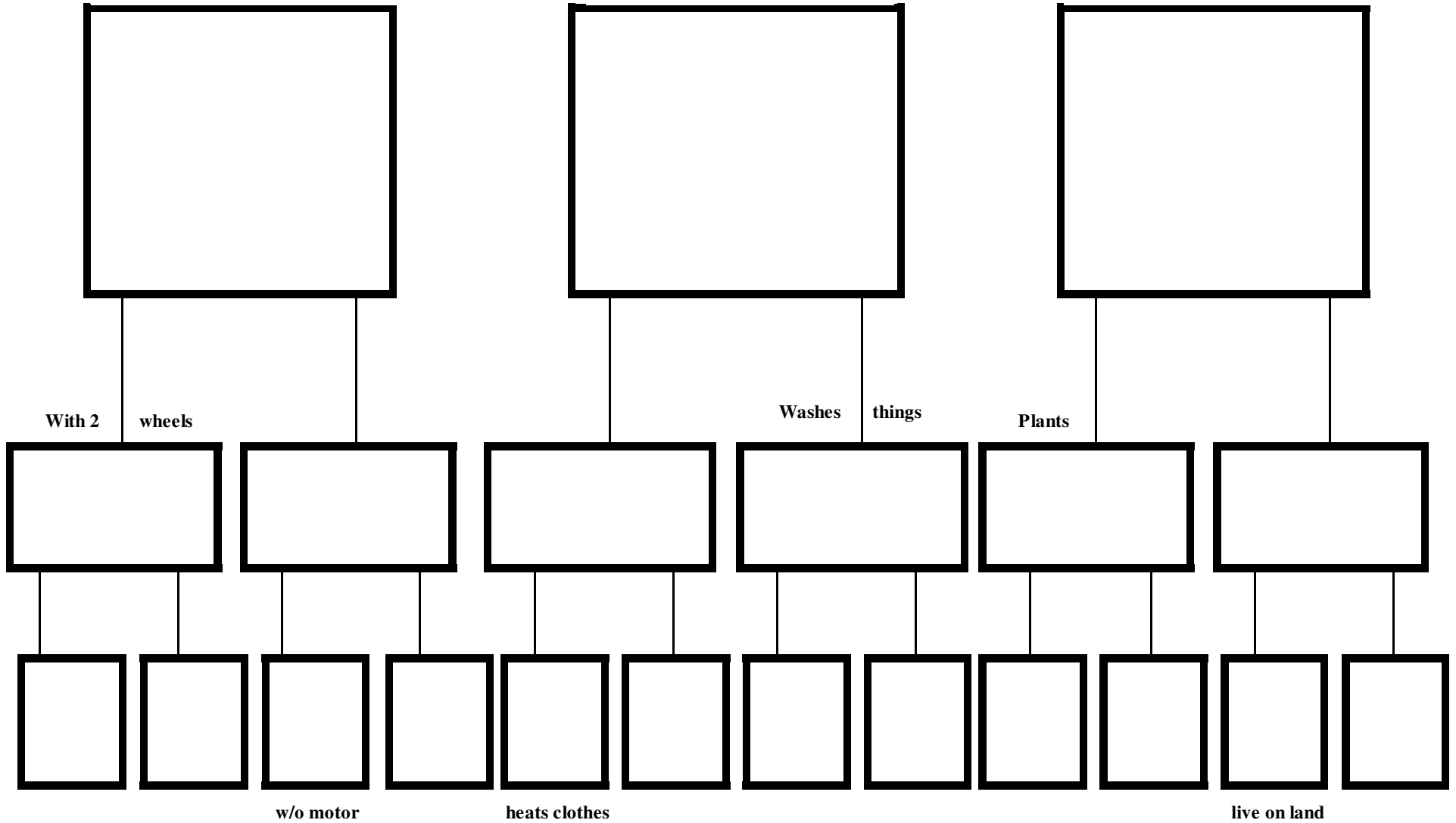




Describe the process you and your group members went through when developing your two categories.

Methods of Transportation

Living Things

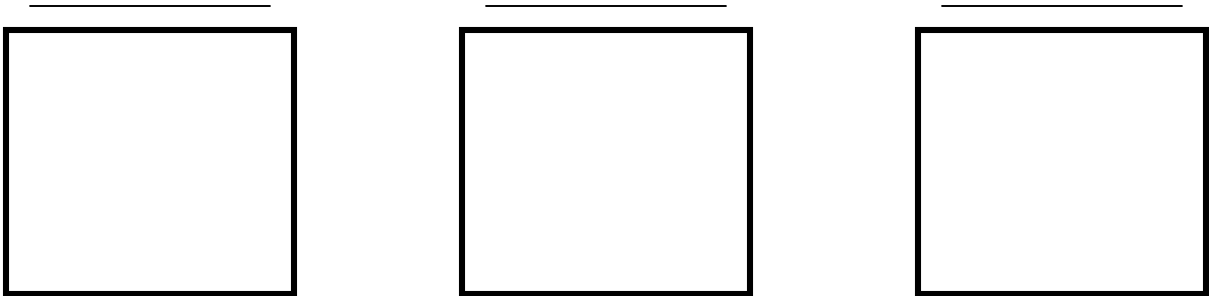


Please classify the following objects: Lilly, Microwave, Shark, Motorcycle, Washer Machine, Dog, Truck, Stove, Oak Tree, Bicycle, Dishwasher, Cat, Quad, Toaster, Trout, Tulip, Razor Scooter, Dryer, Squirrel, Skateboard, Bass, Car, Pine Tree, Rose

Aim: How do scientists classify organisms into different groups?

