

Coral Reefs - Cities Under the Sea

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Coral reefs are among the most **diverse** ecosystems on our planet, often called the rainforests of the sea. Although they cover less than one percent of the ocean floor, they **provide** a home for roughly twenty-five percent of all known marine species. These stunning underwater **structures** are found in warm, shallow **tropical** waters near the equator, where bright sunlight can easily reach the ocean bottom and support life.

A coral reef is built by millions of tiny **creatures** called coral polyps over hundreds and sometimes thousands of years. Each polyp produces a hard outer skeleton made of calcium carbonate, a natural **chemical** compound found in seawater all around the world. As old polyps die, new ones grow on top of their skeletons and add new layers. This slow **process** creates the massive and colorful reef formations that divers explore and scientists study today.

Coral polyps have a remarkable partnership with tiny plant-like organisms called algae that live inside their soft bodies. The algae **produce** food through sunlight and share this energy with the coral host. In return, the coral gives the algae a protected place to live and grow. This relationship is essential because coral **depend** on the algae for up to ninety percent of their energy needs and also for their beautiful rainbow colors.

Unfortunately, coral reefs face serious **threats** from human activities and rapidly changing ocean conditions around the world. Rising ocean **temperature** caused by climate change forces the algae to leave, turning coral white in a dangerous process called bleaching. **Pollution** from factories, cities, and farms also poisons reef waters and blocks the sunlight that coral desperately needs to survive, grow, and stay healthy.

Scientists and **conservation** groups are now working hard to protect and restore damaged coral reefs before it is too late for these fragile ecosystems. Some researchers carefully grow young coral in special underwater nurseries and then transplant healthy pieces onto damaged reef areas. Governments have also created marine parks where fishing and boating are strictly limited to let reefs **recover**. Everyone can help by reducing pollution, saving energy, and learning more about these precious underwater cities that support so much ocean life.

A. Vocabulary

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|------------------------|---|
| 1. diverse _____ | a. living things, especially animals |
| 2. provide _____ | b. to make or create something |
| 3. structures _____ | c. a substance made through chemistry |
| 4. tropical _____ | d. how hot or cold something is |
| 5. creatures _____ | e. a series of steps or actions |
| 6. chemical _____ | f. buildings or things that are built or arranged |
| 7. process _____ | g. having many different kinds or types |
| 8. produce _____ | h. to give or supply something needed |
| 9. temperature _____ | i. the protection of nature and wildlife |
| 10. conservation _____ | j. relating to hot regions near the equator |

B. True or False

- | | | |
|--|--|--|
| 1. Coral reefs cover more than ten percent of the ocean floor. _____ | 2. Coral reefs are found in warm, shallow waters. _____ | 3. Coral polyps produce a hard outer skeleton. _____ |
| 4. Algae live inside coral polyps. _____ | 5. Coral depends on algae for energy. _____ | 6. Rising ocean temperature helps coral grow. _____ |
| 7. Bleaching turns coral white. _____ | 8. Pollution can block sunlight from reaching coral. _____ | 9. Some scientists grow coral in underwater nurseries. _____ |

C. Fill in the Blanks

Word Bank: diverse, provide, structures, tropical, chemical, temperature, conservation

1. Coral reefs are among the most _____ ecosystems on Earth.
2. Reefs _____ a home for twenty-five percent of all marine species.
3. These stunning underwater _____ are found in warm waters.
4. Coral polyps produce a skeleton made of a natural _____.
5. Rising ocean _____ causes coral bleaching.

D. Comprehension Questions

1. What percentage of marine species depend on coral reefs?
2. How do coral polyps build a reef over time?
3. What is the relationship between coral and algae?
4. What causes coral bleaching?
5. How are scientists working to protect coral reefs?

E. Discussion Questions

1. Why do you think coral reefs are called the rainforests of the sea?
2. What would happen to ocean life if all coral reefs disappeared?
3. What can ordinary people do to help save coral reefs?

Answer Key

A. Vocabulary: 1-f, 2-g, 3-c, 4-h, 5-i, 6-a, 7-j, 8-d, 9-e, 10-b

B. True/False: 1-F, 2-T, 3-T, 4-T, 5-T, 6-F, 7-T, 8-T, 9-T

C. Fill Blanks: 1-diverse, 2-provide, 3-structures, 4-chemical, 5-temperature

D. Comprehension: 1. About twenty-five percent; 2. Each polyp produces a hard skeleton; new ones grow on top of old ones over hundreds of years; 3. Algae live inside coral and produce food through sunlight, while coral gives algae a safe home; 4. Rising ocean temperature forces algae to leave the coral; 5. Growing coral in underwater nurseries, transplanting healthy pieces, and creating marine parks