



Using a Dichotomous Key

The word *dichotomous* comes from Greek and English roots: *dicho* is Greek for “in two,” and *tom* means, “to cut.” So *dichotomous* means “to cut in two” or “divide in two.” And that’s what you do at each stage of deciphering a dichotomous key – divide in two.

A dichotomous key is a grouping tool that scientists use to classify animals or plants based on observations. The key focuses on one feature of a living thing at a time. Usually the key will list the presence or absence of something or maybe highlight opposites. When using a dichotomous key, you will look at one characteristic at a time and divide your specimens into two groups until each living thing has been placed into a category all its own.

Here is a dichotomous key for various objects and organisms. Focus on one object at a time (see pictures). At each line, you look at the object and determine whether it possesses the characteristic listed. Then follow directions in the right side as to where to go next. You will always have two choices, a or b. When there are no further directions, and a type of object is listed, then you have completed the key for that object. Go to the next pictured object, and follow the key until all objects have been deciphered.

Materials: objects and organisms cards

What To Do:

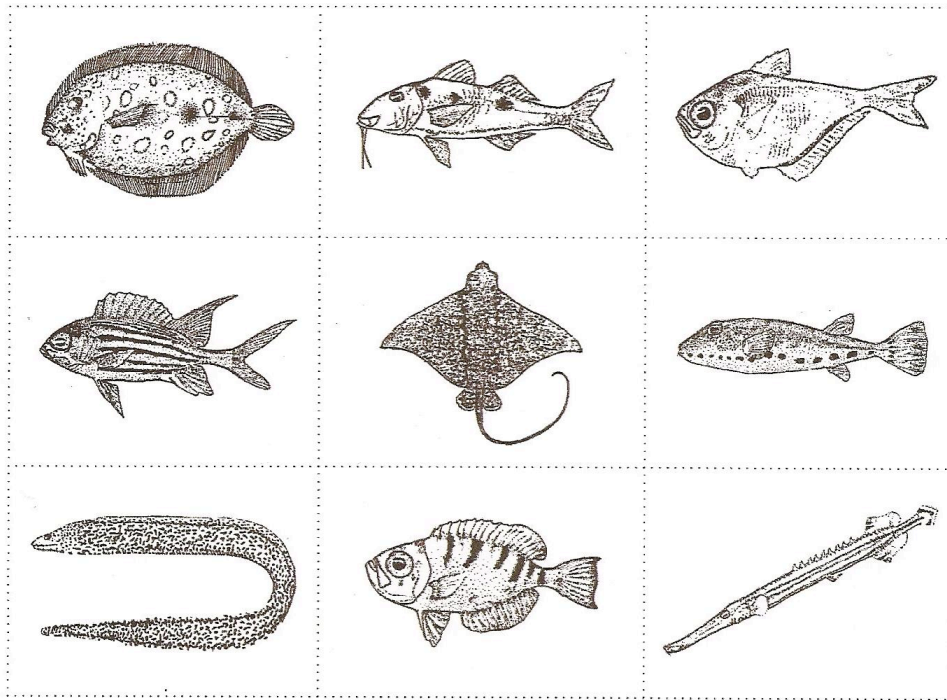
1. Pick out one picture at a time.
2. Go to step #1 and determine if the picture is living or nonliving.
3. Follow the direction on the right.
4. Continue until all objects have been identified.
5. Place the letter of the picture next to the name of the object identified.



1. a. Organism is living.....go to 4.
1. b. Organism is nonliving.....go to 2.
2. a. Object is metallic.....go to 3.
2. b. Object is nonmetallic.....ROCK.
3. a. Object has wheels.....BICYCLE.
3. b. Object does not have wheels.....TIN CAN.
4. a. Organism is microscopic.....PARAMECIUM.
4. b. Organism is macroscopic.....go to 5.
5. a. Organism is a plant.....go to 6.
5. b. Organism is an animal.....go to 8.
6. a. Plant has a woody stem.....go to 7.
6. b. Plant has a herbaceous stem.....DANDELION.
7. a. Tree has needle like leaves.....PINE TREE.
7. b. Tree has broad leaves.....OAK TREE.
8. a. Organism lives on land.....go to 9.
8. b. Organism lives in water.....CLAM.
9. a. Organism has 4 legs or fewer.....go to 10.
9. b. Organism has more than 4 legs.....ANT.
- 10 a. Organism has fur.....go to 11.
10 b. Organism has feathers.....ROBIN.
- 11 a. Organism has hooves.....DEER.
11 b. Organism has no hooves.....MOUSE.

