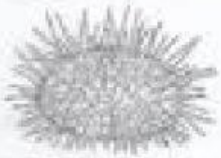
Lesson 4

Echinoderms



Echinoderms are marine invertebrates. They have external skeletons, a nervous system, and they are covered with spines that stick out from their bodies or hard plates. The spines of echinoderms protect them from predators. The spines break off easily when touched. These spines are actually a part of the animal skin. Echinoderms live only in the **ocean**. They use tiny **gills** to get oxygen from the seawater. Examples of echinoderms found in The Bahamas are **starfish, sand dollar, sea urchin,** and **sea cucumber.** Others include **brittle stars, sea feathers,** and **sea biscuits.**



Echinoderms do not have brains, but they have nerves that enable them to move and feed. Most adult echinoderms appear to have radial symmetry, with five arms extending from the center of their bodies. Sea Urchins and Sand Dollars do not have arms like the starfish, but they have paired rows of tube feet extending symmetrically from the mouth. The mouth is at the center of the underside of the body. Many echinoderms have powerful jaws and poison glands hidden among the spines. These adaptations help them get food and defend themselves.





Starfish are sea animals whose bodies are covered with a tough skin and spines. These animals have similar body parts that come out from the center of their bodies. For example, most starfish have five arms. These arms have rows of little **"feet"** that grasp food. The tube feet will allow them to move. When water enters the canals in the tube feet this causes the feet to extend and push against the ground and then relaxing to allow the feet to retract. Starfish has a powerful jaw and poison glands that help them to protect themselves. When a part of the starfish is broken off it regrows into a new part. The **regeneration** process helps the starfish group to keep on expanding.



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