Taxonomy

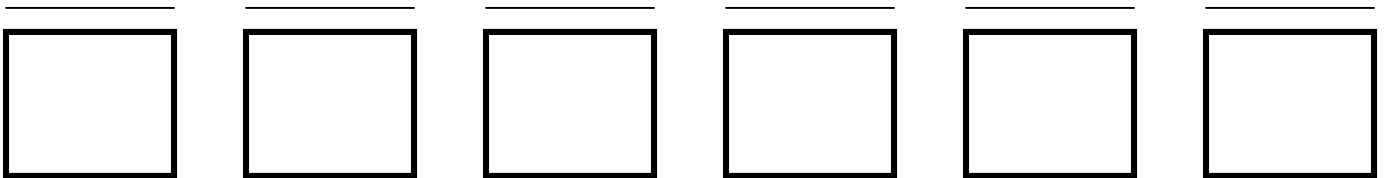
Level 1:



How many different categories are in Level 1 of this classification?

How many total items (from all categories) are in Level 1?

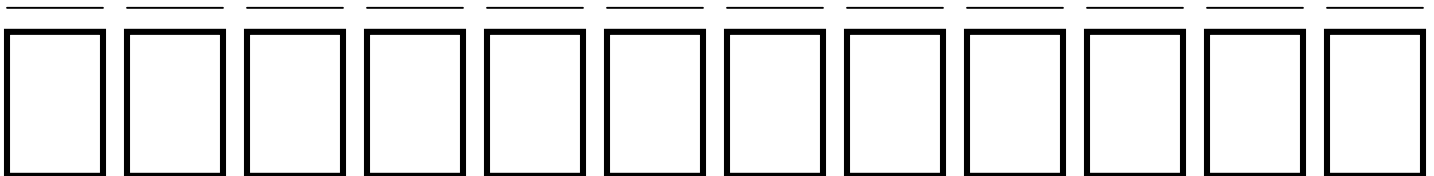
Level 2:



How many different categories are in Level 2 of this classification?

How many total items (from all categories) are in Level 2?

Level 3:



How many different categories are in Level 3 of this classification?

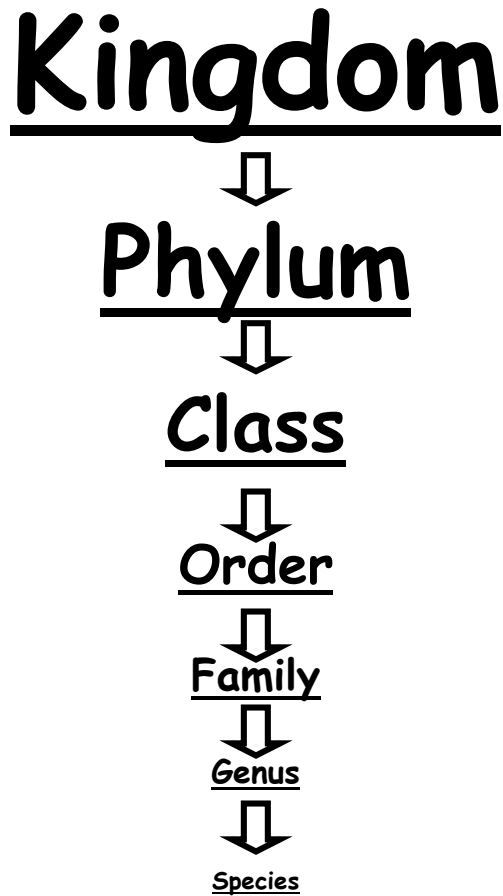
How many total items (from all categories) are in Level 3?

Levels of Classification

-
-

Taxonomy: the science of classifying things.

7 Levels of Classification



Conclusion:

What level of classification has the greatest number of organisms? The Least?

At what level of classification do organisms have the most common characteristics?

King Phillip Caught One Fish Going South

Aim: What are the 7 level of classification?

