Comparing Invertebrates

I. Digestion

1. Filter Feeders (sift food through water current)
   - sponges
2. One-Way Digestion (food enters mouth and exits through anus)
   - roundworms
   - annelids
   - mollusks
   - arthropods
   - echinoderms
3. Two-Way Digestion (food enters mouth and exits through mouth)
   - cnidarians
   - flatworms

II. Respiration

1. Simple Diffusion
   - sponges
   - cnidarians
   - flatworms
   - roundworms
   - annelids
   - echinoderms
2. Gills
   - mollusks
   - arthropods (crabs)
3. Lungs
   - arthropods (spiders)
4. Trachael Tubes
   - arthropods (grasshoppers)

III. Internal Transport

1. Simple Diffusion
   - sponges
   - cnidarians
   - flatworms
   - roundworms
   -echinoderms
2. Open Circulatory System (blood not only confined to blood vessels)
   - mollusks (snails, clams)
   - arthropods
3. Closed Circulatory System (blood confined to blood vessels)
   - annelids
   - mollusks (octopi, squids)

IV. Excretion (cellular wastes)

1. Simple Diffusion
   - sponges
   - cnidarians
   - roundworms
   - arthropods (aquatic)
   - echinoderms
2. Excretory Pores
   - flatworms
   - annelids (nephridia)
   - mollusks (nephridia)
3. Malpighian Tubules
   - arthropods (terrestrial)

V. Response

1. No Nervous System
   - sponges
2. Nerve Net (scattered neurons)
   - cnidarians
3. Ganglia With Nerves
   - flatworms
   - roundworms
4. Brain With Branching Nerve Cords
   - annelids
   - mollusks (highly developed)
   - arthropods
5. Nerve Ring
   - echinoderms

VI. Movement

1. Hydrostatic Skeleton (muscles supported by a water-filled body cavity)
   - cnidarians
   - flatworms
   - roundworms
   - annelids
   - mollusks (slugs)
2. Exoskeleton (hard external covering that encloses internal organs and muscles)
   - mollusks (clam)
   - arthropods
3. Endoskeleton (rigid structural framework on the inside of the body)
   - sponges (spicules)
   - echinoderms
   - chordates

VII. Reproduction

1. Asexual
    - Budding
        - sponges
        - cnidarians
    - Regeneration
        - sponges
        - flatworms
        - echinoderms
2. Sexual
    - Hermaphroditic
        - flatworms
        - annelids
    - Dioecious (separate sexes)
        - roundworms
        - mollusks
        - arthropods
        - echinoderms
    - External Fertilization
        - sponges
        - cnidarians
        - mollusks (crabs)
        - echinoderms
    - Internal Fertilization
        - mollusks (cuttlefish)
        - arthropods