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## Classifying Life's Diversity - lesson 1

### Why is this important?

- doctors need to correctly identify the infected organism before they can treat it
- edible and medicinal plants must be correctly identified before you use them
- standard system allows scientists to work in different countries

### 3 common concepts for defining species:

1. Biological Species Concept: behaviour and ability
  - advantage: widely used by scientists
  - disadvantage: not applied for all cases; if they're physically separated (live far away)
2. Morphological Species Concept: appearance, structure/form of an organism, change over time
  - advantage: widely used(plants), easy
  - how much is too different
3. Phylogenetic Species Concept: evolutionary, DNA evidence
  - advantage: used for extinct species,
  - not all history is known for species (cost and time)

Taxonomy: science of classifying and organizing organisms

Binomial nomenclature system: two part naming system

- capital Genus 1st word
- lower case species 2nd word
- underline of italics

Hierarchical Classification: least specific to most specific

### Linnaean System of Classification:

- each level is a rank, classification of organism at each rank is the taxon
- 3 domains (Bacteria, Archaea and Eukarya) 6 kingdoms (Bacteria, Archaeabacteria, Protista, Plantae, Fungi, and Animalia)
- Domain - Kingdom - Phylum - Class - Order - Family - Genes - Species
- Did - King - Philip - Come - Over - For - Good - Spaghetti

### Importance of Classification :

- discover new drugs
- trace diseases and find treatments

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## Kingdoms and Domains - lesson 2

6 kingdoms - Bacteria, Archaeabacteria, Protista, Plantae, Fungi, and Animalia

- shape, structure of virus
- type of disease
- genetic material (DNA, RNA)
- reproduction method

Lytic Cycle: immediate

injects into host

makes copies of itself

new virus assembled

release new virus

vaccines

- killed virus injected into human
- recognize and fight future infections

Lesson 5

Cocci - spherical      Spirilli - spiral      Bacilli - rod

Strep - chain      Staph - group/ cluster

Aggregation - material clump together

Aerobic - live in air

Anaerobic - live without air

Mesophiles - live in moderate conditions

Extremophiles - live in extreme habitat conditions

Plasmids - small, circular strand of cell of chromosomal DNA

Thermophiles - live in hot areas (hot springs)

Halophiles - live in salty areas (salty lakes)