King Phillip Caught One Fish Going South

Kingdom:

Phylum:

Class:

Order:

Family:

Genus:

Species:

<u>Level</u>	<u>Human</u>	<u>Bacterium</u> <u>(yogurt)</u>	<u>Bread Mold</u>	<u>Ameba</u>	<u>Sunflower</u>
<u>Kingdom</u>	Animalia	Monera	Fungi	Protista	Plantae
<u>Phylum</u>	Chordata	Eubacteriaces	Zygomycota	Sarcodina	Tracheophyta
<u>Class</u>	Mammalia	Schizomycetes	Phycomycetes	Lobosa	Anthrophyta
<u>Order</u>	Primates	Eubacteriales	Mucorales	Amoebina	Asterales
<u>Family</u>	Homindae	Lactobacilla	Mucoracease	Amoebidae	Compositae
<u>Genus</u>	Homo	Lactobacillus	Rhizopus	Amoeba	Helianthus
<u>Species</u>	sapiens	bulgaris	stonifer	proteus	annus

7 Levels of Classification

Kingdom: classification depends largely on an organism's cell structure, how it gets energy, and its movement and reproductive characteristics.

Phylum: the largest group in the animal kingdom. For example, bears are classified in the phylum Chordata. Animals in this Phylum have a flexible, skeletal rod called a notochord.

Class: a Phylum is divided into classes. Bears belong to the class Mammalia, endothermic animals, whose females produce milk.

Order: a class is divided into orders. Bears are members of the Order Carnivora.

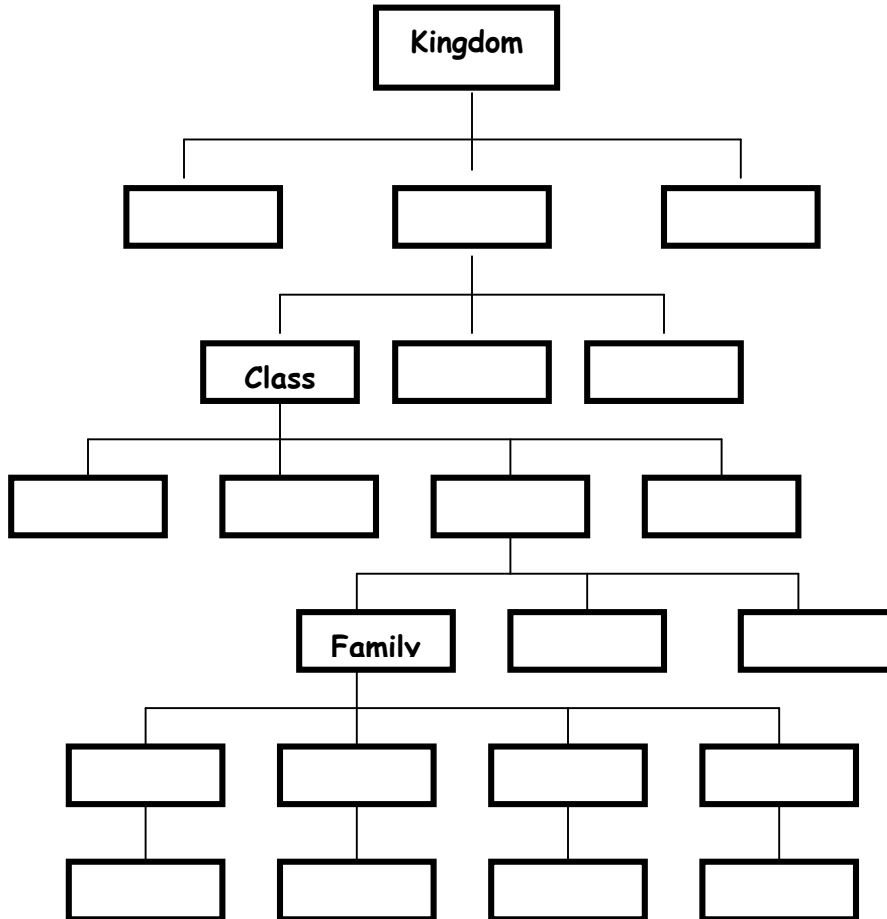
Family: an order is divided into families. A bear belongs to the family Ursidae.

Genus: each family consists of at least one genus. A polar bear belongs to the genus Ursus.

Species: a genus contains one or more species. A species is made up of related organisms that are able to mate and reproduce offspring of the same type.

Aim: What are the 5 Kingdoms?

Do Now: Complete the following chart.



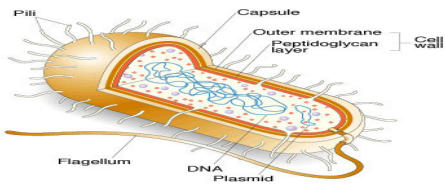
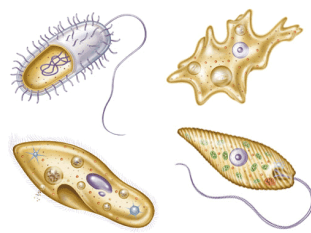

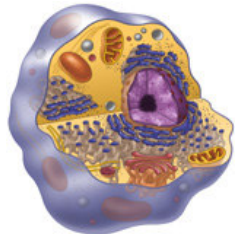
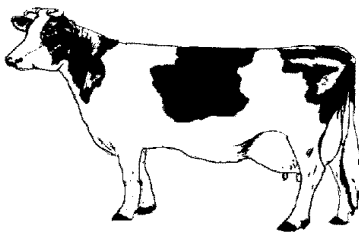
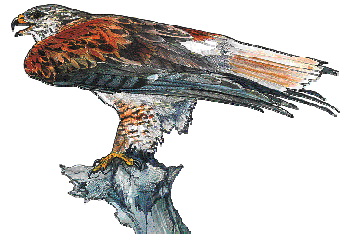
Conclusion:

