TAXONOMY

CLASSIFYING ORGANISMS

Middle School Science Lesson

What does it mean to classify something?

Let’s start with an example. How do you classify food?

I am going to split you all up into groups. You will be given 30 food items. I want you to split them into 2 groups that have similar traits.

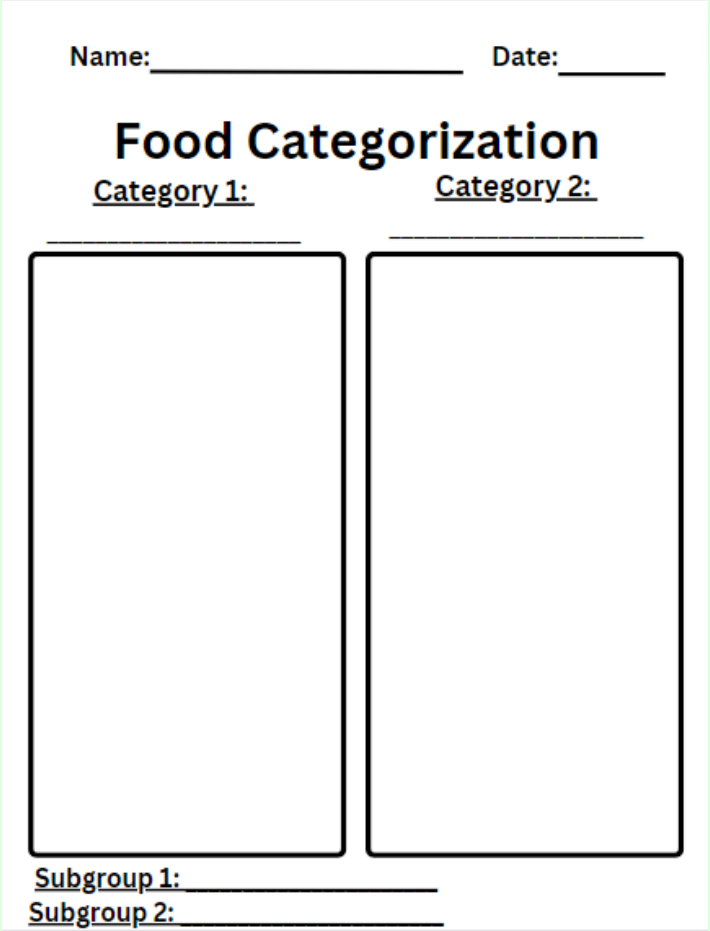
Name:_____ Date:_____

Food Categorization

Category 1: Category 2:

What two groups did you use to sort your food?

Now choose one of your groups. Using the food in this group, create two subgroups. Circle your subgroup 1 in blue and your subgroup 2 in red.


