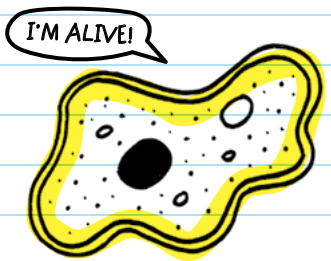
Chapter 28

ORGANISMS AND BIOLOGICAL CLASSIFICATION

What makes a living thing? An **ORGANISM** is anything living. But what does it mean to be living? Living things:

- Are structured around the most basic living unit: a cell
- Grow, change, and develop
- Respond to **STIMULI** (anything that causes a reaction in organisms, such as sunlight, temperature, or other environmental factors)
- Consume energy in order to live
- Reproduce

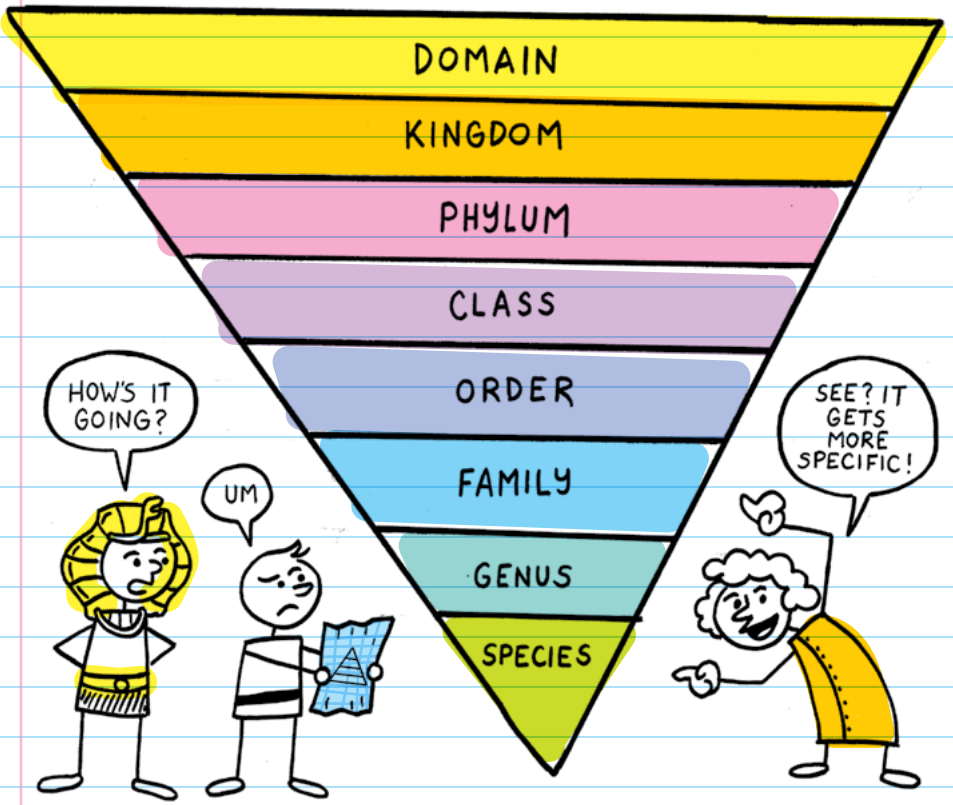


CLASSIFICATION

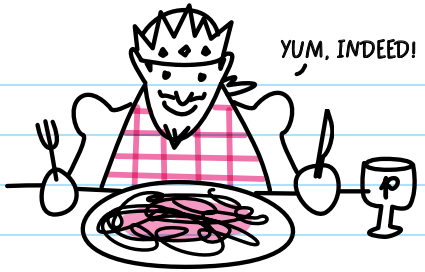
Scientists classify organisms by their structure and how closely related they are. They arrange them into groups and categories based on the features they have in common.

Classification Hierarchy

Scientists place organisms in broad to specific categories. Here is the order from the broadest grouping to the most specific grouping:



To remember the classification system, keep in mind this mnemonic:



Dear **K**ing **P**hilip **C**ame **O**ver **F**or **G**reat **S**paghetti!

(**D**omain, **K**ingdom, **P**hylum, **C**lass, **O**rder, **F**amily, **G**enus, **S**pecies)

BINOMIAL NOMENCLATURE

CAROLUS LINNAEUS developed a system to classify organisms using Latin and **BINOMIAL NOMENCLATURE**, which just means "a name with two terms." The first word of the term defines **GENUS**, which is the smallest group of similar species, and the second word defines the **SPECIES** itself. Binomial nomenclature is sort of like a first and last name—one is more specific than the other. For example ***Tyrannosaurus rex*** or ***Canis lupus*** (the gray wolf). Binomial nomenclature helps scientists from any country in the world know which organisms have what characteristics.

There are fewer and fewer species as you get to more specific categories—so a kingdom has many more species than a genus.

SPECIES
group of living organisms that are able to exchange genes or interbreed