

Objectives

- ▶ understand that coral reefs are formed by coral animals
- ▶ understand the conditions corals need to grow

Vocabulary

polyp

tropical

colonies

Background

Coral reefs are formed by small, flower-like animals called polyps. The polyps have soft bodies surrounded by a hard limestone skeleton. The coral animals build their skeletons using minerals in seawater. Over time, these skeletons form the reef. The outer layer of the reef is alive. Below the layer of living coral are the skeletons of previous generations.

Coral reefs grow in tropical oceans all over the world. Most polyps are only the size of a pencil eraser, yet huge colonies of these animals form some of the largest natural structures on earth. The largest reef in the world, the Great Barrier Reef off Australia, is more than 1200 miles long. The largest reef in the Caribbean is the barrier reef off Belize in Central America. Coral reefs are also found in Hawaii, southeast Asia, the Indian Ocean, the coast of Africa and the Red Sea.

To survive, corals need warm water and sunlight. Sunlight is important because each coral animal has tiny plants living within its body. These plants make sugars that help feed the corals. The tiny plants also help the corals build their skeletons. If the waters around a reef become cloudy with dirt and pollution, the tiny plants cannot survive and the corals die.

Corals come in many shapes and sizes. At the South Caicos research site, SFS students identify and count coral colonies. Brain coral, star coral, elkhorn coral and mushroom coral are just some of the dozens of species the students identify while diving on the reef.

Materials

coral reef worksheet

globe or world map

reference books

Activity

As a class, discuss corals and their requirements for survival—tropical waters, salt water, sunlight. Individually or in teams, have students complete the Coral Reefs Worksheet.

Extend the Activity

Coral polyps have hard external skeletons that protect their soft jelly-like bodies. Other animals have internal skeletons to support their muscles and give their bodies shape. Ask students to brainstorm a list of reef animals. Discuss the following: Which animals have internal skeletons? Which have external skeletons? What are the skeletons made of? Do students know that shark skeletons are made of cartilage, not bone? That birds have tiny holes in their bones to reduce the weight? That lobsters shed their skeletons and make new ones as they grow? That the bones in a dolphin's flipper look like the bones in our hands?

Coral collecting can damage reefs. Most zoo and aquarium displays are made with artificial corals. These man-made corals are sculpted by artists or made from molds of selected pieces of coral. Have students look at photographs and drawings of corals. Or have them examine coral skeletons, if available. Distribute modeling clay and have students sculpt a colony of their favorite coral. Assemble the pieces to create a reef display. Draw a key that identifies each type of coral in this student-made reef.

Have students visit the web sites of one of these organizations:

