Classification

Classroom Notes

Learning Goal(s):
Focus Standards:

- **S5L1. Students will classify organisms into groups and relate how they determined the groups with how and why scientists use classification.**

  a. Demonstrate how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal).

  b. Demonstrate how plants are sorted into groups.

EQ What is classification?

- Classification is the way in which all living things are placed into larger and larger groups or categories that share similarities and a common ancestry.
- http://www.kidzone.ws/animals/scientific.htm

Classification Unit

Classification	the way in which all living things are placed into groups or categories that share similarities.
Kingdoms	biggest groups
Species	smallest groups
5 Kingdoms	Animal Plant Fungus Bacteria Protist

Taxonomy & Classification -

Two types of scientific processes deal with classifying and naming living things.

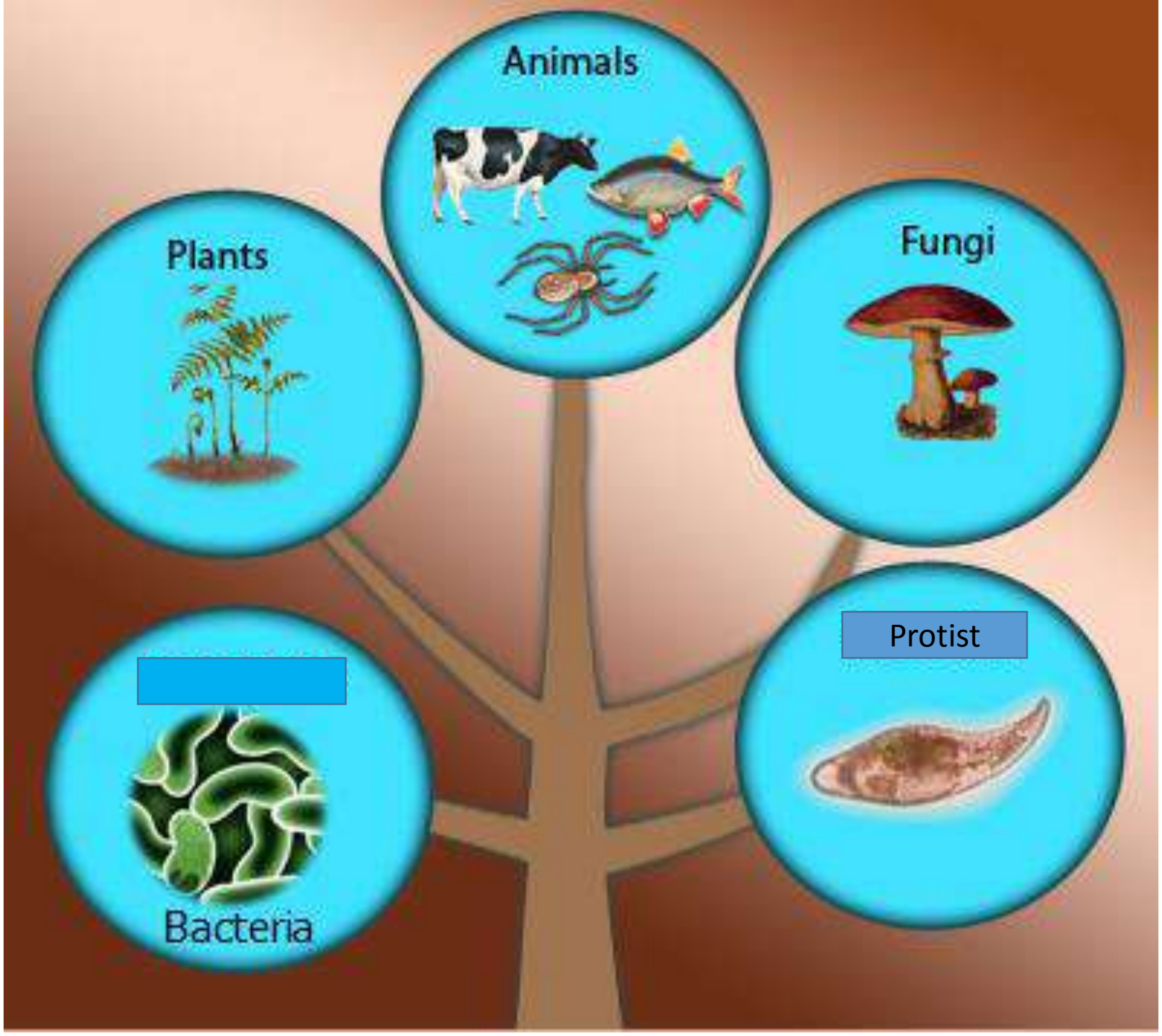
Classification is the process of arranging organisms into groups based on similarities.