Taxonomy

K , P , C , O , F , G , S

Most _____ → Most _____

In each column, state the difference between the organisms in set A and the organisms in set B

<p><u>Set A</u></p> 	<p><u>Set A</u></p> 	<p><u>Set A</u></p> 
<p><u>Set B</u></p> 	<p><u>Set B</u></p> 	<p><u>Set B</u></p> 
<p><u>Differences</u></p>	<p><u>Differences</u></p>	<p><u>Differences</u></p>
<p>1. P _____ or</p> <p>2. E _____</p>	<p>1. U _____ or</p> <p>2. M _____</p>	<p>1. A _____ or</p> <p>2. H _____</p>

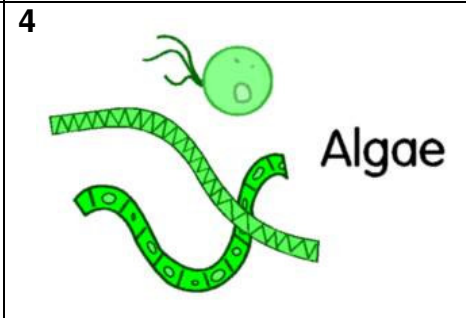
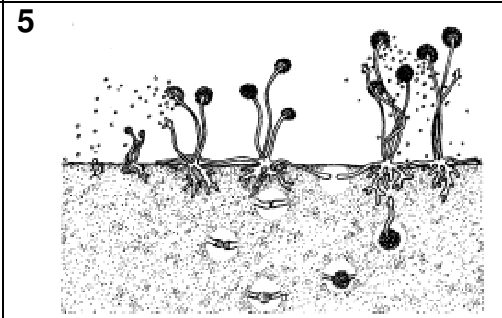
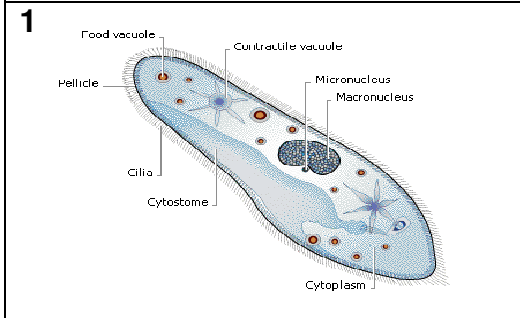
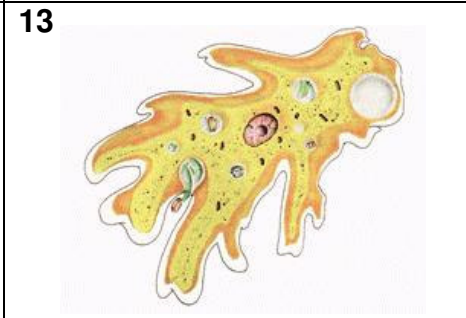
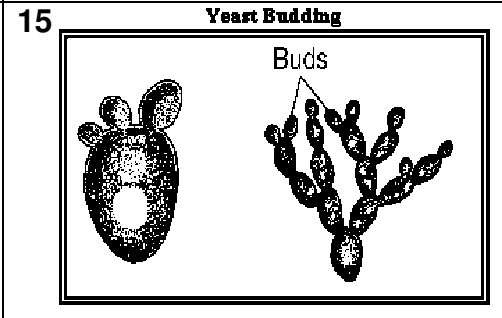
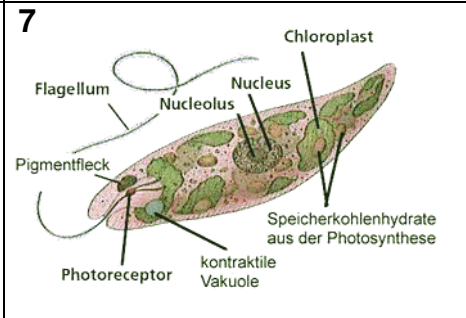
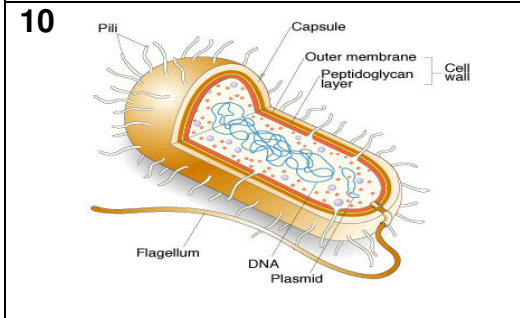
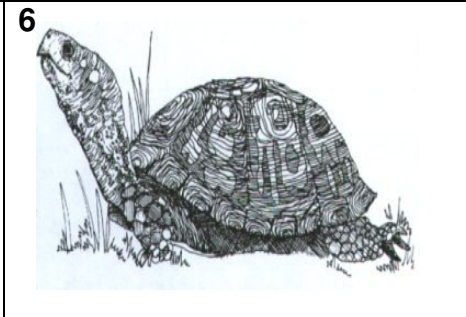
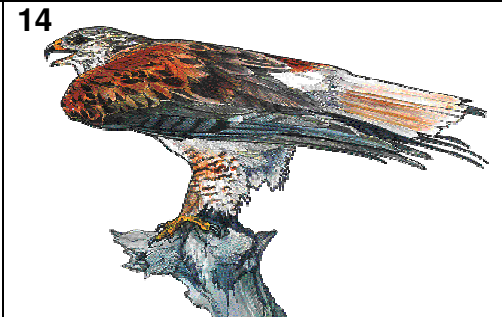
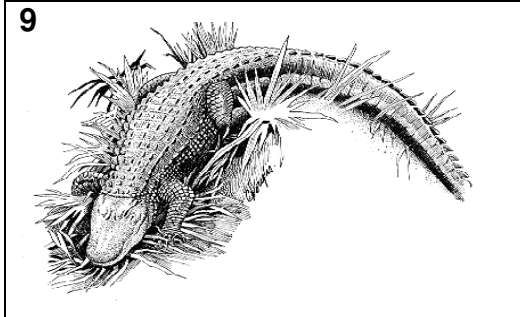
Scientists use the above characteristics to classify organisms into their proper kingdoms