Questions:

1. Which object/organism was easiest to identify?
2. Which object/organism was hardest to identify?



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Materials: Fish pictures

What To Do:

1. Use the dichotomous key below to identify the fish in the pictures above.
2. Write the name of the fish in each box.

Step 1

If fish shape is long and skinny then go to step 2.
If fish shape is not long and skinny, then go to step 3.

Step 2

If fish has pointed fins, then it is a trumpet fish.
If fish has smooth fins, it is a spotted moray eel



Step 3

If fish has both eyes on top of the head, then go to step 4.
If fish has one eye on each side of the head, go to step 5.

Step 4

If fish has long whip-like tail, it is a spotted eagle ray.
If fish has short, blunt tail, it is a peacock flounder

Step 5

If fish has spots, then go to step 6
If fish does not have spots, then go to step 7.

Step 6

If fish has chin “whiskers,” then it is a spotted goatfish.
If fish does not have chin “whiskers,” it is a band-tail puffer

Step 7

If fish has stripes, then go to step 8.
If fish does not have stripes, it is a glassy sweeper

Step 8

If fish has a v-shaped tail it is a squirrelfish
If fish has a blunt tail, it is a glass-eyed snapper.

Questions:

1. Did you get all of the fish named correctly? _____
2. Why or why not? _____



Taxonomy

The process of assigning a scientific name to a plant or animal is called taxonomy. Taxonomy is a hierarchical system for classifying and identifying organisms that was originally developed by the Swedish scientist Carolus Linnaeus in the 18th century. Linnaeus's taxonomy system dictates the ordering of species into broad categories. There are seven major categories: Kingdom, Phylum, Class, Order, Family, Genus, and Species.

Humans belong to genus Homo and species sapiens and therefore the scientific name for humans is Homo sapiens. Note that the first part of a scientific name, genus, begins with a capital letter, while the second with a small letter.

Every plant and animal species is given a two part scientific name that allows people all over the world to communicate clearly about plant and animal names.

The great thing about scientific names is that every plant and animal has a unique name that means people all over the world can talk about the exact same species but a common name can be vague and confusing.

Materials: Animal Pictures, Dichotomous Key

What To Do:

- 1. Use the dichotomous key to find the scientific names of each of the animals found in the pictures.
- 2. Work with your partners and divide up the pictures so you won't have to do all 21 animals.

Common Name	Scientific Name
1. Beaver	
2. American Robin	
3. Leopard Frog	
4. Great Horned Owl	
5. Moose	
6. Raccoon	
7. Mallard Duck	
8. Bison	
9. Lynx	
10. Jack Rabbit	
11. Grizzly Bear	
12. Hummingbird	
13. Sheat	
14. Garter Snake	
15. Little Brown Bat	
16. Polar Bear	
17. Harbor Seal	
18. Giraffe	
19. Zebra	
20. Koala	
21. Kangaroo	



Name _____ period _____

EXIT TICKET

Using a Dichotomous Key



Use the dichotomous key below to find the names of each of the animals pictured above. Write their name under each picture.

1.	a. Animal has fur b. Animal does not have fur	Go to #2 Go to #4
2.	a. Animal is carnivorous (eats meat) b. Animal is herbivorous (eats plants)	Go to #3 Starburst
3.	a. Animal has pointed ears that stand up b. Animal has soft, floppy ears that hang down	Snickers Milky Way
4.	a. Animal has feathers b. Animal does not have feathers	Now/Later Skittles

2. Which of the following scientific names is written correctly?

- A. homo Sapien
- B. Homo Sapien
- C. homo sapien
- D. Homo sapien



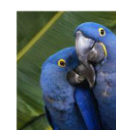
Name _____ period _____

EXIT TICKET

Using a Dichotomous Key

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- C. homo sapien
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