Taxonomy is the science of naming and classifying organisms.

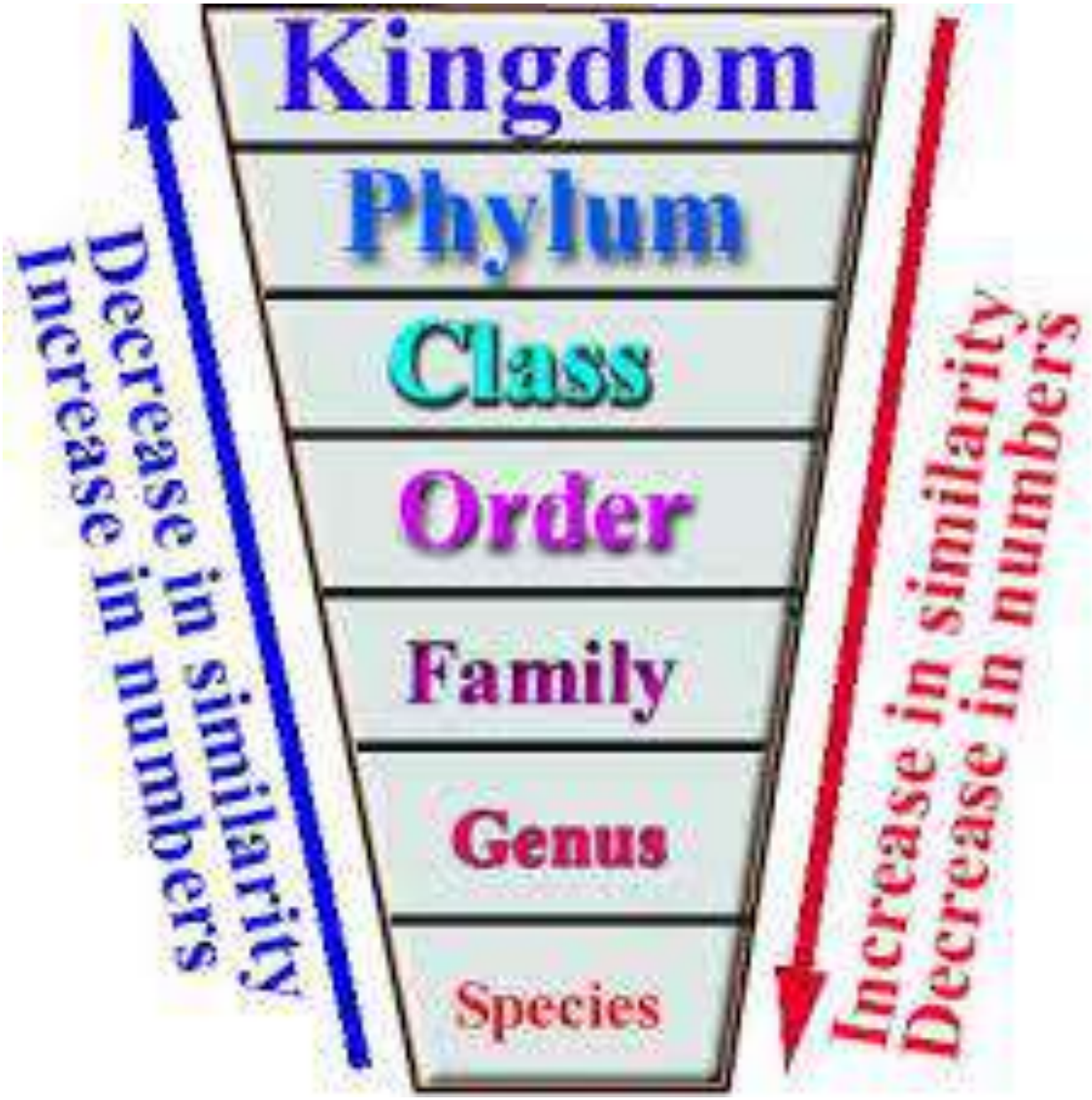
http://www.d123.org/olhms/dedie/documents/classification2.1b.pdf

