

**Note-taking
Worksheet****Invertebrate Animals****Section 1 What is an animal?**

A. Animal characteristics—_____ features

1. Composed of many eukaryotic _____, must find and digest their own _____, and usually can _____
2. _____—arrangement of parts
 - a. _____ symmetry—parts are arranged in a circle around a central point
 - b. _____ symmetry—parts are mirror images of each other
 - c. _____—no definite shape

B. Animal classification—placed into _____ groups

1. _____—animals with a backbone
2. _____—majority of animals which lack a backbone

Section 2 Sponges, Cnidarians, Flatworms, and Roundworms

A. Sponges—don't move to find food since adults are _____ or stuck in one place

1. Filter _____—filter food out of water that flows through body
 - a. _____ let water into central cavity.
 - b. _____ keep water moving through sponge.
2. Soft sponge bodies are protected by sharp _____ or rubbery _____.
3. Sponges _____ sexually and asexually.
 - a. In _____ reproduction a new sponge grows from pieces of an old sponge
 - b. Most sexually reproducing sponges are _____, producing both eggs and sperm.

B. _____—have tentacles and hollow bodies

1. Two _____ shapes
 - a. _____ cnidarians are usually sessile and have vase-shaped bodies
 - b. A _____ body is free-swimming and bell-shaped
2. Cnidarians _____ both sexually and asexually.
 - a. Polyp forms reproduce asexually by _____.
 - b. Some polyps also reproduce sexually by releasing _____ or _____.
 - c. Medusa forms have a _____-stage life cycle in which they reproduce both sexually and asexually.

Note-taking Worksheet (continued)

C. Flatworms—_____ for their food

1. Have long, flattened bodies with _____ and systems
2. Most are _____ living off or in a host.
3. _____—a type of flatworm
 - a. Lack a _____ system and absorb nutrients from the host's intestines
 - b. Tapeworms reproduce _____.

D. _____—very common animals

1. Body is a _____ within a tube.
2. _____ has both a mouth and an anus.
3. _____ vary with some roundworms being decomposers, some predators, and some parasites.

Section 3 Mollusks and Segmented Worms

A. Characteristics of _____—invertebrates usually with shells protecting their soft bodies, mantle, and muscular foot

1. _____—tissue that covers a mollusk's soft body and that may produce a shell
2. Lungs or _____ exchange carbon dioxide from the animal for oxygen in the air or water.
3. Many mollusks use a _____, a scratchy tongue-like organ, to help them eat
4. Some mollusks have an _____ **circulatory system** which washes blood over organs and lacks blood vessels.

B. Types of Mollusks

1. _____—most have _____ shell
 - a. Live in _____ or on _____
 - b. Move by gliding their large muscular foot across a trail of _____
2. _____—have two shells
 - a. Large _____ open and close shell halves
 - b. Water animals that _____
 - c. Use _____ to remove foot from water
3. _____—have no shell
 - a. Have a foot divided into _____ with suckers
 - b. Move by using a mantle to quickly squeeze water through a funnel-like _____
 - c. Have a _____ **circulatory system** with blood vessels

Note-taking Worksheet (continued)

- C. Segmented Worms—also called _____, have repeating segments, a closed circulatory system, and digest food in a complete system with two openings
- _____—have more than 100 body segments
 - User External bristle-like _____ and muscles to move
 - Eat organic _____ in soil
 - Exchange carbon dioxide and oxygen through mucus-covered _____
 - _____—have flat bodies with sucking disks at both ends
 - Attach to animals and remove _____ for food
 - Can _____ enormous amounts of food for months
 - _____—use bristles or setae for moving
 - Some marine worms are _____ feeders.
 - Some eat _____ or rotting material.
 - Some marine worms are predators or _____.

Section 4 Arthropods and Echinoderms

- A. _____—have **appendages** such as claws, legs, and antennae plus an **exoskeleton**
- Insects—such as ants have three body regions called the head, the _____, and the abdomen
 - Open circulatory system transports food and waste but _____ gather oxygen.
 - Insects change body form in process called _____.
 - _____—such as spiders have two body regions called the cephalothorax and the abdomen plus four pairs of legs
 - Centipedes and millipedes—long, thin, segmented animals
 - _____—predators with one pair of jointed legs per segment
 - _____—plant eaters with two pairs of jointed legs per segment
 - _____—water animals such as lobsters usually having two pairs of antennae, three types of chewing appendages, and five pairs of legs
- B. _____—have radial symmetry
- _____ vary—some are predators, some are filter feeders, some eat rotting material
 - Echinoderms have _____ skin covering an internal skeleton of plates.
 - Echinoderms have a _____ system to help them move and eat.
 - Some echinoderms can reproduce through _____ from parts.