Classifying Organisms into Their Proper Kingdoms

Directions: Using the characteristics from the previous page and the descriptions of "The 5 Kingdoms", classify each organism into their proper kingdom. Complete the chart below. Include the name of the kingdom and the characteristics that classify each organism into their specific kingdom. Try to name each organism.

<u>Organism #</u>	<u>Kingdom</u>	<u>Characteristics</u>
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

<p style="text-align: center;"><u>Monera</u></p> <p>Unicellular, prokaryotic cells; some form groups; cells do not contain a nucleus or other organelles; Some make their own food; some obtain nutrients from other organisms</p>	<p style="text-align: center;"><u>Protista</u></p> <p>Mostly unicellular, eukaryotic organisms; cells contain a nucleus and organelles; some make their own food; some eat other microorganisms</p>
<p style="text-align: center;"><u>Fungi</u></p> <p>Mostly multicellular, eukaryotic organisms; cells contain a nucleus and organelles; parasitic organisms that absorb nutrients from other organisms. Includes yeasts</p>	<p style="text-align: center;"><u>Plant</u></p> <p>Multicellular, eukaryotic organisms; cells contain a nucleus and organelles; do not move from place to place; make their own food through the process of photosynthesis</p>
<p style="text-align: center;"><u>Animal</u></p> <p>Multicellular, eukaryotic organisms; cells contain a nucleus and other organelles; able to move from place to place; obtain nutrients from other plants and animals</p>	



The 5 Kingdoms

Directions: List the characteristics of each kingdom below and give an example of an organism that belongs to each kingdom.

<p style="text-align: center;"><u>Monera</u></p> <p>*</p> <p>*</p> <p>*</p> <p>*</p>	<p style="text-align: center;"><u>Protista</u></p> <p>*</p> <p>*</p> <p>*</p> <p>*</p>
<p style="text-align: center;"><u>Fungi</u></p> <p>*</p> <p>*</p> <p>*</p> <p>*</p>	<p style="text-align: center;"><u>Plant</u></p> <p>*</p> <p>*</p> <p>*</p> <p>*</p>
<p style="text-align: center;"><u>Animal</u></p> <p>*</p> <p>*</p> <p>*</p> <p>*</p>	

Naming Organisms Scientifically

Carolus Linnaeus came up with the system for naming organisms scientifically. The system is based the Latin language and gives each organism two names.

What is the name of this object?



Now break the word apart. _____

What do the parts of the word mean?

Now break apart this word. **Binomial** _____

What do the parts of this word mean?

Binomial Nomenclature



Can you guess the common name for each organism below?

Scientific Name	Common Name
<i>Felis leonis</i>	
<i>Felis tigris</i>	
<i>Felis domestica</i>	

Explain how the above 3 organisms are similar and different.

Binomial nomenclature uses the genus and species name. Based on what have learned so far, which part is which on the name below?

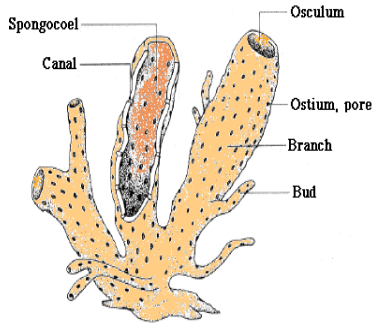
_____ \leftarrow *Felis leonis* \rightarrow _____

From what you have learned about classifying organisms from more general to more specific, what can you say about the "more general" pieces?

Animal Phyla

Directions: Complete the chart below with the aid of the PowerPoint presentation and your knowledge of the organisms. Use the pictures below to identify an organism from each phylum.