EQ	What are vertebrates and invertebrates?

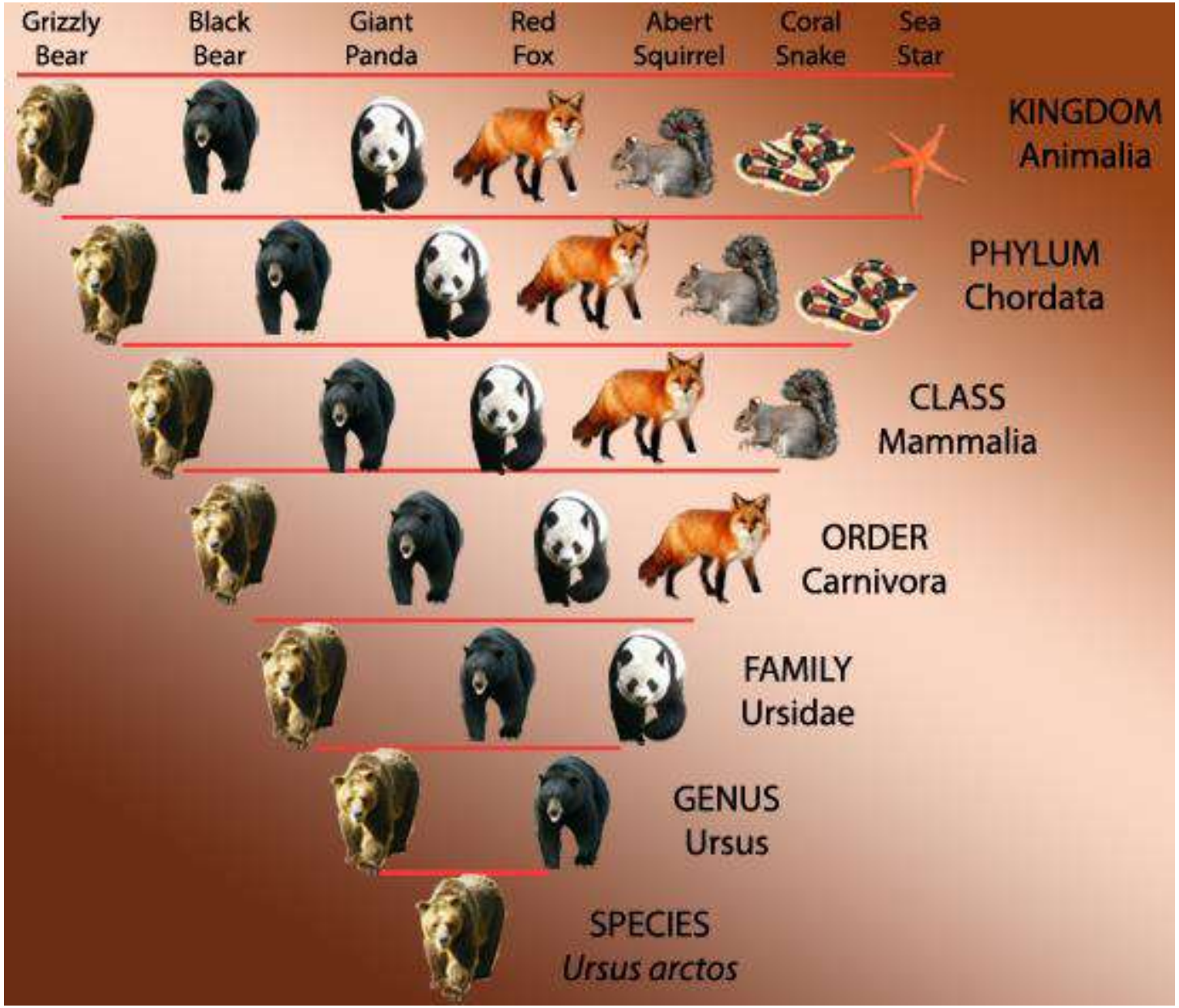
5 Kingdoms



Animal Classification



Classification of a bear



Classification

Animal Kingdom	Animals are divided into vertebrates and invertebrates.
Vertebrates	have a backbone.
Invertebrates	do not have a backbone.

Classification

Warm Blooded	Body temperature stays the same whether it is warm or cold outside. Mammals and birds are warm-blooded, which means that they can make their own body heat even when it is cold outside. Whether it is sunny and hot outside or there is a snowstorm and it is very cold, warm-blooded animals have body temperatures that usually stay the same.
Cold Blooded	Body temperature depends whether it is warm or cold outside. Cold-blooded animals, like reptiles, amphibians, and fish, become hotter and colder, depending on the temperature outside. For example, when the sun sets at night, their bodies are cooler because it is less warm outside. When the sun is out, however, their bodies soak up the heat and become warmer.

