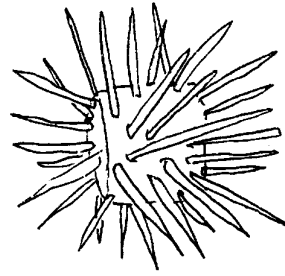


# Constructing Sea Urchins

Lesson by Patty Enright, Stillwater, MN

## Key Concept

1. Sea urchins have body parts and behaviors that help them survive in their habitat.



## Background

Looking for all the world like a moving pin cushion, sea urchins are durable dwellers of tide pools and ocean bottom. These bristling spheres have long tube feet and spines attached by ball and socket joints which give a surprising degree of movement. The spines are worn away when a sea urchin dies to reveal a “shell” (called a test) with a five-point star pattern which indicates the close relationship of sea urchins to sea stars.

In the larger tide pools, herds of sea urchins graze on a variety of seaweeds. A sea urchin’s mouth is made of five teeth (actually five moveable jaws) which come together as a powerful feeding mechanism. Together, the five jaws are called “Aristotle's Lantern” in honor of the Greek philosopher and naturalist who described the structure as being similar to an ancient lamp. These efficient teeth help sea urchins to eat a lot of seaweed. In kelp beds, in particular, sea urchins sometimes destroy whole kelp forests by cutting away at the lower portions of the plant.

Additional background information about sea urchins is found in Chapter 10 of *Pagoo*.

## Materials

For each student:

- 1"-3" Styrofoam ball, large marshmallow (colored or white), or ball of clay
- tempera paint
- markers (optional)
- several toothpicks (rounded ones work best for short spined urchins and bamboo skewers for long spined urchins)

## Teaching Hints

“Constructing Sea Urchins” provides students with an opportunity to relate form and function in another tide pool inhabitant as they create model sea urchins.

### Procedure

1. Discuss the physical characteristics of sea urchins and how these characteristics help sea urchins survive in tide pools.
2. Have students paint Styrofoam balls using brushes, or roll the balls in paint. If Styrofoam balls are unavailable, standard-size marshmallows or similarly sized balls of clay may be substituted.
3. Stick three toothpicks into the ball, forming a 3-legged base that holds the ball up. Allow the paint to dry completely.
4. While the paint is drying, discuss how the urchin moves, eats, and defends itself.
5. Have students paint toothpicks or skewers. Markers can also be used.
6. Poke toothpicks or skewers into the Styrofoam ball. The sea urchin is complete.
7. Find a home for the new sea urchins in your classroom tide pool, constructed in the preceding unit 2 activity, “Tide Pools in the Classroom”.