


# PHYLUM CNIDARIA

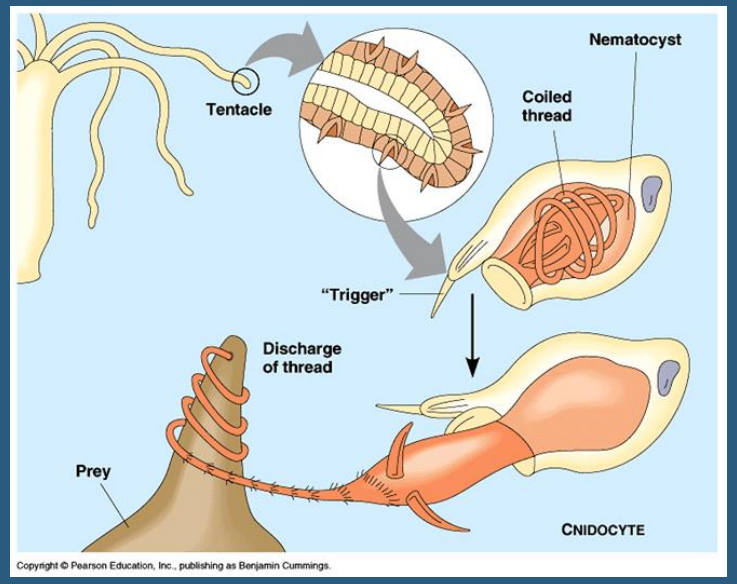
Hydras, Jellyfish, Sea Anemone's and Coral

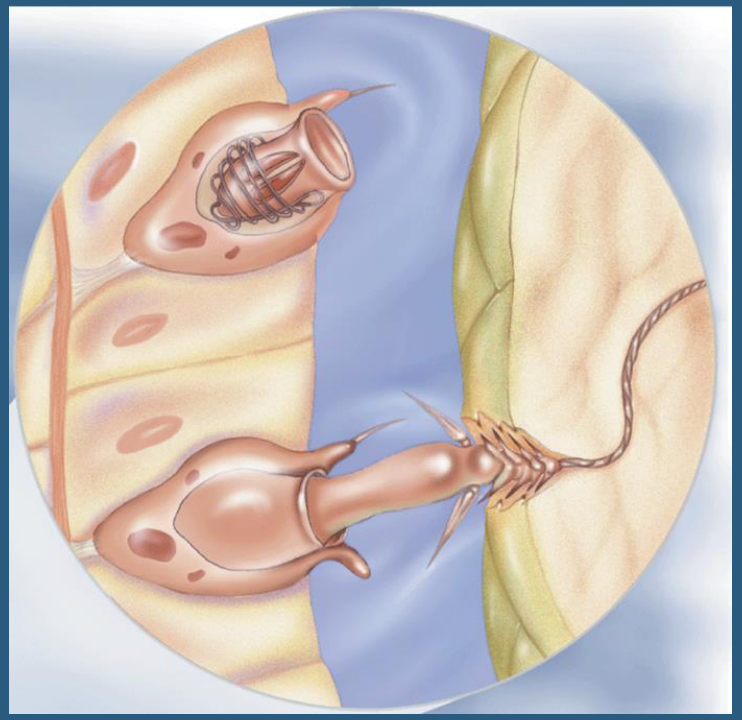
# FEATURES OF CNIDARIANS

- Cnidarians are soft-bodied
- Carnivorous animals
- Stinging tentacles arranged in circles around their mouths
- They are the simplest animals to have body symmetry
- Specialized tissues

# STRUCTURE AND FUNCTION

- Cnidarians get their name from the cnidocytes
  - Stinging cells, located along their tentacles
  - Used for defense and to capture prey
- Within each cnidocyte is a nematocyst
  - a poison-filled, stinging structure that contains a tightly coiled dart
- When prey brush against the tentacles of a cnidarian, thousands of nematocysts explode into the animal
  - Paralyze/kill prey