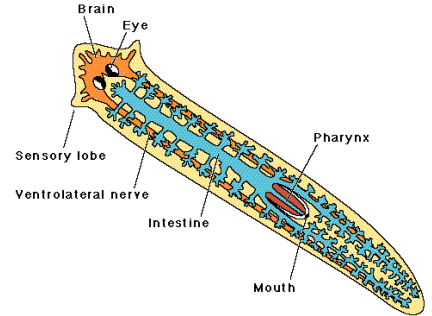
Porifera



Coelenterata



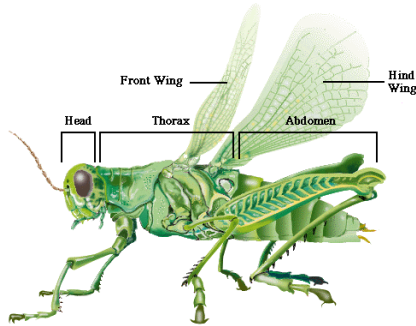
Platyhelminthes



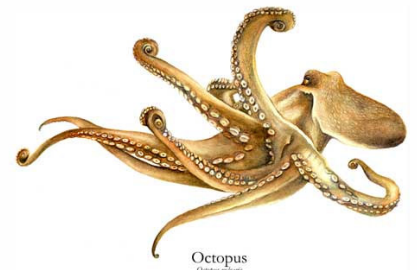
Annelida



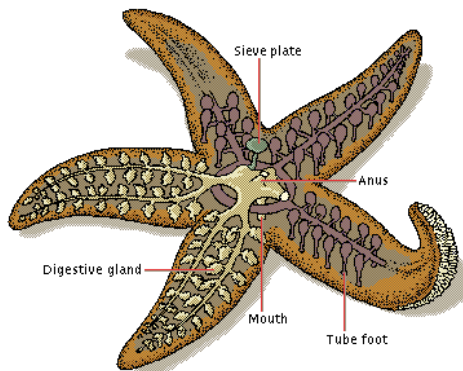
Arthropoda



Mollusca



Echinodermata



Chordata



Animal Phyla

Phylum	Example	Characteristics
Porifera		
Coelenterata		
Platyhelminthes		
Annelida		
Arthropoda		
Mollusca		
Echinodermata		
Chordata		

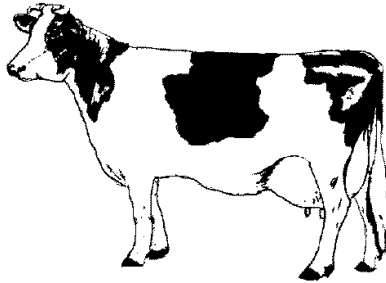
Dichotomous Key

I. Analogy of the board game - "Guess Who?"

A. Method of identification

If you were playing this board game, describe how you would go about identifying the mystery person.

B. Assume you are a taxonomist who wants to identify the organism below using a taxonomic key.



Dichotomous Key	
1	1A. unicellular go to 2 1B. not unicellular go to 3
2	2A. has Cilia Paramecium 2B. does not have cilia Amoeba
3	3A. can fly go to 4 3B. can't fly go to 5
4	4A. has feathers Bird 4B. does not have feathers Butterfly
5	5A. has thumbs go to 6 5B. does not have thumbs go to 7
6	6A. completely covered with hair Chimpanzee 6B. not completely covered with hair Human
7	7A. eats grass Cow 7B. does not eat grass Raccoon

1. The organism is a _____.
2. Describe how you used the key to identify the organism.

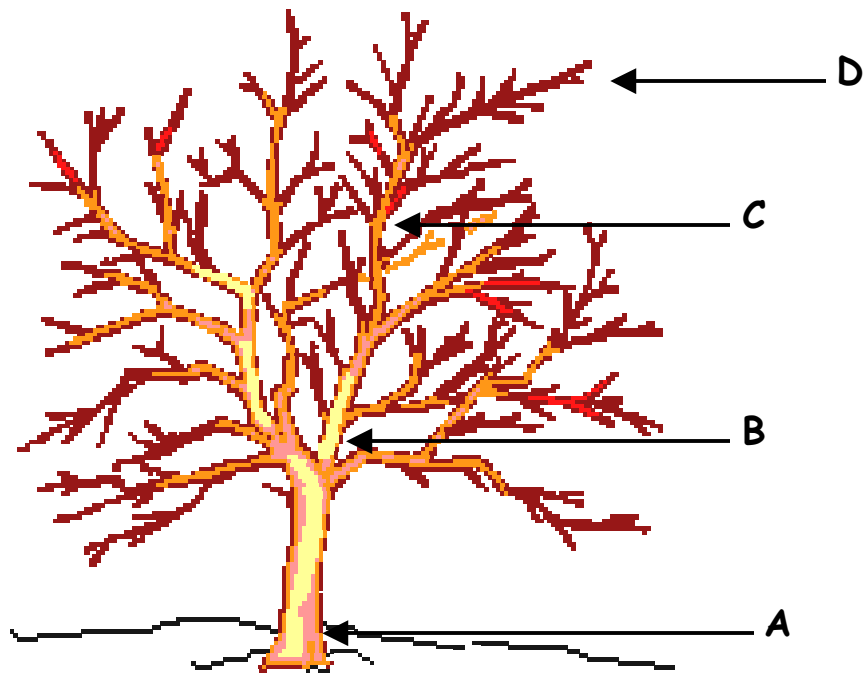
3. Define: Dichotomous Key -

Phylogenetic Tree

I. Relationships in a tree

A. Analogy of a Tree

Study the diagram of the tree below. Select a letter that answers the questions below.



