

# SEA URCHINS

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## SCIENTIFIC CLASSIFICATION

**COMMON NAME:** sea urchins, regular urchins

**KINGDOM:** Animalia

**PHYLUM:** Echinodermata

**CLASS:** Echinoidea

**ORDER:**

**FAMILY:**

**GENUS SPECIES:**

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## FAST FACTS

**DESCRIPTION:** Sea urchins are round animals. Pointed spines cover an urchin's entire body except the oral surface. The skeleton of a sea urchin is composed of closely joined calcareous plates forming a rigid case around the vital organs. This is called the "test." Tube feet emerge from pores in the test. There are several highly-developed types of pedicellariae among the spines and around the mouth. The pedicellariae keep algae and debris from collecting on the urchin.

**SIZE:** The test is 6 to 12 cm in diameter (2.36–4.72 in.)

**LOCOMOTION:** Sea urchins move in a similar way to sea stars, using a water vascular/tube foot system.

**DIET:** Kelp and other types of algae

**FEEDING:** Sea urchins have a system of hard jaws and teeth for grinding food. Because the Greek philosopher and naturalist, Aristotle, described the structure, it is known as Aristotle's lantern. Aristotle's lantern is made of five long, chisel-like teeth that meet at the mouth opening.

<b>REPRODUCTION:</b>	Sea urchins are either male or female. An urchin releases large quantities of eggs or sperm into the water for fertilization.
<b>RESPIRATION:</b>	Most sea urchins have external gills on the oral surface. They also respire with their tube feet.
<b>LIFE SPAN:</b>	Purple sea urchins may live 30 years or more.
<b>RANGE:</b>	All oceans
<b>HABITAT:</b>	Benthic, rocky substrates, tide pools

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## FUN FACTS

1. Echinoderm is a Greek word meaning "spiny-skinned." Animals in the phylum Echinodermata all share a few common characteristics:
  - Endoskeleton (internal skeleton) – made up of ossicles, a type of calcareous structure
  - Tube feet
  - Radial symmetry in adults – the adult body symmetry radiates around a central axis. The pattern of symmetry is pentamerous—it occurs in five or multiples of fives.
2. When eating kelp, the urchin usually eats the stipe (stem). Once the sea urchin has eaten through the stipe, the rest of the plant floats away. An overabundance of sea urchins can destroy an entire kelp forest.
3. Sea urchins use their spines for protection, defense, movement, and burrowing. The spines rest on ball and socket joints along the test. Sea urchins can rotate their spines and burrow into solid rock or other substrates. They wear the surface down with their spines and pull away the bits of rock with their tube feet. Since the spines grow longer with age, an urchin may actually imprison itself if it grows too large for the hole it burrowed.
4. Because they are numerous and easily obtainable, sea urchin eggs and sperm have provided excellent models for numerous studies in developmental biology.
5. Sea urchins reproductive organs, called "roe" or "uni," are considered a delicacy in many parts of the world.
6. The spines of most sea urchins are not venomous. Most pedicellariae are too small to inject venom through human skin. However, a few kinds of sea urchins, such as the tropical leather urchin, do have venomous spines. Others with shorter spines have large pedicellariae that are venomous.
7. For more information, visit the Tide Pool Infobook.

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## ECOLOGY AND CONSERVATION

Sea urchins are eaten by sea otters, some sea stars (ochre, leather, and fragile rainbow), and some fishes (especially the California sheephead).

Many species of sea urchins are harvested as food. Sea urchin harvesting has become one of the most commercially important fisheries in California.

Beachcombers, tidepoolers, and divers must remember not to disturb or collect any specimens that they may encounter. The removal of animals from an ecosystem may disrupt ecological processes and decrease the diversity in areas that are frequently visited. Because of their specific nutritional and physiological needs, certain animals, such as sea urchins have a much better chance for survival in their natural environment than in an unregulated home aquarium.

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## BIBLIOGRAPHY

Buchsbaum, M. R. a. P., Vicki & John. (1987). Living Invertebrates. Pacific Grove, CA, The Boxwood Press.

Morris, R. H., D. p. Abbott, et al. (1980). Intertidal Invertebrates of California. Stanford, Stanford University Press.

Myers, P., R. Espinosa, C. S. Parr, T. Jones, G. S. Hammond, and T. A. Dewey. 2006. The Animal Diversity Web (online) <<http://animaldiversity.org>>

Ruppert, E. E. and R. D. Barnes (1994). Invertebrate Zoology. San Diego, Harcourt Brace College Publishers.

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