http://www.sheppardsoftware.com/content/animals/kidscorner/classification/kc_classification_blood.htm

Animal Classification

Vertebrates

Vertebrates- Have backbones

Invertebrates

Invertebrates- Do not have backbones

Study Jams

Comparing and Contrasting Vertebrates and Invertebrates

Vertebrates

- Mammals
- Reptiles
- Amphibians
- Fish
- Birds

- The Five Classes of Vertebrates

Vertebrates

- Mammals-have hair and produce milk
- Reptiles-Dry scaly skin
- Amphibians-moist skin, no scales
- --Begin life in water, but go to land
- Fish-Live in water and breath through gills
- Birds-vertebrates with feathers

Vertebrates-Examples

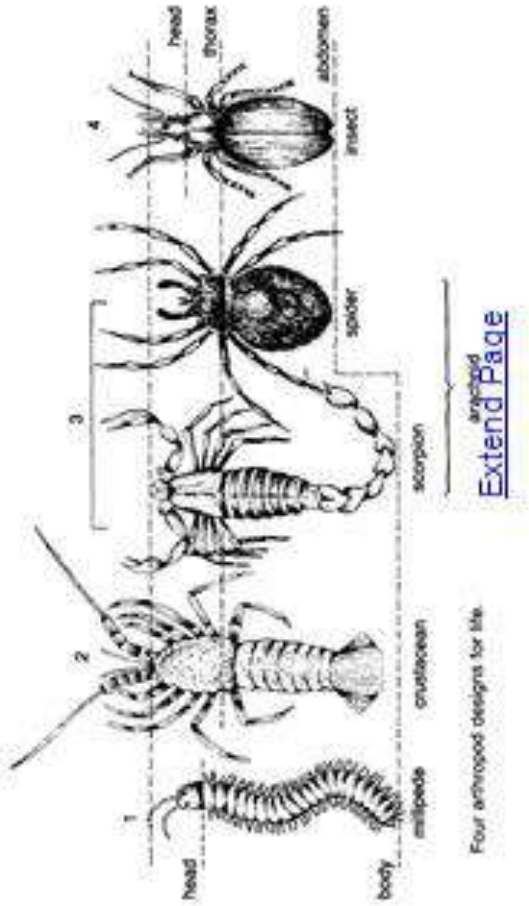
- Mammals- dogs, cats, humans, whales
- Reptiles- lizards, snakes, turtles
- Amphibians- frogs, newts
- Fish- bass, catfish, tuna
- Birds- crows, dove, penguins, EAGLES

