Name _____ Date _____ Class _____

Echinoderms

Guide for Reading

- What are the main characteristics of echinoderms?
- What are the major groups of echinoderms?

Echinoderms are invertebrates with an internal skeleton and a system of water-filled tubes called a water vascular system. The skin of most echinoderms is stretched over an internal skeleton, called an **endoskeleton.** The **water vascular system** consists of fluid-filled tubes within the echinoderm's body. Portions of the tubes can squeeze together, forcing water into structures called **tube feet.** Most echinoderms use their tube feet to move and to capture food.

Most echinoderms are either male or female. Eggs are usually fertilized in the water. The fertilized eggs develop into larvae. The larvae eventually undergo metamorphosis and become adults.

There are four major groups of echinoderms: sea stars, brittle stars, sea urchins, and sea cucumbers. Sea stars are predators with five arms. A sea star feeds by forcing its stomach out through its mouth and between the shells of its prey. Chemicals break down the prey. The sea star sucks in the partially-digested prey.

Brittle stars have long and slender arms, with flexible joints. Brittle stars use their arms to slither along the ocean bottom.

Unlike sea stars and brittle stars, sea urchins have no arms. Moveable spines cover and protect their bodies. A sea urchin's spines cover a central shell that is made of plates joined together. Sea urchins move mostly by using bands of tube feet that extend out between the spines.

The bodies of sea cucumbers are soft, flexible, and muscular. They move by using five rows of tube feet on their underside. Sea cucumbers use their tentacles to sweep food toward their mouths.

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This section tells about bumpy-skinned animals called echinoderms.

Use Target Reading Skills

Preview the figure in your textbook showing a sea star's water vascular system. Then write two questions that you have about the diagram in the graphic organizer below. As you read, answer your questions.

Water Vascular System

Q. What are tube feet?
A.
Q.
A.

Characteristics of Echinoderms

1. What is an echinoderm?

   _____

   _____

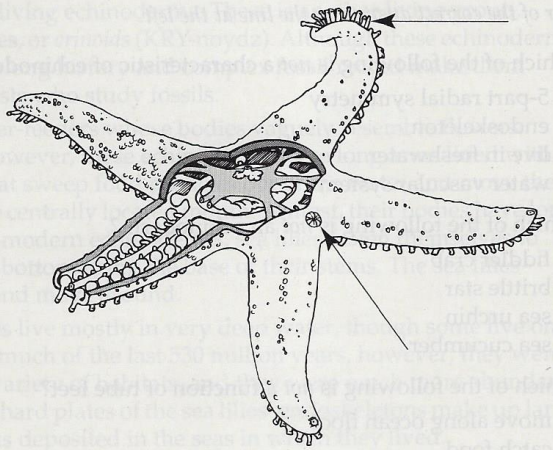
2. The skin of most echinoderms is stretched over an internal skeleton, called a(n) _____.

3. What is a water vascular system?

   _____

   _____

4. Label the parts of a sea star's water vascular system in the diagram below.



Diversity of Echinoderms

5. Is the following sentence true or false? A sea star forces its stomach into the opening of a clam's shell to digest the clam's body.

_____

6. Complete the table about the characteristics of other echinoderms.

Characteristics of Other Echinoderms			
Characteristics	**Brittle Stars**	**Sea Urchins**	**Sea Cucumbers**
How they get food			
Movement			