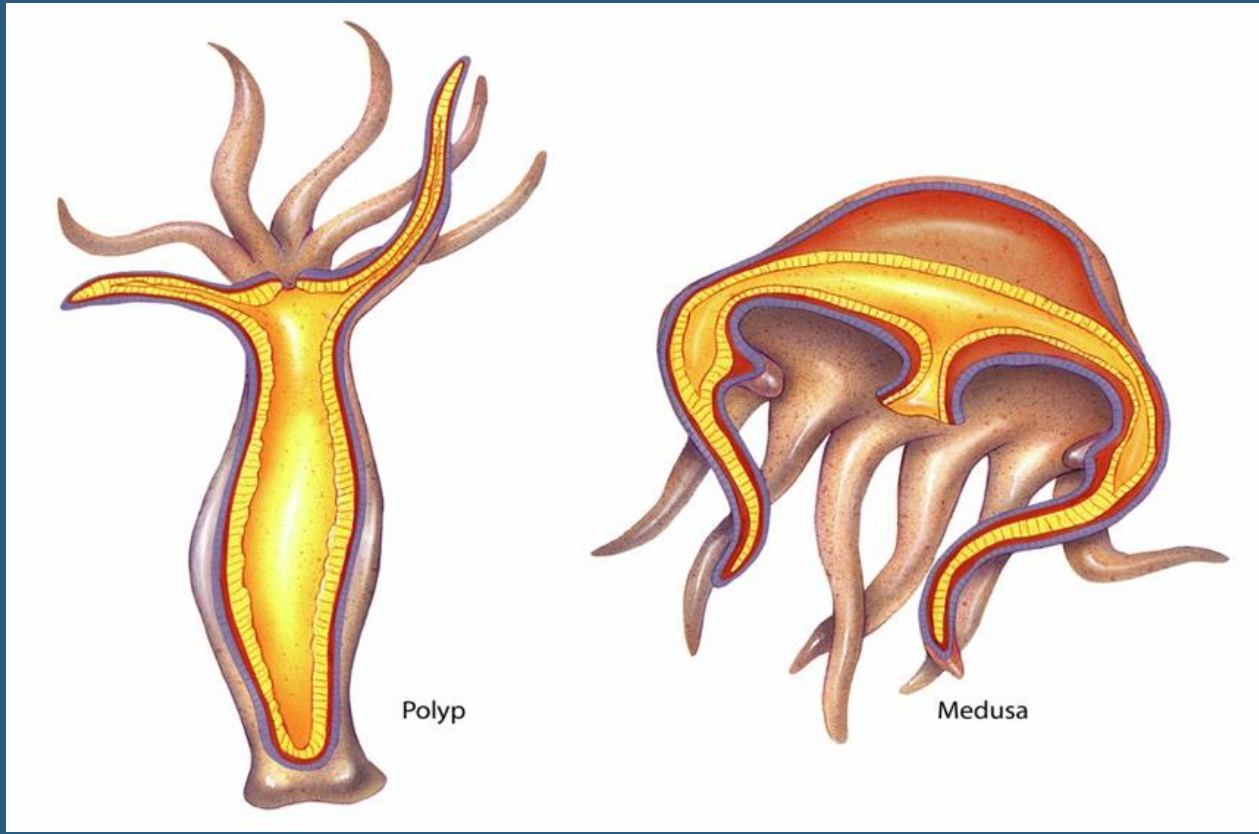

Jellyfish sting

# BODY PLAN

- Radial Symmetry
- Central mouth surrounded by tentacles

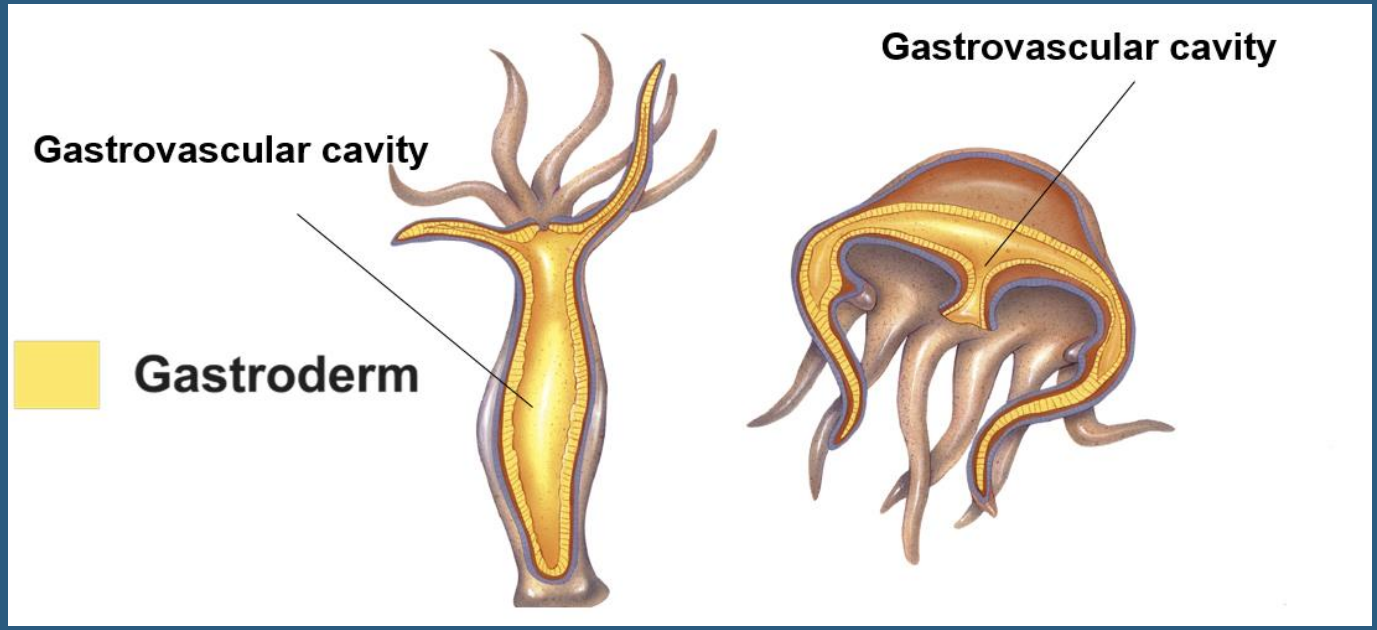
# LIFE CYCLE

- Cnidarians typically have a life cycle that includes two different-looking stages:
  - a polyp and a medusa.
- Polyp
  - Cylindrical body with armlike tentacles