1. Which part of the tree is the oldest (original ancestor)? _____
2. The youngest part (living ancestors)? _____
3. First formed branches (more primitive ancestors)? _____
4. Second formed branches (recent ancestral types)? _____

B. Family Tree

1. List the first names of your relatives in the columns below.

Grandparents

Your Family

Uncle's Family

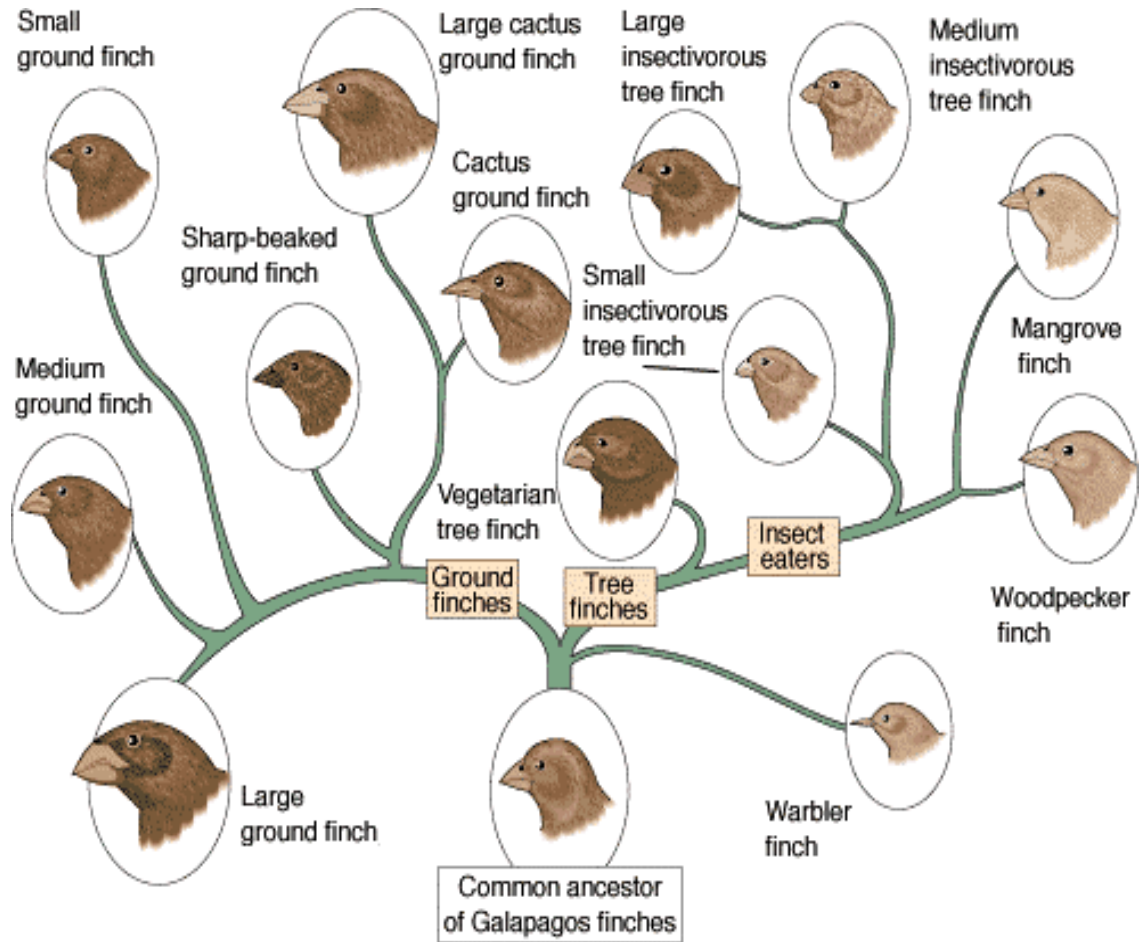
Aunt's

Etc.