Name:_____ Date:_____

Food Categorization

Category 1: _____

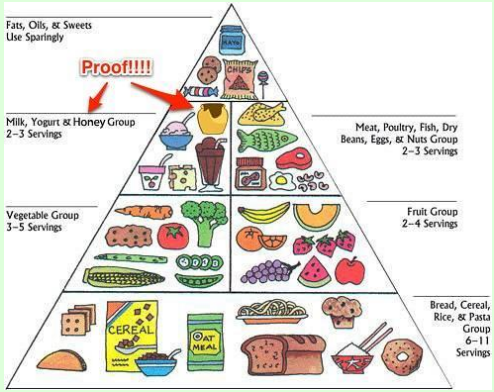
Category 2: _____

Subgroup 1: _____

Subgroup 2: _____

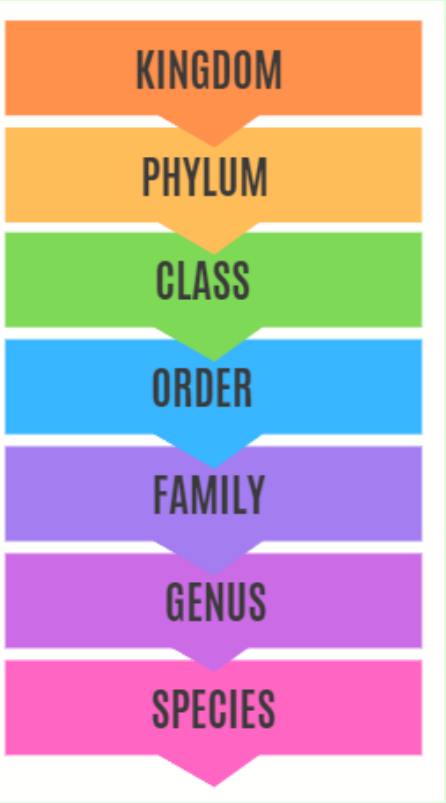
What two subgroups did you use to sort your food?

Do you think you could divide one of the subgroups into even smaller categories?



How does science classify organisms?

Taxonomy

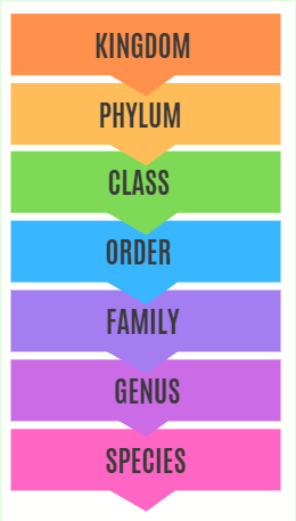


Taxonomy is the scientific classification of living organisms.

This includes: Plants, Animals, Bacteria, Fungi, Protista, and Archaea

Taxonomy includes a series of levels from the most general to the most specific.

Taxonomy often uses Latin words. Some words used in taxonomy look like and sound like English words.



Why do we classify?

We classify living things in groups...

