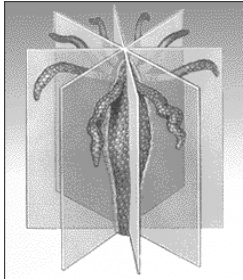


Animals

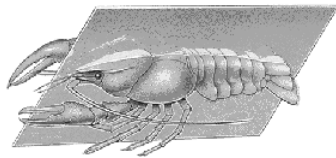
I. Characteristics of Animals

- A. Heterotrophic- depend on others for food
- B. Digest their food
- C. Move
- D. Multicellular
- E. Eukaryotic



II. Animal Classification

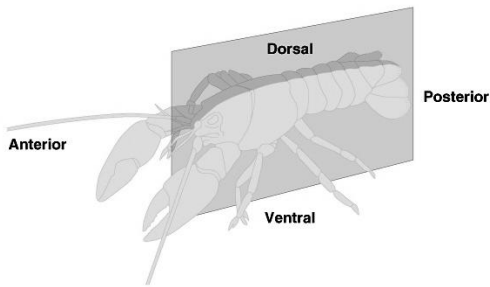
- A. Vertebrate
- B. Invertebrate
- C. Symmetry



- 1. Radial
- 2. Bilateral
- 3. Asymmetry

D. Areas on bilaterally symmetrical organisms

- 1. Anterior
- 2. Posterior
- 3. Dorsal
- 4. Ventral



E. Embryo layers of development

- 1. ectoderm
- 2. endoderm
- 3. mesoderm

F. Body Cavities

- 1. Acoeloem
- 2. Pseudocoeloem
- 3. Coeloem

(b) Bilateral symmetry
Illustration as Benjamin Cummings.

III. Sponges & Cnidarians

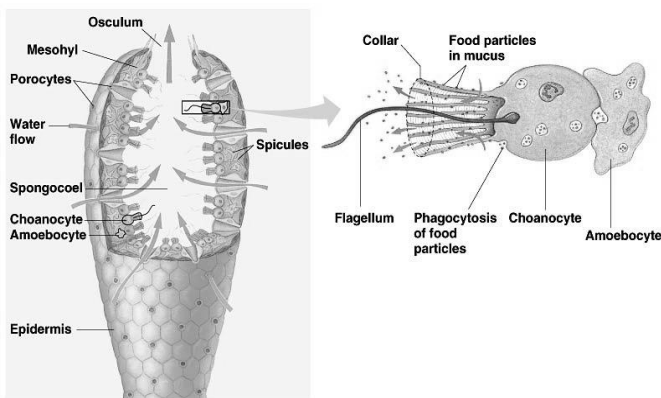
A. Sponges are in the phylum Porifera

1. Characteristics

- a. Aquatic
- b. Most are asymmetrical
- c. Adult form is sessile
- d. Have no tissues, organs, or organ systems or nervous system
- e. Basic sponge body plan

2. Obtaining food

- a. Feeds on plankton by filter feeding
- b. Uses flagella to move water
- c. Collars on collar cells trap plankton



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3. Reproduction

- a. Asexual
 - a. Budding, fragmentation and regeneration
- b. Sexual
 - a. Hermaphrodites
 - 1) Have both male and female parts
 - b. Fertilization takes place in water
 - c. Larvae swims to area to start new sponge

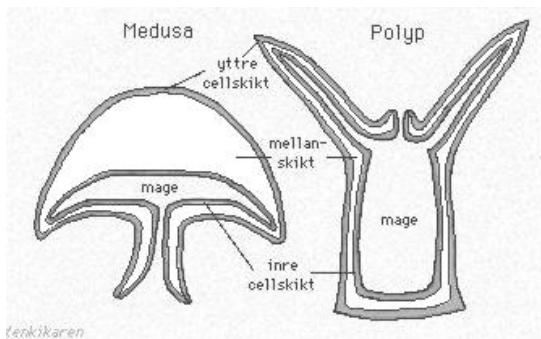
B. Cnidarians

1. Characteristics

- a. All have stinging cells
- b. Radial symmetry
- c. Have two cell layers (tissues)
- d. Have a body cavity
- e. Have tentacles
- f. Aquatic
- g. Two body plans
 - a. Polyp
 - b. Medusa
 - c. Many cnidarians have both stages

2. Reproduction

- a. Asexual – Polyps reproduce asexually by budding
- b. Medusa can produce sexually and asexually
 - a. Sexually
 - 1) Egg and sperm
 - 2) Larvae stage
 - 3) Polyp stage
 - 4) Medusa



IV. Flat worms and Round worms

A. Flatworms are in the phylum Platyhelminthes

1. characteristics

- a. bilateral symmetry
- b. soft flattened body

- c. 3 tissue layers
 - d. definite organs
 - e. nervous tissue
 - f. many are parasites but some are freelifving
2. Planarians
 - a. Free living
 - b. Hermaphrodites
 - c. Can reproduce asexually by dividing and regeneration
 3. Tape Worms
 - a. Parasitic
 - b. Hermaphrodites
- B. Round worms Phylum nematoda
1. Characteristic
 - a. Complete digestive system
 - b. 3 tissue layers
 - c. organs present
 2. Types of Roundworms
 - a. Ascaris – round and pin worms
common human parasites
 - b. Trichinella
 - c. Hook worms
 - d. Heart worms
 - e. Filarial worms
 - f. Many in Large intestine
 - a. 64% of worlds population
 - b. 30% of children in US
 - c. 16% of the adults in the US