Invertebrates-No Backbone

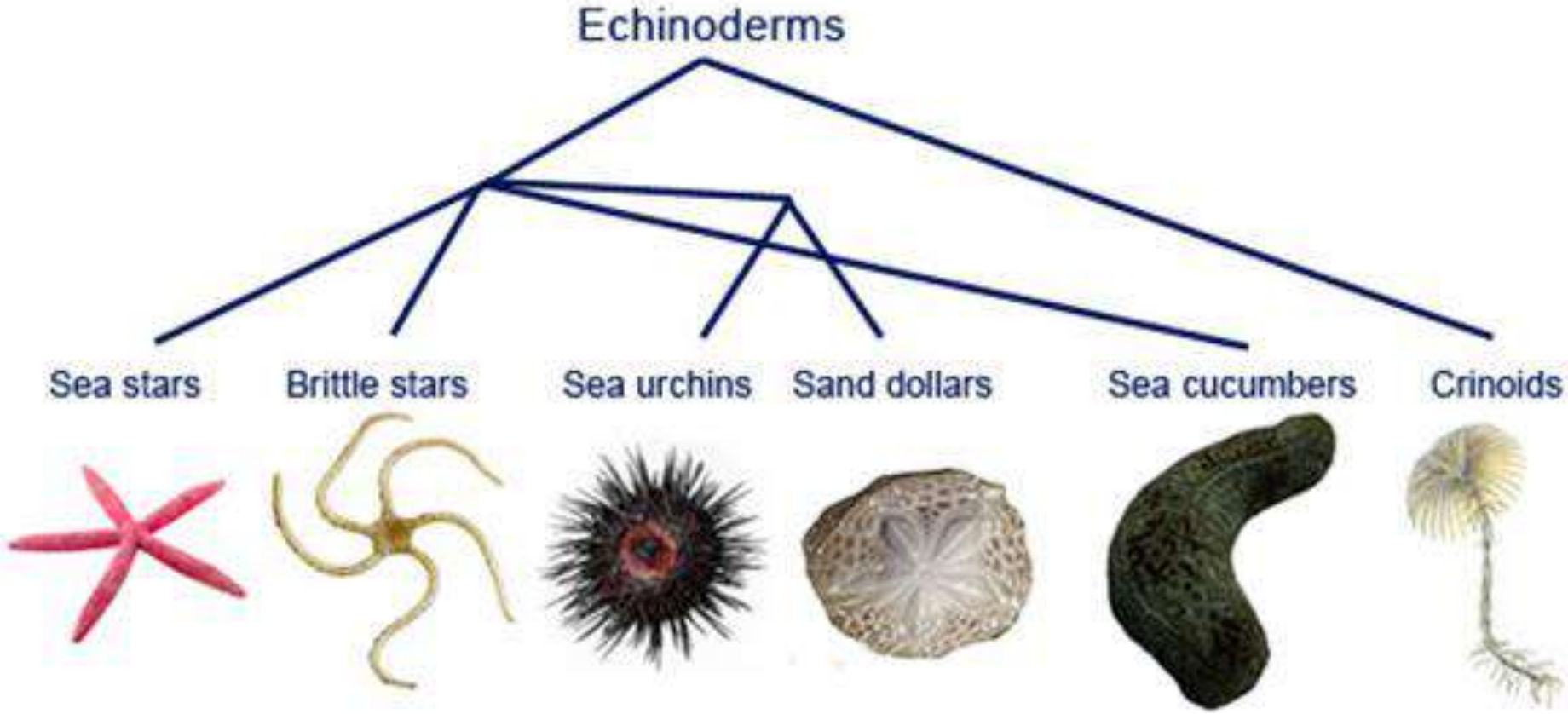
- Have legs and joints
- several groups, but Arthropods are the largest group.
- Insects are the largest group of Arthropods.
- Mollusks-
- May or may not have a shell
- Clams, snails, squids