1

To make the study of organisms easier

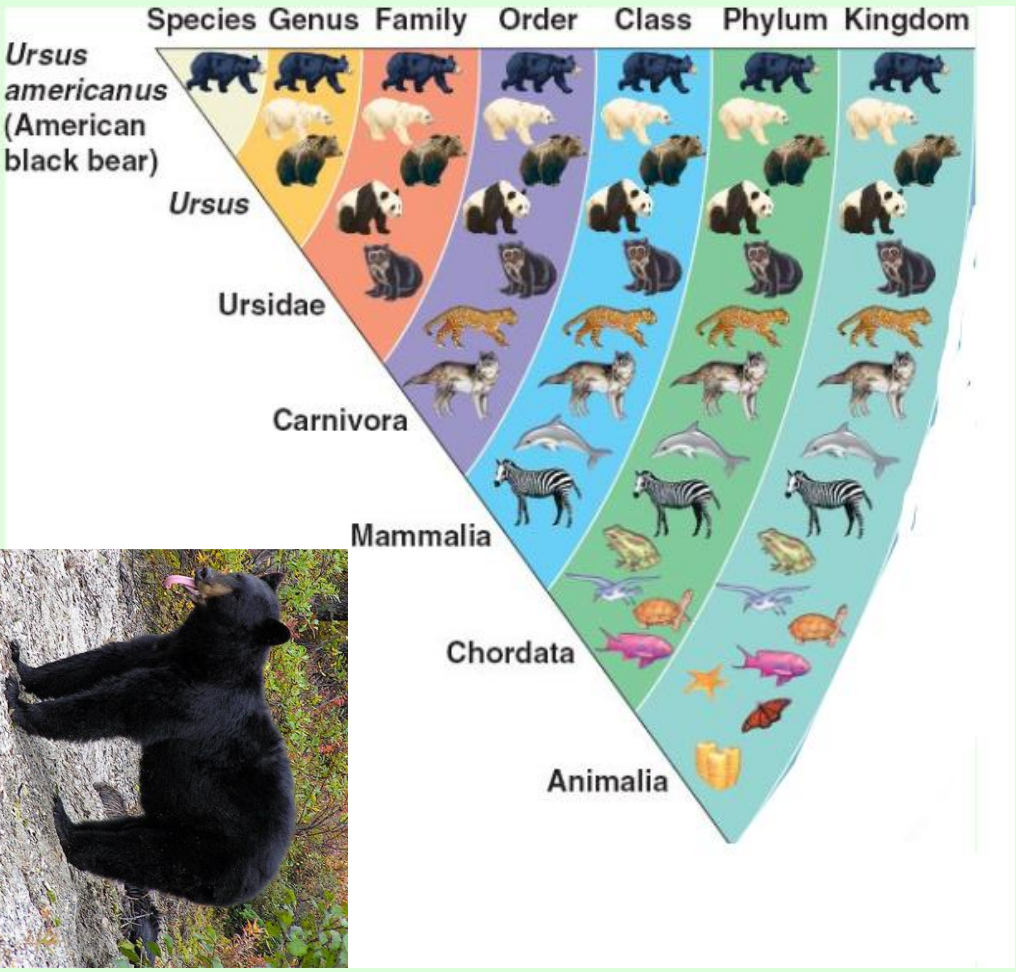
2

To clearly communicate about living things with people despite language differences

3

To explore how various living things are related to each other


SPECIES
GENUS
FAMILY
ORDER
CLASS
PHYLUM
KINGDOM


Species
Genus
Family
Order
Class
Phylum
Kingdom
Ursus americanus (American black bear)
Ursus
Ursidae
Carnivora
Mammalia
Chordata
Animalia

Scientific Name: Ursus americanus

English Non-Scientific Name:
Black Bear

Bulgarian Non-Scientific Name:
Черна мечка

Swedish Non-Scientific Name: Svartbjörn

KINGDOM

PHYLUM

CLASS

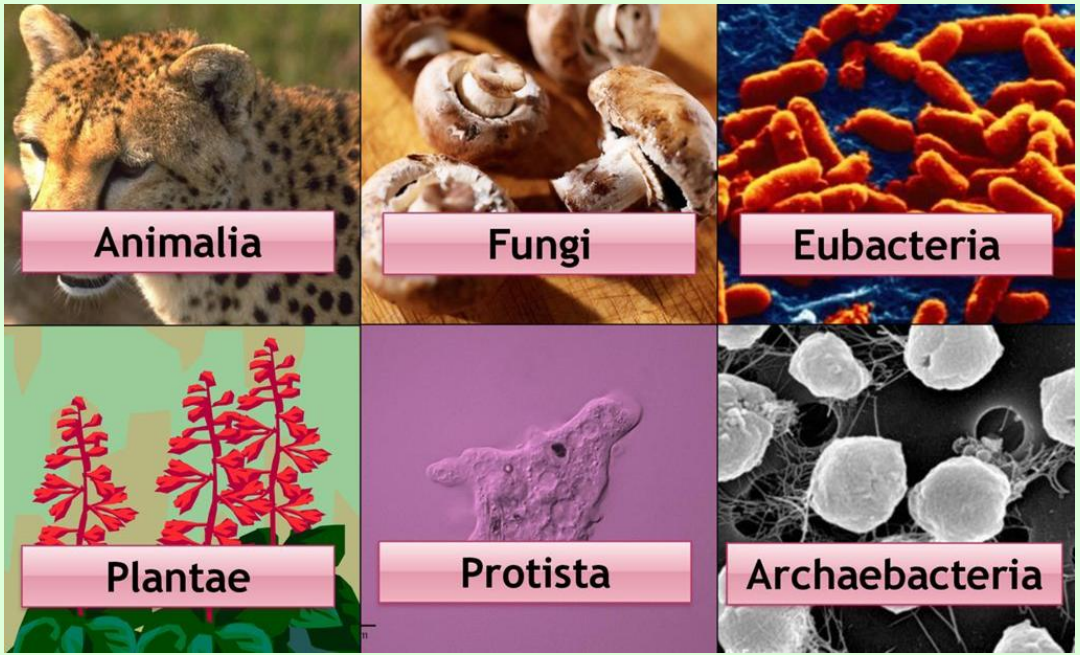
ORDER

FAMILY

GENUS

SPECIES

The different kingdoms are Animalia, Plantae, Fungi, Protista, Archaea, and Bacteria.



