



Coral Reef Spawning Snow Globe

This lesson plan developed by:



Overview:

Since corals are unable to move along the seafloor to find a mate, one of the ways hard corals sexually reproduce is by spawning in a mass synchronized event, when all the coral species in an area release their eggs and sperm at about the same time. The timing of the event happens based on cues from the environment. Students will create an eco-friendly coral reef spawning snow globe to learn about and mimic a mass spawning event.



Materials:

- Small glass jar with lid
- Mineral oil
- Epsom salt
- Chenillie pipe cleaners
- Several colors of modeling clay
- Thin paint brush
- Scissors
- Tablespoon

Coral Reef Spawning Snow Globe (cont.)

Duration:

30-60 minutes

Physical Activity:

Low

Background:

Coral reef ecosystems are essential to our oceans. They provide important habitat for underwater life, protect coastlines from storms and erosion, provide jobs for local communities and offer opportunities for recreation.

Corals can reproduce both asexually and sexually. In asexual reproduction, new clonal polyps bud off from parent polyps to expand or begin new colonies. In sexual reproduction, corals can't move around the seafloor to find mates. Instead, one of the ways hard corals reproduce is by releasing massive amounts of their eggs and sperm in the water simultaneously, which is called mass spawning. This occurs once a year based on cues from the lunar cycle, water temperature and time of the sunset. With this underwater blizzard happening at the same time, it makes fertilization and the growth of new corals more likely to happen.

Once fertilization takes place, the resulting planula larvae (baby corals) float with the current and develop, until they become heavy enough to sink and settle on the bottom. If they land in an area with proper conditions, they will mature into coral polyps.

Activity:

Part 1: Introduction to Coral Reef Mass Spawning

Ask the whole group the following questions:

- Has anyone seen pictures of a coral reef? Has any one visited a coral reef?
- Why are coral reefs important ecosystems?
- If coral reefs can't physically move to find a mate, how do you think they reproduce?

Part 2: Build a Coral Reef Spawning Snow Globe

1. Shape various colors of modeling clay to create a small reef of boulder corals on the inside of the jar lid. Press down firmly to ensure the clay adheres securely to the lid. To best see the boulder corals, it's helpful to put a layer of clay down in the lid first.
2. Use the handle end of a paintbrush to poke shallow holes into the boulder corals to represent the individual coral cups found on the surface of a coral colony.



Coral Reef Spawning Snow Globe (cont.)

3. Cut a chenille pipe cleaner apart between each of the fluffy segments. Fold each fluffy segment in half and press the folded end into the “reef” at various intervals to represent Christmas tree worms (2 to 3 per reef).
4. Fill jar with mineral oil leaving a little room for the coral reef on the lid. Add one tablespoon of Epsom salt to the jar.



5. Carefully screw the lid on the jar. Turn the jar over and shake to represent a mass spawning event.



Coral Reef Spawning Snow Globe (cont.)



Additional Resources:

To learn more about the activity, check out our [Coral Reef Snow Globe “how to” video](#).

Ocean Literacy Principles:

Ocean literacy is an understanding of the ocean’s influence on us, and our impact on the ocean. There are seven [Ocean Literacy Essential Principles](#) that all people of our blue planet should have an opportunity to learn and understand. This activity touches upon the following Essential Principles:

1. The Earth has one big ocean with many features
5. The ocean supports a great diversity of life and ecosystems
7. The ocean is largely unexplored

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