



CORAL REEF ACTIVITY PACKET

ANSWER KEY FOR TEACHERS



THE REEF PROJECT
Conservation Starts with Education

CORAL REEF WEBQUEST ANSWER KEY

1 What are coral and what is a coral reef?

Possible Answer

Corals are animals related to jellyfish and anemones. Solitary and colonial corals catch plankton and suspended food particles with arm-like tentacles, which feed a centrally located mouth. Coral reefs are formed by huge colonies of corals

that secrete hard calcareous (aragonite) exoskeletons that give them structural rigidity. These colonial "hard corals" may form elaborate finger-shaped, branching, or mound-shaped structures, and can create masses of limestone that stretch for tens or even hundreds of miles.

Notes

Information Links

1. Coral Reef Facts (USGS Pacific Coral Reef Studies, Facts), <http://coralreefs.wr.usgs.gov/facts.html>
2. NOAA CoRIS - What are Coral Reefs (NOAA CoRIS - What are Coral Reefs), http://www.coris.noaa.gov/about/what_are/
3. Coral Reef Protection: What Are Coral Reefs? (Coral Reef Protection: What Are Coral Reefs?), http://water.epa.gov/type/oceb/habitat/coral_index.cfm

2 What do coral reefs need to survive?

Possible Answers

Sunlight: Corals need to grow in shallow water where sunlight can reach them. Corals depend on the zooxanthellae (algae) that grow inside of them for oxygen and other things, and these algae need sunlight to survive.

Clear water: Corals need clear water that lets sunlight through; they don't thrive well when the water is opaque. Warm water temperature: Reef-building corals require warm water conditions to survive. various temperature fluctuations.

Clean water: Corals are sensitive to pollution and sediments. Sediment can create cloudy water and be deposited on corals, blocking out the sun and harming the polyps. Wastewater discharged into the ocean near the reef can contain too many nutrients that cause seaweeds to overgrow the reef.

Saltwater: Corals need saltwater to survive and require a certain balance in the ratio of salt to water. This is why corals don't live in areas where rivers drain fresh water into the ocean.

Notes

Information Links

1. What Do Coral Reefs Need to Survive? (Coral Reef Alliance), <http://coral.org/coral-reefs-101/coral-reef-ecology/what-do-coral-reefs-need-to-survive/>
2. Coral Reefs A Chance of Success (National Parks Service), By: United States. National Park Service. <http://www.nps.gov/npsa/learn/education/classrooms/coral-reefs-a-chance-of-success.htm>

3 What percentage of marine life live in coral reefs?

Possible Answer

Coral reefs are home to 25% of all marine life on the planet. In fact the variety of life supported by coral reefs rivals that of the tropical forests of the Amazon or

New Guinea. But without urgent action to address climate change, pollution, overfishing and other threats these beautiful and life-sustaining organisms could disappear.

Notes

Information Links

1. Coral reefs (WWF -), http://wwf.panda.org/about_our_earth/blue_planet/coasts/coral_reefs/
2. We need your help! (NOAA), http://www.noaa.gov/features/economic_0708/coralreefs.html
3. Coral Reef Biodiversity (Coral Reef Alliance), <http://coral.org/coral-reefs-101/coral-reef-ecology/coral-reef-biodiversity/>

4 What is ocean acidification?

Possible Answer

When carbon dioxide (CO₂) is absorbed by seawater, chemical reactions occur that reduce seawater pH, carbonate ion concentration, and saturation states of

biologically important calcium carbonate minerals. These chemical reactions are termed "ocean acidification" or "OA" for short.

Notes

Information Links

1. Stories (Stories), <http://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F>
2. Ocean Acidification (Woods Hole Oceanographic Institution), <http://www.whoi.edu/main/topic/ocean-acidification>
3. Ocean Acidification -- National Geographic (National Geographic), <http://ocean.nationalgeographic.com/ocean/critical-issues-ocean-acidification/>

CORAL REEF WEBQUEST ANSWER KEY

5

What are 5 easy steps to help save coral reefs?

Possible Answers

Conserve water: The less water you use, the less runoff and wastewater will pollute our oceans.

Help reduce pollution: Walk, bike or ride the bus. Fossil fuel emissions from cars and industry raise lead to ocean warming which causes mass-bleaching of corals and can lead to widespread destruction of reefs.

Use only ecological or organic fertilizers: Although you may live thousands of miles from a coral reef ecosystem, these products flow into the water system, pollute the ocean, and can harm coral reefs and marine life.