KINGDOM

PHYLUM

CLASS

ORDER

FAMILY

GENUS

SPECIES

The different kingdoms are Animalia, Plantae, ~~Fungi, Protista, Archaea, and Bacteria.~~

KINGDOM

PHYLUM

ANIMALIA

VERTEBRATES

Vertebrates are animals that have a backbone and are members of the Phylum Vertebrata. Examples of vertebrates include mammals, birds, reptiles, amphibians, and fish.

Fish

Mammals

Birds

Reptiles

Amphibians

KINGDOM

PHYLUM

CLASS

ANIMALIA

VERTEBRATES

HOMEOTHERMIC/POIKILOTHERMIC

Vertebrates can be further classified as being either warm-blooded (homeo-thermic) or cold-blooded (poikilothermic).

VERTEBRATES

Warm - Blooded

- Mammals

- Birds

Cold - Blooded

- Reptiles

- Fish

- Amphibians

WARM - BLOODED VERTEBRATES

They possess internal control to ensure that their body temperature is fairly constant. Warm-Blooded Vertebrates tend to have warm skin.

MAMMALS

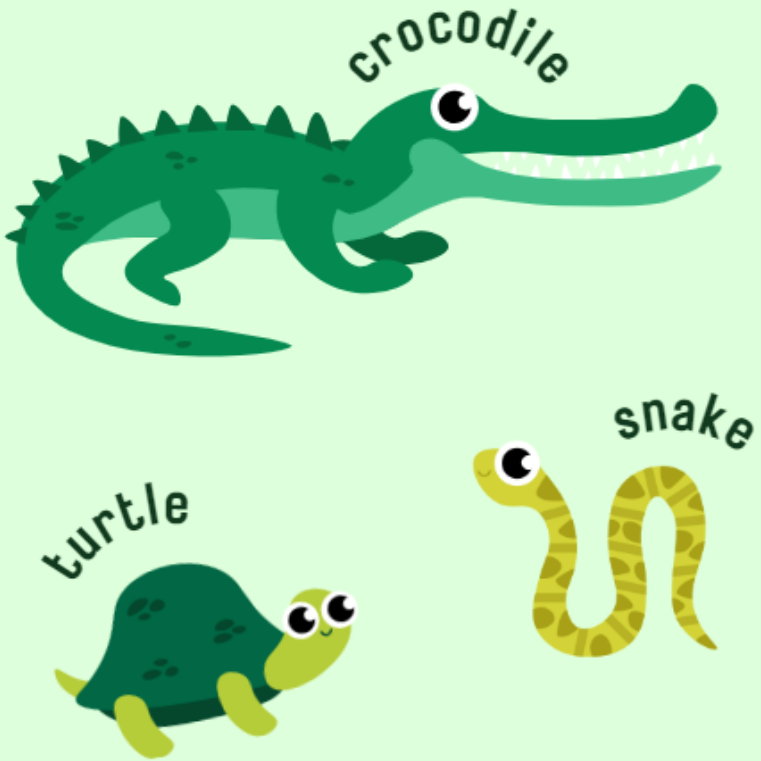
Mammals are warm-blooded animals that feed their young with milk and have sweat glands and fur or hair.

BIRDS

This class of organisms are characterised by feathers, toothless beaks and a high metabolic rate. Furthermore, members of class Aves lay hard-shelled eggs.

COLD - BLOODED VERTEBRATES

Cold-blooded animals can be defined as animals that cannot regulate their internal body temperature. They cannot survive in extreme temperature conditions.



REPTILES

They are cold-blooded vertebrates that lay shelled eggs on land, and their skin is covered with scales. Some of the most well-known reptiles include turtles, lizards, snakes, and crocodiles.

AMHPIBIANS

salamander

frog

newt

Amphibians need a body of water to lay their eggs are shell-less. They undergo metamorphosis where the young ones transform from fully-aquatic larval form to terrestrial adult form.