Arthropods

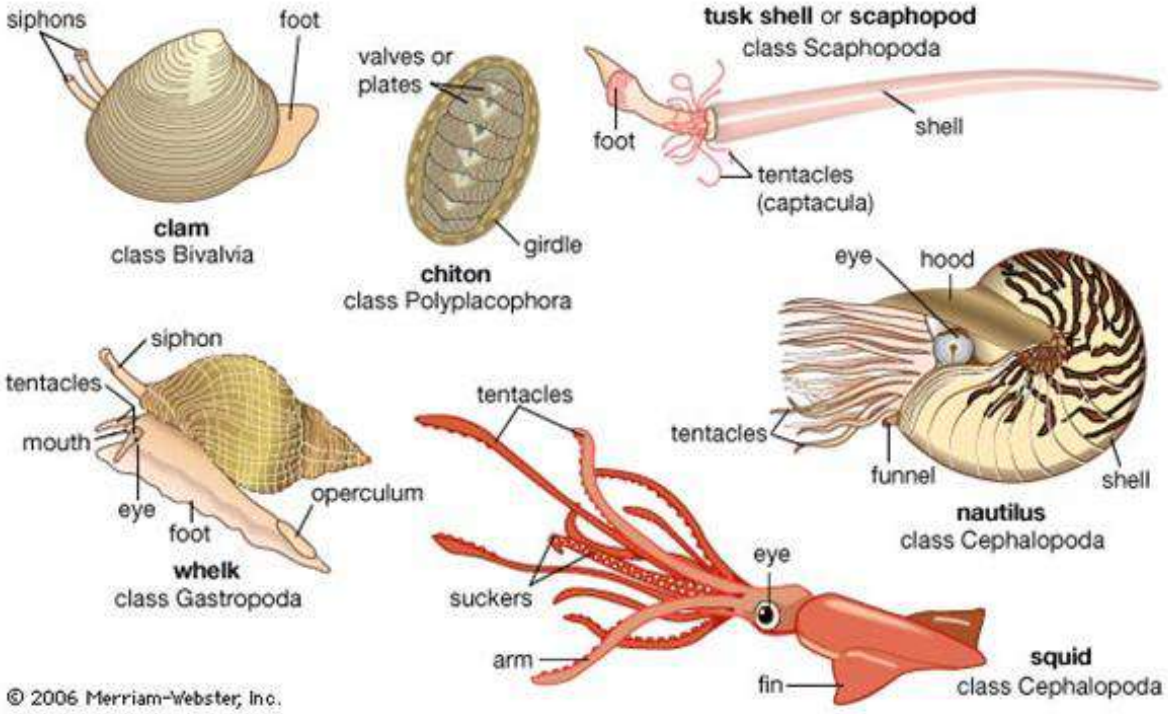
 bee	 ladybug	 butterfly
 dragonfly	 beetle	 crab
 spider	 caterpillar	 katydid
 moth	Arthropods are the most numerous animals on earth. They have an exoskeleton, a segmented body, and jointed legs. They do not have a backbone and are cold-blooded.	Can you discover other Arthropods?



http://www.biologycorner.com/bio1/notes-arthropods.html


Echinoderms
Sea stars
Brittle stars
Sea urchins
Sand dollars
Sea cucumbers
Crinoids

Mollusks


siphons
foot
clam
class Bivalvia
valves or plates
girdle
chiton
class Polyplacophora
tusk shell or scaphopod
class Scaphopoda
foot
shell
tentacles (captacula)
eye
hood
tentacles
funnel
shell
nautilus
class Cephalopoda
siphon
tentacles
mouth
eye
foot
operculum
whelk
class Gastropoda
tentacles
suckers
arm
eye
fin
squid
class Cephalopoda
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CLASSIFICATION OF ANIMALS

This is the grouping together of animals with similar characteristics. Animals can be classed as either vertebrates or invertebrates.

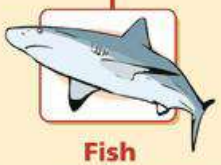
ANIMALS

VERTEBRATES

These are animals that have a backbone.

Reptiles

Have dry scaly skin.
Lay eggs on dry land.
Are cold blooded.
(Snake, Crocodile)



Fish

Have scales on their bodies.
Have gills for breathing.
Are cold blooded.
(Shark, Tuna)

Amphibians

Have moist slimy skin.
Lay eggs in water.
Are cold blooded.
(Frog, Newt)

Birds

Have feathers and wings.
Have beaks and lay eggs.
Are warm blooded.
(Wren, Swan)

Mammals

Have fur or hair.
Feed young on milk.
Are warm blooded.
(Cow, Human)

INVERTEBRATES

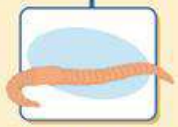
These are animals that do not have a backbone.