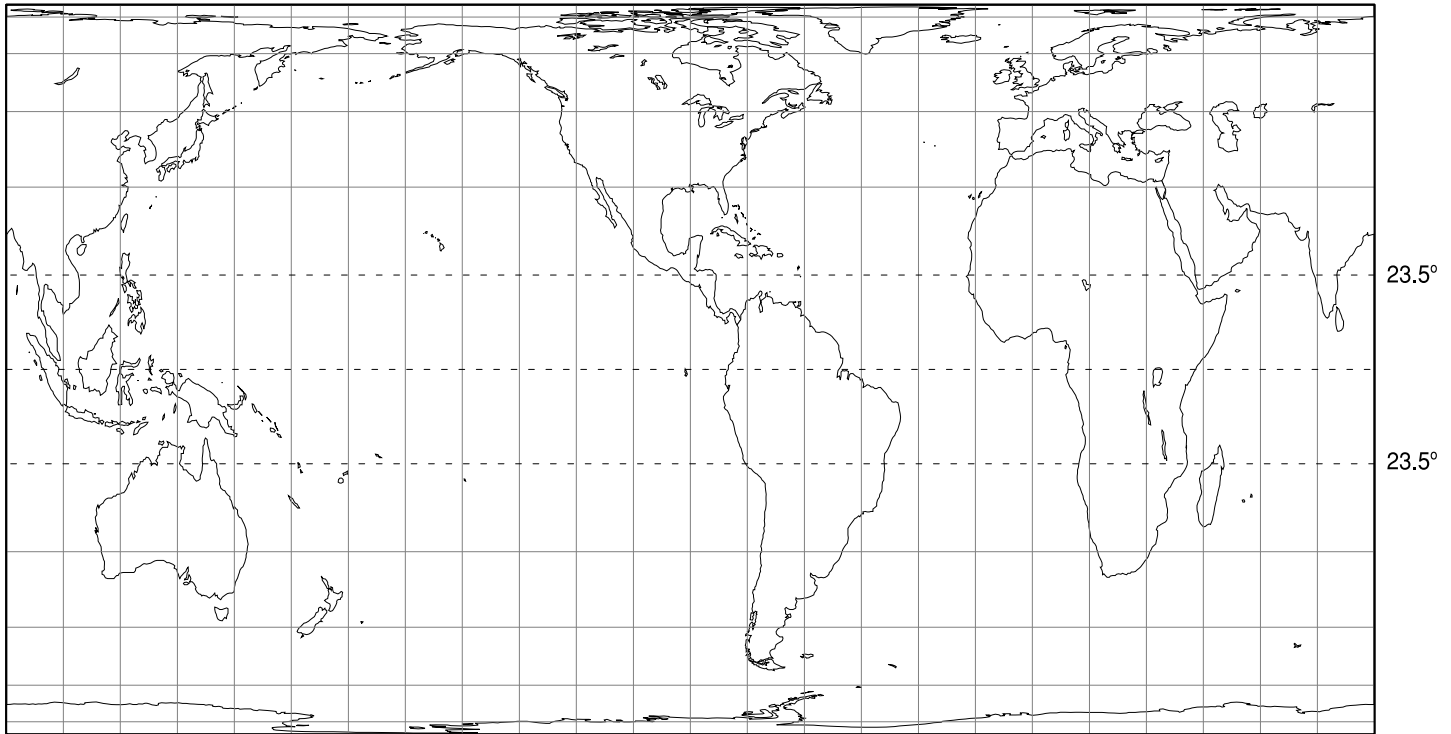
- ▶ Coral Forest is a non-profit organization dedicated to the protection of coral reefs throughout the world. <http://www.blacktop.com/coralforest>
- ▶ The Coral Reef Alliance (CORAL) is a non-profit membership group that works with scuba divers and others to keep reefs healthy. CORAL is a co-chair of the International Year of the Reefs Conservation and Public Awareness Committee. <http://www.coral.org>

Answers to Coral Reefs Worksheet (page 16)

4. Corals are located in the ocean, around islands and continents, between the Tropics of Cancer and Capricorn. They need warm, salty, sunlit waters to survive.
7. No, if it is not in the tropics; and/or no, if it is not near the ocean.
8. salt water, warm water, sunlight

Coral Reefs Worksheet

Name: _____



Directions: Complete the following steps:

1. Label the world's continents, oceans and seas.
2. The equator is an imaginary line that circles the middle of the earth. Color it red.
3. The Tropics of Cancer and Capricorn are at 23.5° north and 23.5° south. These imaginary lines mark the northern and southern boundaries of the tropics. Color them blue.
4. Where would you expect most of the world's coral reefs to be found? Why?
5. The Great Barrier Reef is located off the northeast coast of Australia. It is the largest coral reef on earth, more than 1200 miles long. That's the distance between Dallas, Texas and Baltimore, Maryland! Mark the location of the Great Barrier Reef with a green X .
6. Locate the West Indies Islands. They separate the Atlantic Ocean from the Caribbean Sea. Color them purple. South Caicos Island is in the West Indies.
7. Draw a yellow star on your community. Could coral reefs live here? Why or why not?
8. Name three things corals need for survival:
1. _____ 2. _____ 3. _____

Challenge Question:

The largest reef in the Caribbean is the barrier reef off of Belize. Mark its location with an orange star.