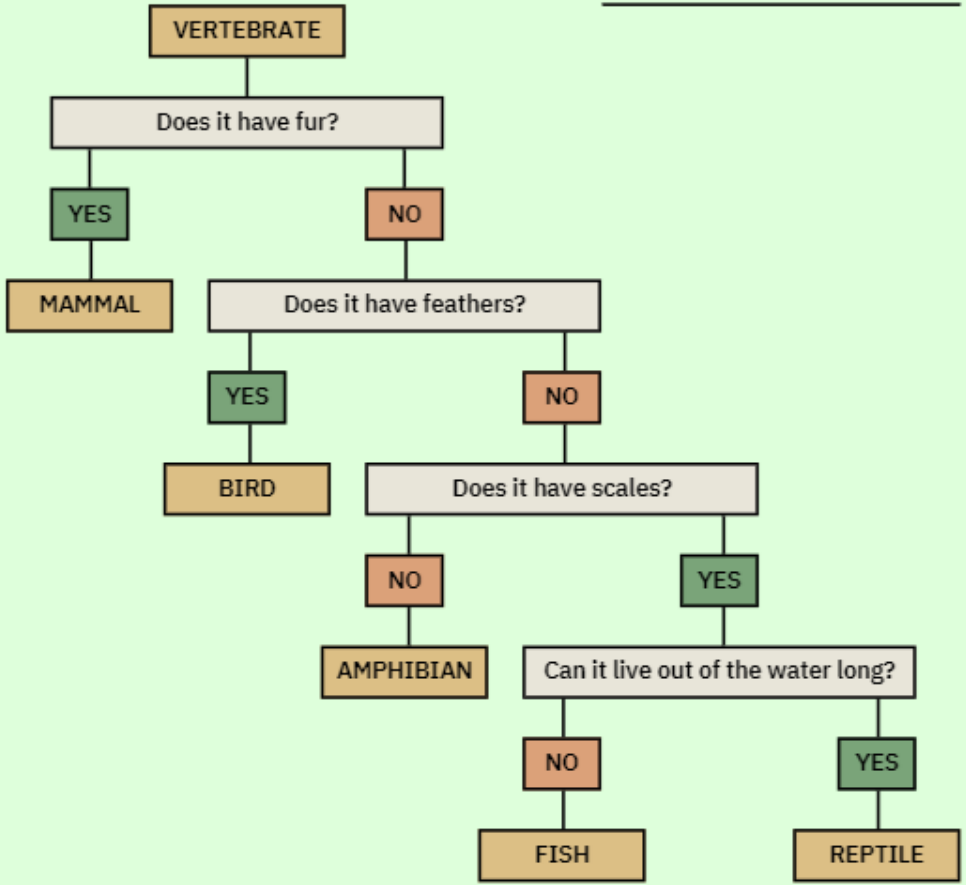
FISH

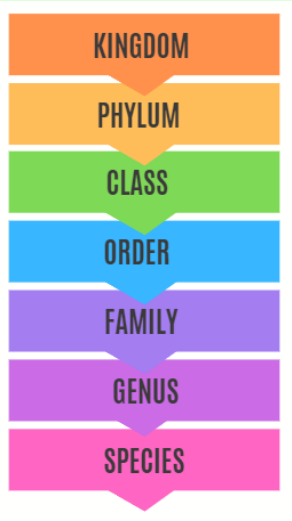
Fish are aquatic vertebrate animals that have gills but lack limbs with digits, like fingers or toes.

Classification Using a Key

A **classification key** is a set of questions and answers used to identify and classify a living thing.

It resembles a **flowchart**, making it helpful in identifying closely related organisms.





Why do we classify?

We classify living things in groups...

1

To make the study of organisms easier

2

To clearly communicate about living things with people despite language differences

3

To explore how various living things are related to each other

What if all of these

Why do we classify?

We classify living things in groups...

1

To make the study of organisms easier

2

To clearly communicate about living things with people despite language differences

3

To explore how various living things are related to each other

Why do we classify?

We classify living things in groups...

1

To make the study of organisms easier

2

To clearly communicate about living things with people despite language differences

3

To explore how various living things are related to each other