Good gReef!

Classroom Program for Grades 3-5

This interactive lesson leads students to discover natural and human impacts on life in the Gulf of Mexico. Active learning and the use of technology promote understanding the consequences of ecosystem changes brought about by humans and natural events.

Lesson: Learn the consequences of various human and natural events on a coral reef. Learn that inland water sources are connected to the world ocean and affect water quality there.

Conservation Message: All life on Earth exists as a part of an ecosystem. Human beings are an integral part of all ecosystems.

Curriculum Objectives:

Tennessee students will apply the following **Science Curriculum Performance Indicators**:

- The students will determine methods for conserving natural resources.
- The students will infer possible reasons why a species became endangered or extinct.
- The students use information about the impact of human actions or natural disasters on the environment to support a simple hypothesis.

Georgia students will apply the following **Science Performance Standards**:

- Students will explain what will happen to an organism if the habitat is changed.
- Students will recognize the effects of pollution and humans on the environment.
- Students will predict how changes in the environment would affect a community.

Alabama students will apply the following **Science Course of Study Content Standards**:

- Describe ways to sustain natural resources.
- Describe habitat conditions that support plant life.
- Describe the relationship of populations within a habitat to various communities and ecosystems.

Additionally, all students will apply the following **National Science Education Content Standards**:

- Develop an understanding of organisms and environments.
- Develop an understanding of diversity and adaptations of organisms.
- Develop an understanding of characteristics of organisms.
- Develop an understanding of structure and function in living systems.
- Develop an understanding of populations and ecosystems.

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Activity Sheet

Use the hints and word bank below to fill in the following crisscross puzzle.
HINT: If there is more than one word in the answer do not leave spaces between them.

WORD BANK

staghorn
blue crab
Atlantic bluefin tuna
hurricane
gulf menhaden
white shrimp
ocean acidification
sustainable
red tide
plastic
dead zone
bay scallop

Across

3. A commonly used and discarded material made of petroleum.

4. This prawn has been fished heavily in the past and now demand for this shrimp has inspired an aquaculture facility in Panacea, Florida. Like other living things, it cannot survive in the Dead Zone.

7. This predatory fish can grow to nearly 1,000 pounds. It has been overfished because of its popularity in sushi.

8. This crustacean's scientific name means "delicious, beautiful swimmer". It is heavily fished in the United States and is harmed by crude oil.

10. This is a place in the ocean where there is not enough oxygen to sustain life.

11.This is something that can go on and on because when part of it is used, it is replaced or given time to grow back.

12. This branching coral is fast-growing and is important to reef growth and fish habitat. It is damaged by water temperatures that are too warm (bleaching).

Down

1. This happens when excess carbon dioxide is absorbed out of the air by ocean water. This makes the water more acidic, that is, more like vinegar or lemon juice.

2. This small filter-feeding fish is common in the Gulf of Mexico and is the second-most caught fish (by weight) in the United States. It is harmed by ocean acidification.

5. This storm has sustained winds of at least 74 miles per hour.

6. This edible species of saltwater clam propels itself by using jets of water from its mantle. It can be harmed by red tides.

9. Scientists prefer to call this an algal bloom since it really is a huge number of algae growing all at once. Sometimes they produce poison or use up all the oxygen in the water.

Answers can be found on the Tennessee Aquarium Education Department's website
http://www.tnaqua.org/Education