Protozoa

Single cell organisms all microscopic.

Flatworms

Simple and soft bodied.
(Tape worm, Flukes)



Annelid Worms

Segmented bodies.
(Earthworm, Leech)

Echinoderms

Spiny sea creatures.
(Starfish, Sea urchin)

Coelenterates

Soft bodies, stinging cells.
(Jellyfish, Sea anemone)

Arthropods

Hard external skeleton and jointed limbs.

Molluscs

Soft bodied, most have shells.
(Snails, Limpet)

Arachnids

Eight legs, two body parts, no antennae.
(Spider, Scorpion)

Crustaceans

Mostly sea creatures.
Many legs and two sets of antennae.
(Crab, Lobster)

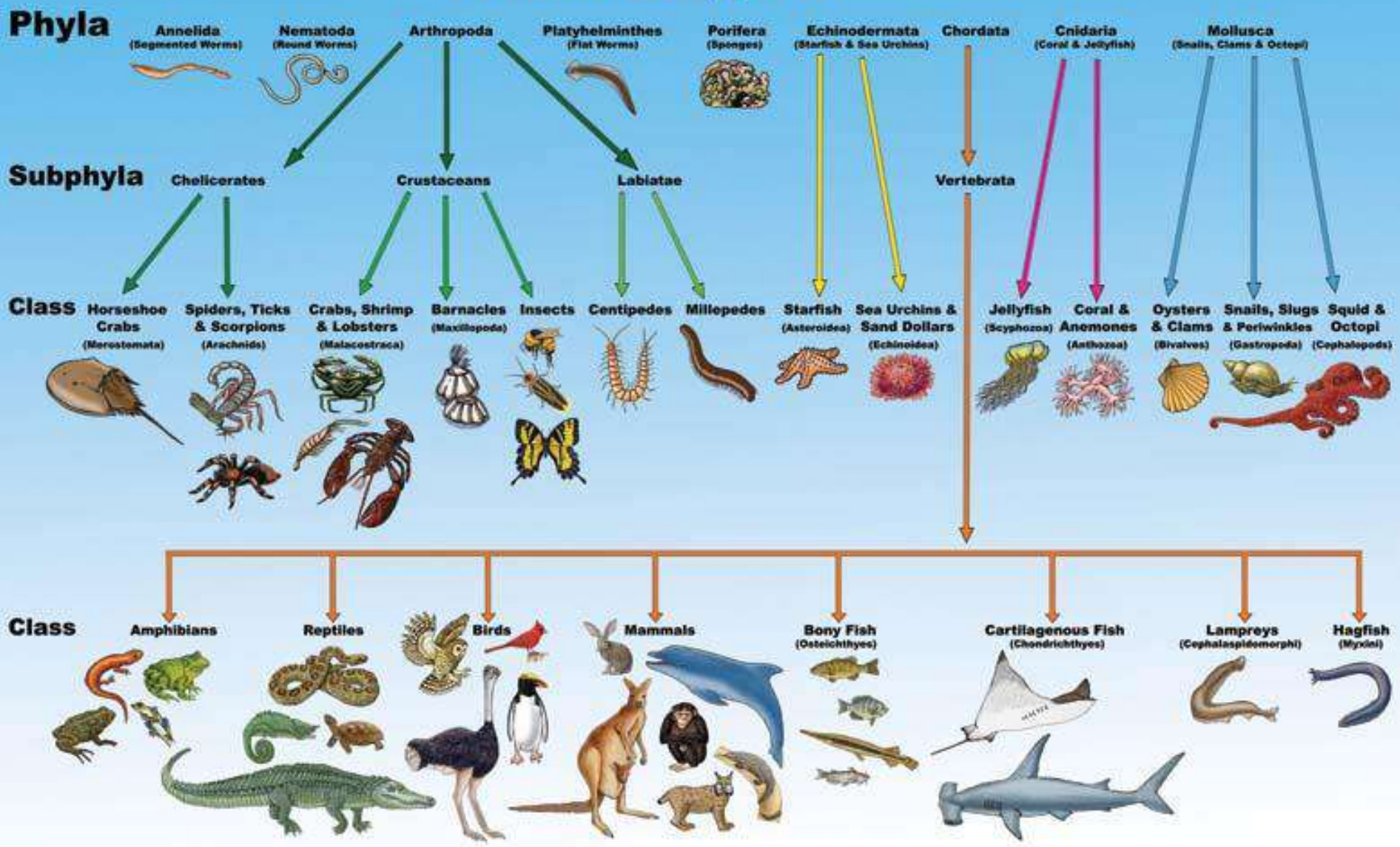
Insects

Wings, six legs, three body parts, one pair of antennae.
(Bee, Ladybird)

Myriapods

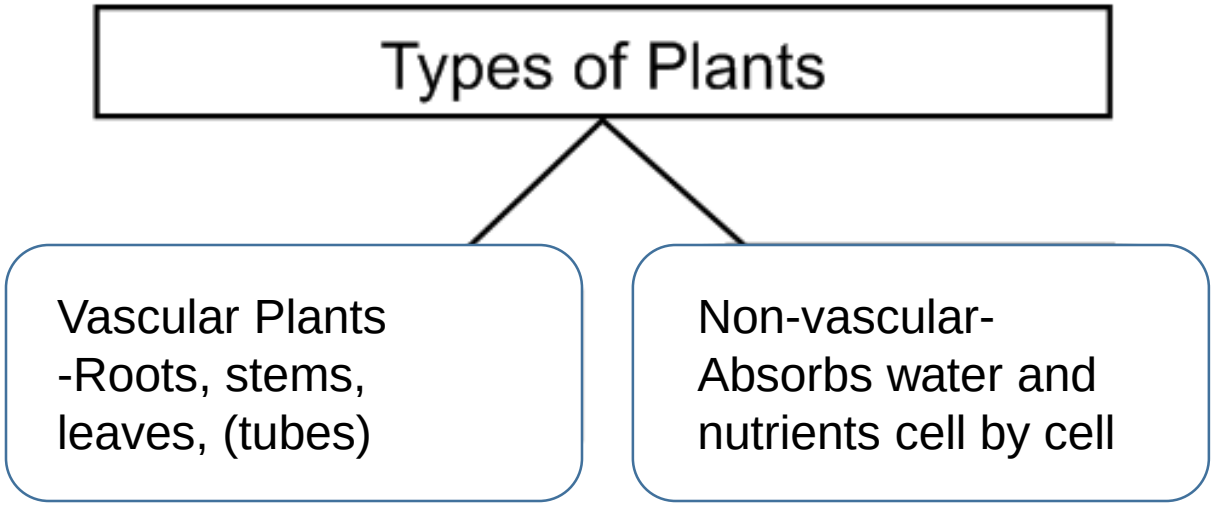
Many legs and body segments.
(Centipede, Millipede)

Animal Kingdom



www.exploringnature.org

Other things to know:
Kingdom
Fungi
Bacteria
Protists
Genus
Species
Classification



or by how plants reproduce

Reproduction by seeds:

Seeds- a tiny new plant is protected by a seed.

Most vascular plants, but not all, make seeds.

Reproduction by spores:

Spores are plants that can grow into new plants. Mosses and other non-vascular plants reproduce from spores. Ferns are a vascular plant that reproduces by spores.

GA G.P.S. Coach book (2011 p. 81

List some of the groups into which scientists classify plants.

color, shape, size, how they reproduce, and their flowers or seeds.

Draw the picture of short root and long root plants.

Which will probably live in a dry environment?

Vascular Plants -Have roots, tubes, leaves, flowers, other

Non-vascular Plants -Absorb nutrients

Xylem - carries water & nutrients from the roots.

Phloem - carries food from the leaves to the rest of the plant.

Gymnosperms- Plants that grow flowers. Produces naked seeds.

Main Idea: Non Vascular plants have characteristics that distinguish them from other plants.

Detail 1: They have root-like structures, but have no true root.

Detail 2: Their leaf-like structures help them make food.

Extend Page