

Source: Corals and Coral Reefs 4 - 8 Teacher's Guide. A Sea World Education Department Publication. Used with permission.

46. SURVIVAL FACTORS

Objective: Students will be able to analyze the impact of humans on the coral reef ecosystem as a result of human social, political, and economic activities.

Materials: copies of Survival Factor cards, copies of Identity cards enlarged 200%, small construction paper squares (five per student), yarn

Action:

1. Copy and cut Survival Factor cards and Identity cards. Attach yarn to Identity cards so students can wear them around their necks.
2. Have students stand in a circle. Pass out Identity cards. Each student now represents a life-form found in a coral reef ecosystem.
3. Give each student five paper squares. Explain that each square represents a population of organisms. [A population is made up of all the organisms found in a specific area.]
4. Tell students that you're going to read some statements that describe events that take place everyday that might or might not affect the reef and its inhabitants. Explain that if they think the statement you read would make it difficult or impossible for their organism to survive, they must put one of their paper squares on the floor in front of them. When students have one square left, they must stand on one foot. When they lose their balance and fall, they must sit down—this species is no longer found on the reef. They also must sit down when they run out of squares.
5. Continue to play until everyone is sitting.
6. Discuss the game with students. Tell them that their species became endangered when they became few in number, as represented by the one paper square. Explain that endangered refers to a population that is in danger of extinction, or disappearing completely. Was it easy for the students to stay in the game when they reached the point of standing on one foot? When a species becomes endangered, they're on shaky survival ground.

Deeper Depths:

Have students compare and contrast other habitats (old growth forest, wetlands, desert) and their survival factors. What survival factors are the same for each habitat? Different? How can each one of us make a difference in protecting the balance in each type of habitat?

SURVIVAL FACTORS

Recreational boaters drop anchors on you.	A tourist takes you from the reef to carry home as a souvenir.
An oil tanker spills thousands of gallons of oil into the water over you.	You swallow some abandoned fishing line.
Agricultural fertilizers have washed into the sea, so now there is a lot more algae in the water around you.	To make money from the tropical fish trade, collectors use dynamite and cyanide, a poison, to stun and capture you and your relatives.
You become tangled in a drift net.	Large pieces of your skeleton are broken off and sold for use in home aquariums.
Ocean pollution from pesticides, heavy metals, and garbage is surrounding you.	The water temperature surrounding the reef mysteriously rises, causing you to expel your zooxanthellae.
A snorkler sits on you and pokes around to get a better look at marine life.	A tropical forest is cleared, washing topsoil down river and into the ocean in the vicinity of your home, a large reef ecosystem.
A scuba diver takes more than the legal limit of your species.	Coastal development destroys the beach you breed on.
Human population growth increases.	Humans think you're delicious, and actively hunt you.

IDENTITY CARDS

pillar coral	zebra moray eel	monk seal
hawksbill sea turtle	queen conch (snail)	painted triggerfish
green sea turtle	four-eyed butterflyfish	trumpet triton (snail)
lined sea horse	king crab	brain coral
barracuda	striped shrimp	elkhorn coral
star-eyed hermit crab	sharpnose pufferfish	emperor angelfish
cowfish	sea urchin	sea anemone
anemone fish	blue-barred parrotfish	stony coral
little star coral	slipper lobster	sea star
branching coral	reef octopus	moorish idol (fish)

Correlation to National Standards from McREL (<http://www.mcrel.org>) :

Life Sciences

6. Understands relationships among organisms and their physical environment

Geography

8. Understands the characteristics of ecosystems on Earth's surface
14. Understands how human actions modify the physical environment