  - Mouth points upward
  - Sessile
- Medusa
  - Motile
  - Bell shaped body
  - Mouth at bottom



# 2 LAYERS

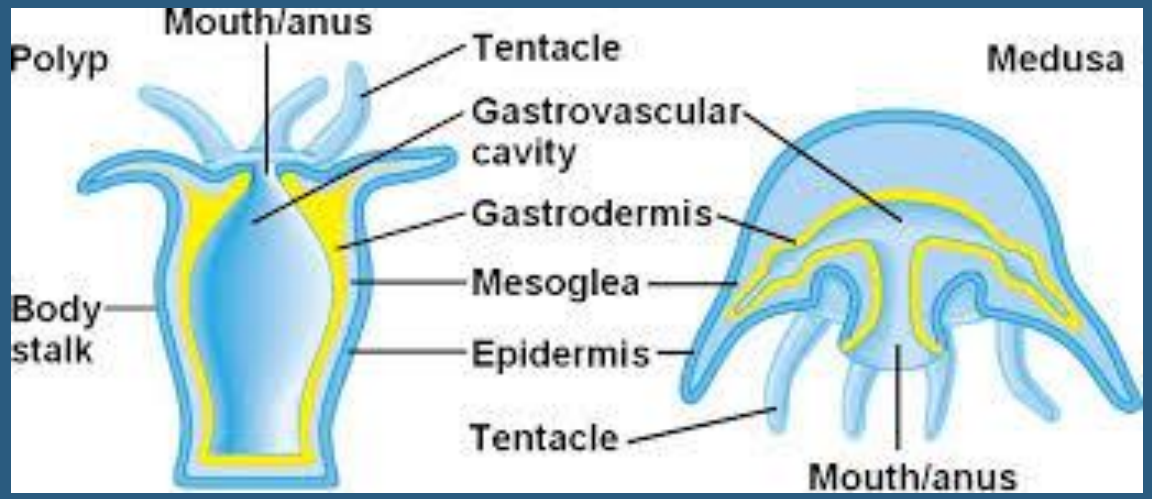
- The gastroderm is the inner lining of the gastrovascular cavity, where digestion takes place
- Epidermis
  - Outer layer of cells (blue)
- Mesoglea
  - Seperates epidermis and gastroderm