Dispose of your trash properly: Don't leave unwanted fishing lines or nets in the water or on the beach. Any kind of litter pollutes the water and can harm the reef and the fish.

Support reef-friendly businesses: Ask the fishing, boating, hotel, aquarium, dive or snorkeling operators how they protect the reef. Be sure they care for the living reef ecosystem and ask if the organization responsible is part of a coral reef ecosystem management effort.

Plant a tree: Trees reduce runoff into the oceans. You will also contribute to reversing the warming of our planet and the rising temperatures of our oceans.

Practice safe and responsible diving and snorkeling: Do not touch the reef or anchor your boat on the reef. Contact with the coral will damage the delicate coral animals, and anchoring on the reef can kill it, so look for sandy bottom or use moorings if available.

Volunteer for a coral reef cleanup: You don't live near a coral reef? Then do what many people do with their vacation: visit a coral reef. Spend an afternoon enjoying the beauty of one of the most diverse ecosystems on the Earth.

Contact your government representatives: Demand they take action to protect coral reefs, stop sewage pollution of our oceans, expand marine protected areas and take steps to reverse global warming.

Spread the word: Remember your own excitement at learning how important the planet's coral reefs are to us and the intricate global ecosystem.

Notes

Information Links

1. Ways to Help Coral Reefs | The Nature Conservancy (Ways to Help Coral Reefs | The Nature Conservancy), <http://www.nature.org/ourinitiatives/urgentissues/coralreefs/ways-to-help-coral-reefs/index.htm>
2. NOAA's 25 Things You Can Do to Save Coral Reefs (NOAA's 25 Things You Can Do to Save Coral Reefs), <http://www.publicaffairs.noaa.gov/25list.html>
3. 10 Things You Can Do to Save the Ocean -- National Geographic (National Geographic), <http://ocean.nationalgeographic.com/ocean/take-action/10-things-you-can-do-to-save-the-ocean/>

CORAL REEF QUIZ

Test Your Coral Reef Knowledge

Multiple choice questions about coral reefs and coral reef conservation.

1. Corals are...

- a. rocks
- b. living animals**
- c. fish
- d. none of the above

2. Coral reefs need these to survive:

- a. sunlight, clean water and saltwater**
- b. sediment, acidification and pollution
- c. trash, algae and no light
- d. all of the above

3. Where is the world's largest coral reef?

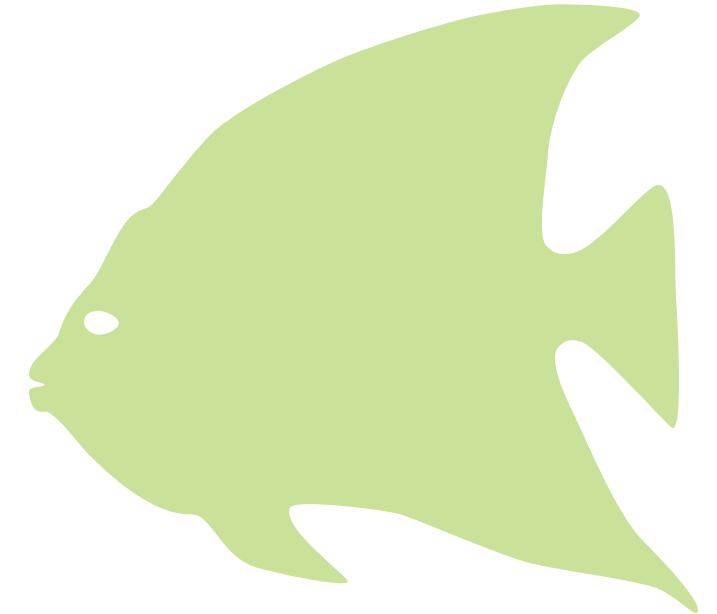
- a. Philippines
- b. Belize
- c. Australia**
- d. America

4. If you go snorkeling or diving near coral reefs, its important that you...

- a. harvest coral to take home as a souvenir
- b. kick the coral to see if it moves
- c. never touch the coral — take only pictures and leave only bubbles**
- d. eat the coral