2. Sketch a family tree and insert the first names of your relatives to show family relationships.

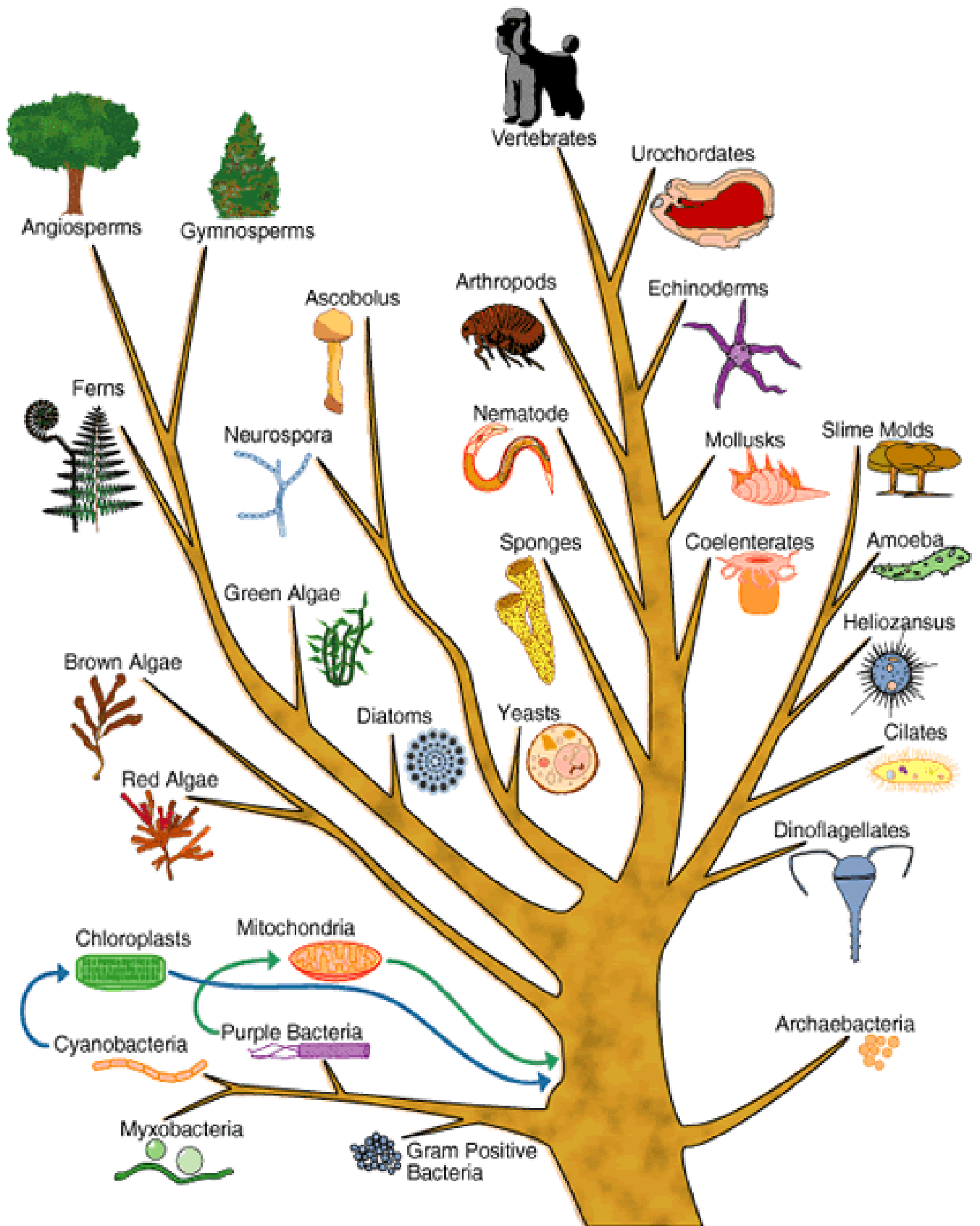
Evolutionary Tree

I. Study the diagram below of the evolutionary relationships among the organisms below.



1. What types of finches derived from the original ancestor?
2. What two finches are most closely related? Explain.
3. Are the medium ground finches and the medium insectivorous tree finches very closely related? Explain.

The Tree Of Life



Taxonomy Homework Questions

Directions: Answer all questions on a separate sheet of loose-leaf paper. Use your textbook, class notes, and/or my website to define and answer the questions.

1. Assume that you landed on Mars and discovered what you believe to be an organism.
 - a. Explain what you would do to determine if it were alive.
 - b. Describe the procedures you would use to classify this organism.

2. Explain the importance of a system of classification in:
 - a. The industrial world.
 - b. The biological world.
 - c. Everyday life.

3. Explain why the binomial nomenclature consists of the genus and species of an organism.

4. State the differences between the following kingdoms:
 - a. Plants and Animals
 - b. Monera and Protists

5. Assume that you are a bioengineer. Explain how you can change a fungus such as a mushroom into a photosynthetic organism.

6. Explain why a crab and a grasshopper are classified as arthropods.

7. Explain why the chimpanzee is man's closest natural relative.

8. Create a phylogenetic tree that contains *Homo sapiens* and other animals. Show close and distant relationships.

9. State the major similarities and differences between:
 - a. algae and a moss plant
 - b. tulip and a maple tree

10. Explain how a maple tree is adapted to a terrestrial environment.
 - a. Explain why a maple tree is a tracheophyte.

11. Describe how to use a dichotomous key.