# FEEDING

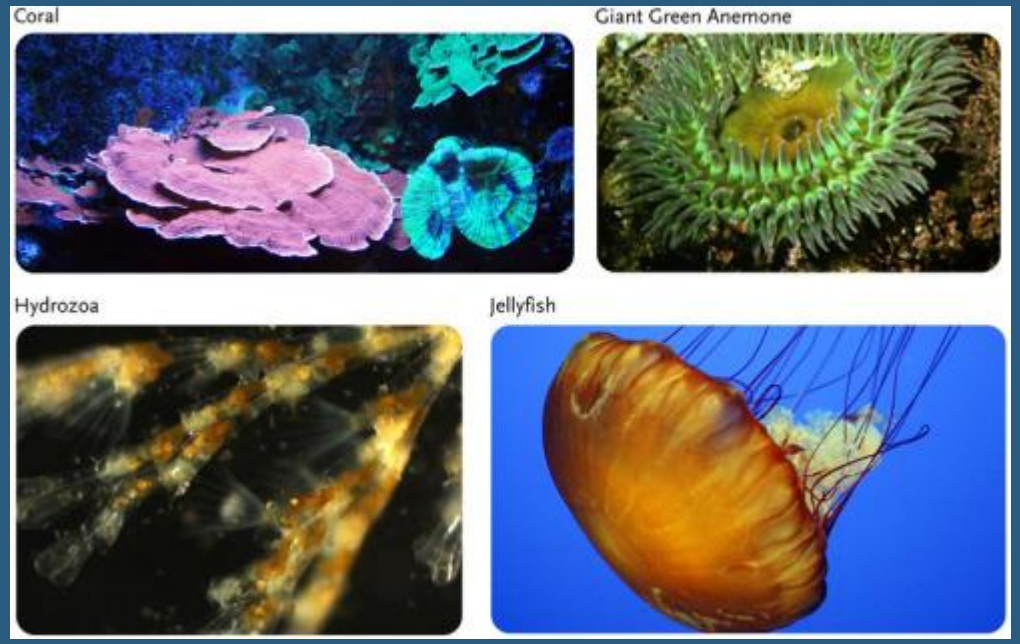
- After stunning prey
  - Pulled into gastrovascular cavity using tentacles
- Food and wastes leave the body through the same opening
  - Incomplete gut/digestive system
- Digestion begins in the Gastrovascular cavity (GV)
  - Extracellular (outside cells)
  - Partially digested food absorbed by gastroderm
    - Digestion completed intracellularly

    - Examples of feeding
      - Sea anemone
      - Sea anenome
      - Jellyfish



# RESPIRATION/CIRCULATION/EXCRETION

- Only a few cells thick
- Simple body system
- Following digestion
  - Nutrients transported via diffusion
- Respiration/excretion
  - Wastes leave via Diffusion through body walls



# RESPONSE

- Gather info via specialized sensory cells
- Both polyps and medusas have a nerve net
  - loosely organized network of nerve cells
    - Allow cnidarians to detect stimuli
- Statocysts
  - Group of sensory cells that help cnidarians determine the direction of gravity
- Ocelli
  - Eyespots made of cells that detect light