



Amazing polyps

Background reading for teachers

This reading gives you the background for each slide, with sources you can check.

Coral polyps

Corals belong to the same group of animals as jellyfish and sea anemones. A polyp has a ring of tentacles armed with stinging cells, a central mouth and a simple stomach. Reef-building (hard) corals secrete a limestone (calcium carbonate) cup, and thousands of polyps together make a colony. Hard corals have tentacles in multiples of six; soft corals have eight feathery tentacles and no stony skeleton.¹

The algae partnership

The algae living inside coral tissue, zooxanthellae, are single-celled algae, not plants. They photosynthesise and pass most of the sugars they make to the coral, which is why reef-building corals are found in clear, sunlit water.¹

Growth and reef types

Growth rates vary hugely by species. Fast branching corals can add ten centimetres or more a year, while massive boulder corals often grow about a centimetre a year, so a large boulder may be centuries old. Reefs are described as fringing (next to the shore), barrier (separated from the shore by a lagoon) or atolls (rings around a lagoon). The Philippine national reef assessment focused on fringing reefs because they are the most common type and the most exposed to people.³

Bleaching

When water stays too warm for too long, the partnership breaks down and corals expel their algae, turning white. Bleached corals can recover if temperatures fall, but prolonged heat can kill them. The fourth global bleaching event, from early 2023 to mid-2025, exposed 84% of the world's reef area to bleaching-level heat stress.² Lesson 4 covers this in more depth.

Sources

1. NOAA National Marine Sanctuaries. Coral reef background for teachers. sanctuaries.noaa.gov/education/teachers/coral-reef/background.html
2. NOAA NESDIS (2026). World's fourth mass coral bleaching event likely ended in 2025. nesdis.noaa.gov/news/worlds-fourth-mass-coral-bleaching-event-likely-ended-2025
3. Licuanan, A.M. and others (2017). Initial findings of the nationwide assessment of Philippine coral reefs. *Philippine Journal of Science* 146(2): 177-185.

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