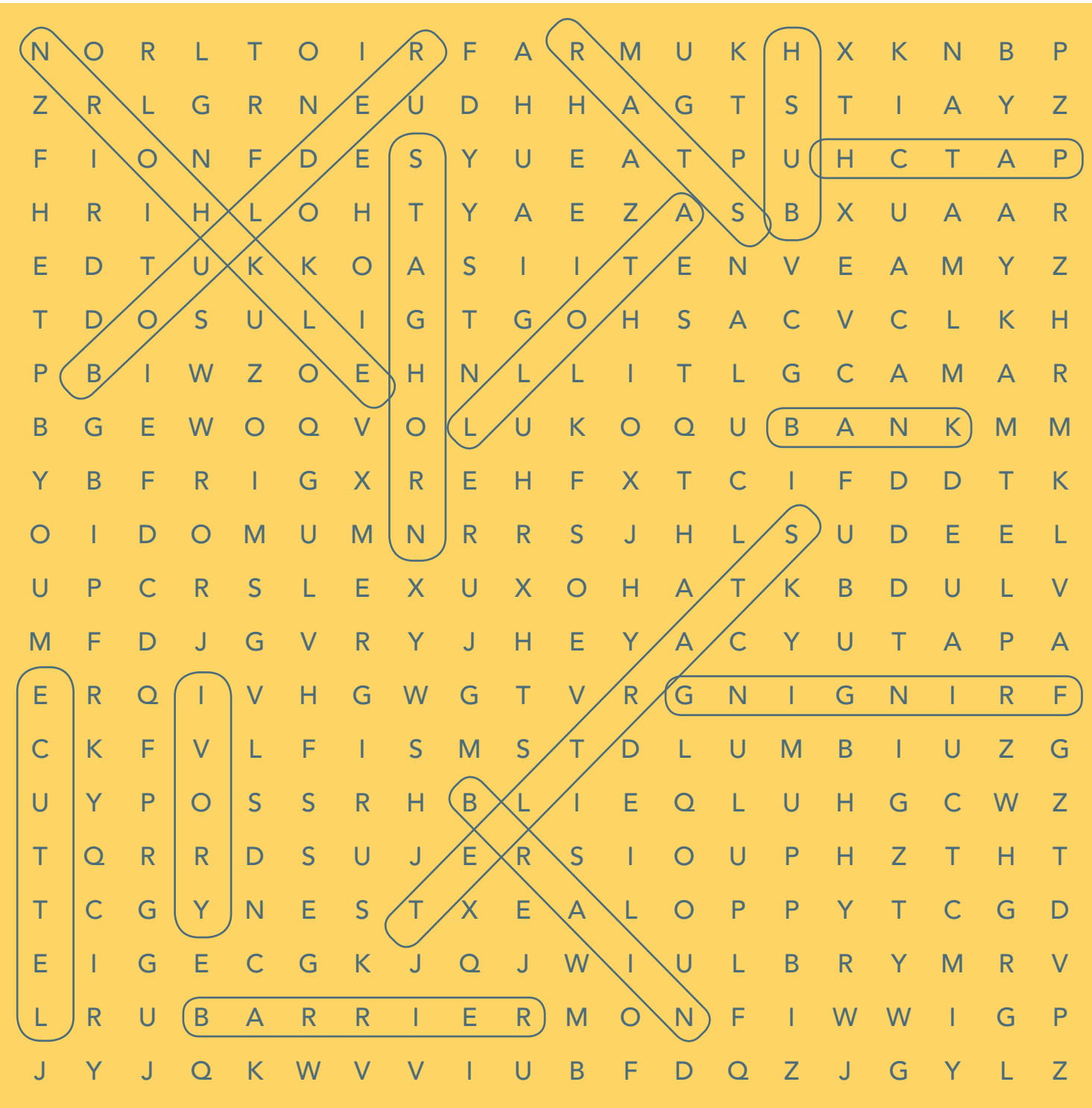
5. What can you do to help save coral reefs?

- a. conserve water
- b. reduce pollution
- c. dispose of your trash properly
- d. all of the above**



