

# (INVERTEBRATES = no backbone)

## KINGDOM: ANIMALIA

### PHYLUM: **Porifera** (sponges)

- sac-like body with simple cellular structure
- has no true tissues
- body shows asymmetry

### PHYLUM: **Cnidarians** (jellyfish, coral, sea anenomes)

- body shows radial symmetry
- either *polyp* or *medusa* body forms
- two cell layers and "stinging cells"

### PHYLUM: **Platyhelmenthes** (flatworms: planaria, tapeworms)

- body shows bilateral symmetry
- has flattened body shape
- can be parasitic (lives off a host)

### PHYLUM: **Nematoda** (roundworms: nematodes, rotifers)

- body shows bilateral symmetry
- is often parasitic (lives off a host)
- has smooth rounded body

### PHYLUM: **Annelida** (segmented worms: earthworms, leeches)

- body shows bilateral symmetry
- body has segments
- has complex organ systems

### PHYLUM: **Mollusca** (clams, snails, octupi, etc.)

- have outer tissue called mantle
- has muscular foot (or tentacles)
- all organs are in one area called **visceral mass** (holds organ systems)

### PHYLUM: **Arthropoda** (arachnids, crustaceans, insects, centipedes)

- exoskeleton
- jointed appendages
- segmented bodies
- most abundant animal phyla

### PHYLUM: **Echinodermata** (sea stars, sand dollars, sea urchins, sea cucumbers)

- name means "spiny skin"
- body shows radial symmetry
- larvae develop similarly to embryos of vertebrates (but is *invertebrate*)