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Science Experiences That Come To You

Make a Coral Reef!

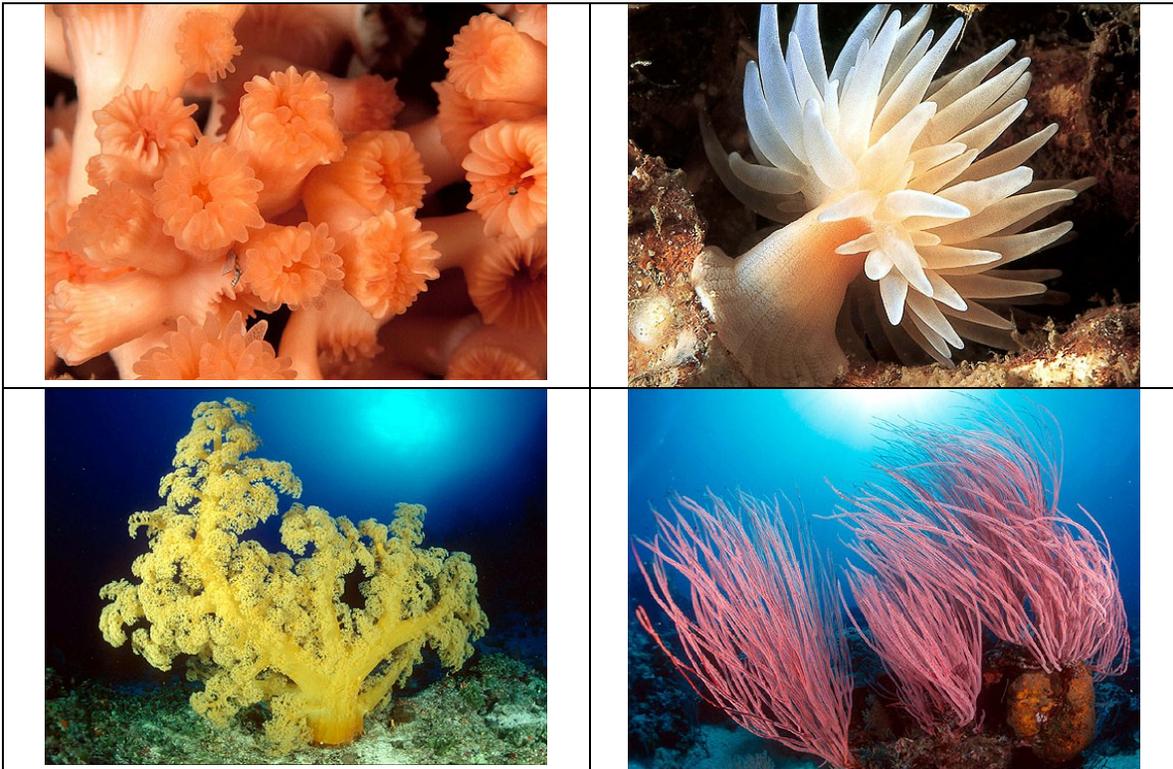
Ingredients & Supplies:

- Paper plate
- Small handful of modeling clay (Play-do)
- Assorted buttons, ribbons, sequins, moss, confetti, etc.
- Assorted pieces of coral or seashells
- Images of coral reefs

Instructions:

You can learn how to create your own coral reef! For this activity, you will need a paper plate, pieces of coral or seashells and modeling clay. Gather an assortment of craft items, such as buttons, string, ribbon, sequins, and confetti.

Take your piece of modeling clay and mold it into the shape of a coral reef. Use the following pictures for guidance.





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Next, take a piece of coral or a seashell and stick it into your clay to make a print. The coral will leave really cool impressions in your clay! Now collect an assortment of craft items, such as buttons, ribbon, sequins, and moss. Arrange these items in the clay. Moss will represent plant life. Buttons and sequins can represent the various types of marine life in your coral reef.

What types of organisms live in your reef? Be creative! Your coral reef will support a diverse ecosystem!

Science Behind It:

The Ocean is filled with marine life and is vital to the Earth's ecology. Within the depths of the ocean are coral reefs that form some of the most diverse ecosystems on the planet! In fact, coral reefs are the habitat for 25% of marine life!

Coral reefs are structures made of calcium carbonate, which is secreted by some marine invertebrates. The coral is a hard, stony material that is most commonly found in clear, tropical waters. The coral reefs form impressive structures that are extensive marine ecosystems. The reefs are a colony of tiny little organisms that have a **symbiotic relationship**. A symbiotic relationship is an interaction between two or more organisms living closely together. Each organism relies on the other for survival. For example, the coral helps algae and phytoplankton by protecting it and holding it up high where it can reach the sunlight. The algae and phytoplankton help the coral by turning the sunlight into energy through photosynthesis, which provides food for the coral. The largest reef in the world is the Great Barrier Reef in Australia. It is 1200 miles long! (That's longer than the distance between Seattle, Washington and Los Angeles, California!)

Coral reefs are important for marine animals and people! The reefs remove carbon dioxide from the air. They also protect the land from harsh waves and



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storms. Many marine animals live in coral reefs. Sea urchins, lobsters, snails, and sea sponges are just a few examples.

Coral Reefs usually display a variety of beautiful colors, such as blue, yellow, pink, green and purple, due to natural pigments. However, various types of stress, such as global warming cause coral to lose its coloration in a process called **coral bleaching**. Global warming has raised ocean temperatures around the world causing great stress and eventually death to coral reefs. Reefs are currently dying at the fastest rate in 11,000 years. This will lead to the extinction of certain marine animals that completely rely on the coral for food. Coral reefs are extremely important to the Earth's ecosystem. We all need to learn more about this vital habitat and protect it.

Scientist Highlight – Jacques Cousteau

Jacques Cousteau sailed the ocean educating millions of people on how to conserve and protect this vital habitat. Cousteau co-created scuba gear that allowed him to explore the ocean and film the amazing world beneath the water surface. This imagery was new and exciting! Cousteau's underwater documentaries presented the public with a brand new, undersea world! His discoveries also encouraged more scientific research of the ocean and its sea life.

Real World Relevance – World's Ocean Day

Together we have the power to protect the ocean!

In 1992, World Ocean's Day was first encouraged and celebrated to continue similar conservation efforts of the oceans. The United Nations officially declared World Ocean's Day in 1992. June 8 is now the international honorary celebration of the oceans and marine life. World Ocean's Day also brings attention to conservation, pollution reduction, overfishing, and international trade. The Ocean Project and the World Ocean Network partner together to raise awareness and create educational programs about this vital habitat and resource.

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