WORD SEARCH KEY

Types of Coral and Coral Reefs



ATOLL
BANK
BARRIER
BOULDER

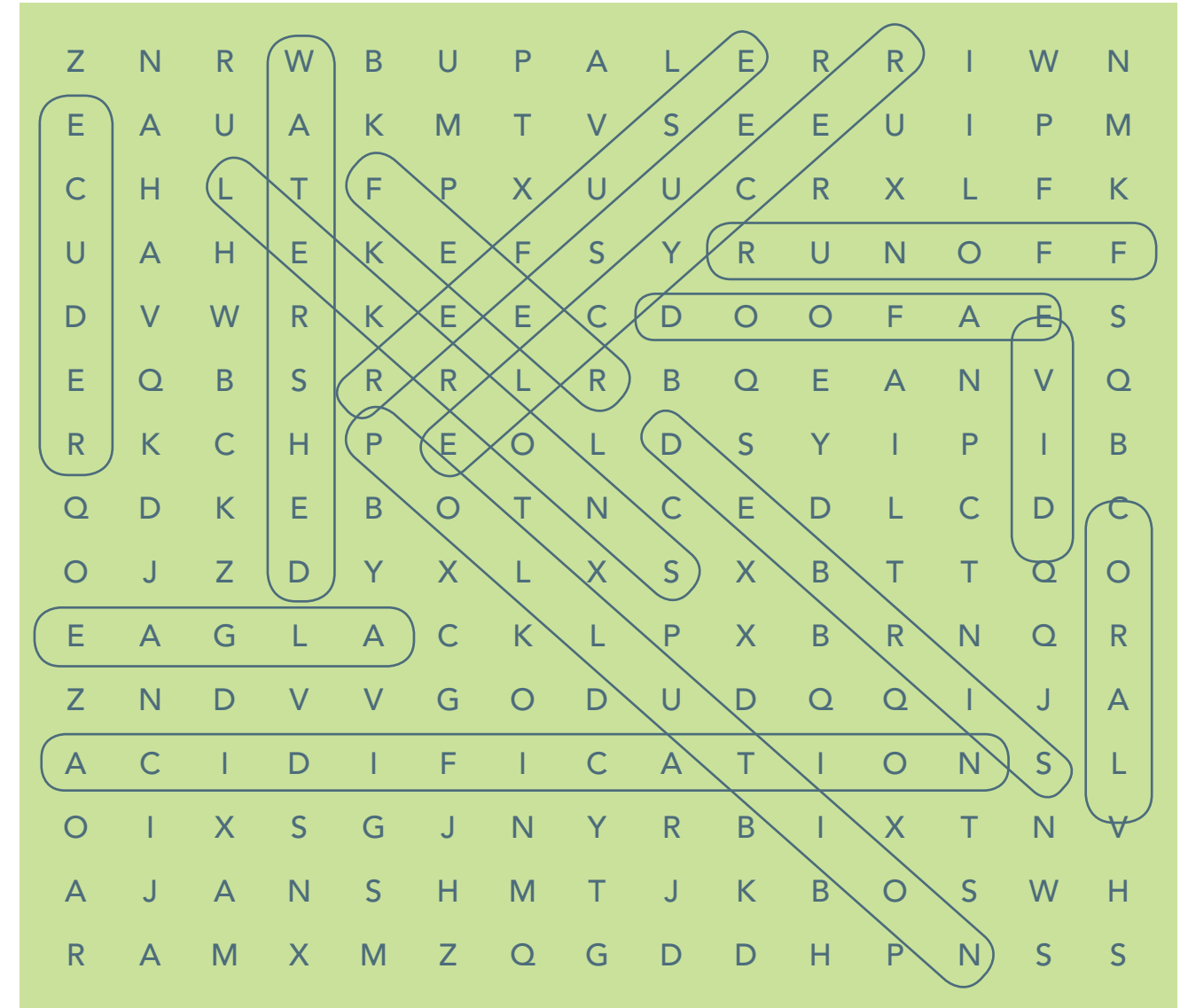
BRAIN
BUSH
CAY
ELKHORN

FRINGING
HILL
IVORY
LETTUCE

PATCH
STAGHORN
STAR
STARLET

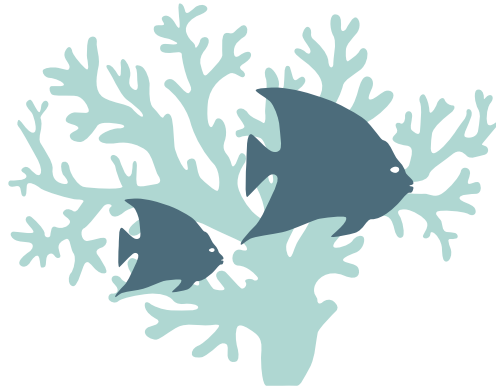
WORD SEARCH KEY

Coral Reef Conservation



ACIDIFICATION
ALGAE
CORAL
DEBRIS
DIVE
POLLUTION
RECYCLE

REDUCE
REEF
REFUSE
RUNOFF
SEAFOOD
SNORKEL
WATERSHED



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<http://reefproject.org/project/activity-packet/>