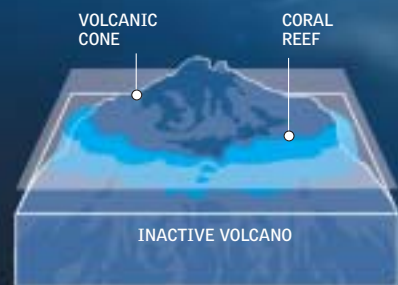


Rings of Coral

In the middle of the ocean, in the tropics, there are round, ring-shaped islands called atolls. They are formed from coral reefs that grew along the sides of ancient volcanoes that are now submerged. As the coral grows, it forms a barrier of reefs that surround the island like a fort. How does the process work? Gradually, volcanic islands sink, and the reefs around them form a barrier. Finally, the volcano is completely submerged; no longer visible, it is replaced by an atoll. ●

FORMATION OF AN ATOLL

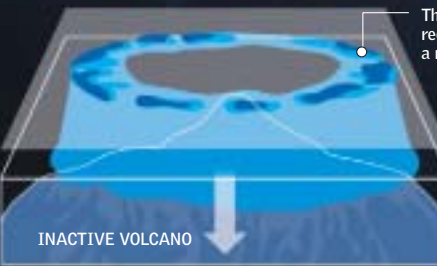
1. THE BEGINNING OF AN ATOLL.
The undersea flanks of an extinct volcano are colonized by corals, which continue to grow.



2. THE CORALS GAIN GROUND.
As the surrounding reef settles and continues to expand, it becomes a barrier reef that surrounds the summit of the ancient volcano, now inactive.



3. THE ATOLL SOLIDIFIES.
Eventually the island will be completely covered and will sink below the water, leaving a ring of growing coral with a shallow lagoon in the middle.

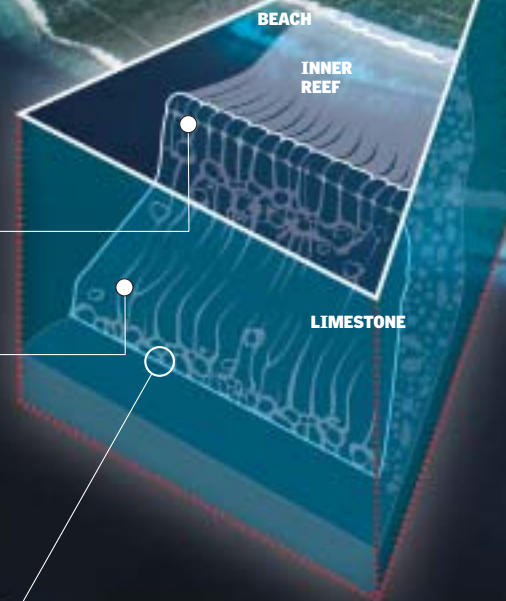


The coral reef forms a ring.

REEF LEVELS

CREST
Barrier that protects the shore from waves. Deep grooves and tunnels let seawater inside the reef.

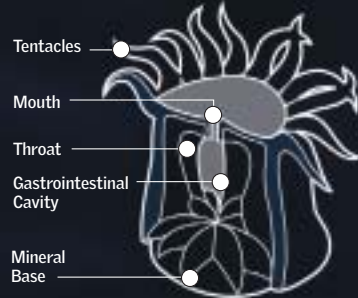
FACE
Branching corals grow here, though colonies can break loose because of the steep slope.



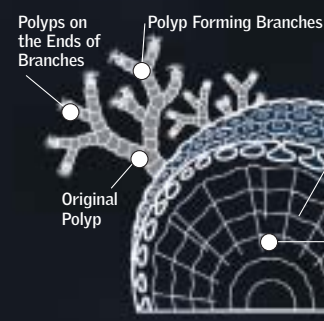
WHAT ARE CORALS?

Corals are formed from the exoskeletons of a group of Cnidarian species. These marine invertebrates have a sexual phase, called a medusa, and an asexual phase, called a polyp. The polyps secrete an outer skeleton composed of calcium carbonate, and they live in symbiosis with one-celled algae.

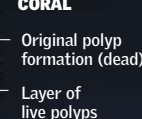
HARD CORAL POLYP



BRANCHING CORAL



COMPACT CORAL



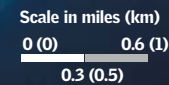
ATOLLS AND VOLCANIC ISLANDS AROUND THE WORLD

Coral reefs are found in the world's oceans, usually between the Tropic of Cancer and the Tropic of Capricorn.



OPTIMAL CONDITIONS

Coral is mainly found in the photic zone (less than 165 feet [50 m] deep), where sunlight reaches the bottom and provides sufficient energy. For reefs to grow, the water temperature should be between **68° and 82° F** (20-28° C).



Country	Republic of Kiribati
Ocean	North Pacific
Archipelago	Gilbert Islands
Surface area	10.8 square miles (28 sq km)
Altitude	6.9 ft (2.1 m)

LEGEND
● Town ⊛ Capital

HAWAIIAN ARCHIPELAGO



FORMATION OF A VOLCANIC ISLAND

A Volcanoes form when magma rises from deep within the Earth. Thousands of volcanoes form on the seafloor, and many emerge from the sea and form the base of islands.

B When a plate of the crust moves over a hot spot, a volcano begins to erupt and an island is born.



Molokai	1,476 ft (450 m)	Kahoolawe	3,369 ft (1,027 m)	Lanai	3,369 ft (1,027 m)	Maui	10,023 ft (3,055 m)	Hawaii	13,799 ft (4,206 m)
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