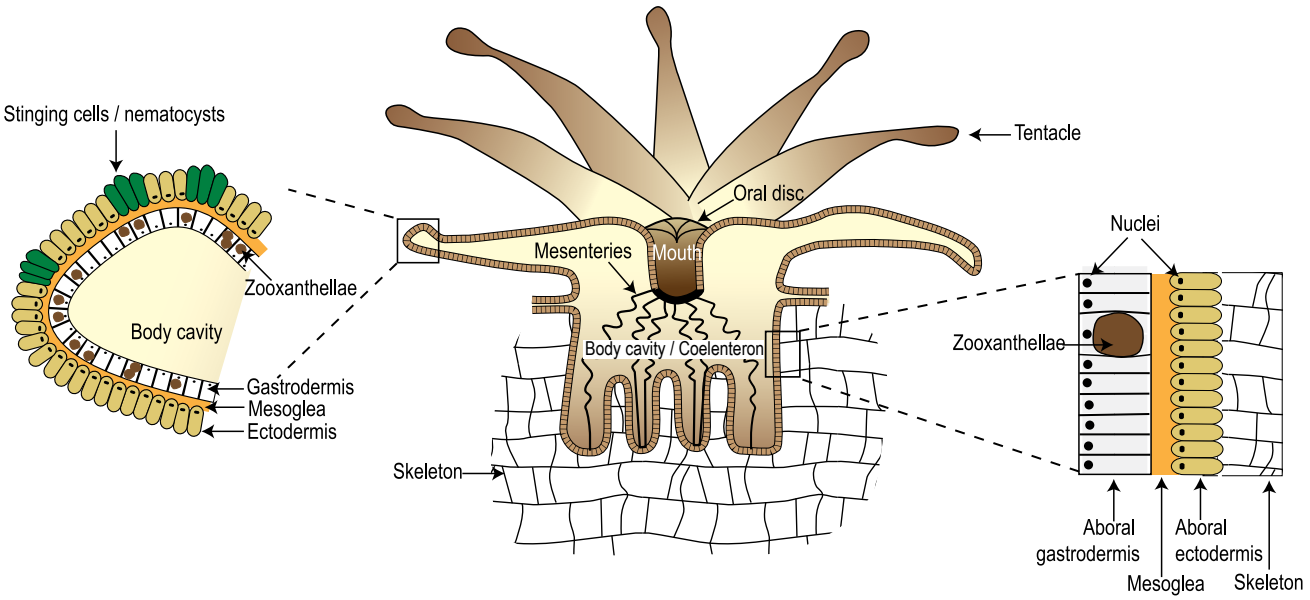
Coral Biology

Subject matter: identify the anatomy of a typical reef-forming hard coral including skeleton, corallite, coelenteron, coral polyp, tentacles, nematocyst, mouth and zooxanthellae.

Recommended reading: Coral Reefs and Climate Change - Reef-building corals (p.86-89), Coral growth (p.90-91)



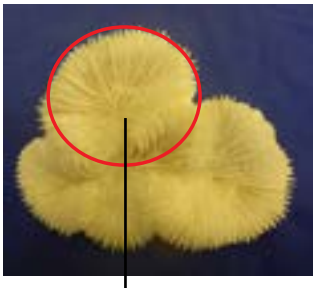
Anatomy of a coral polyp

In a coral polyp, zooxanthellae are located within the inner cells of the gastrodermis, which are separated from the outer cells of the ectodermis (epidermis) by the mesogloea. Microcrystals of aragonite are excreted where the ecotdermis is in contact with the skeleton (aboral ectodermis, or calicoblastic layer), increasing the size of the calcium carbonate skeleton.

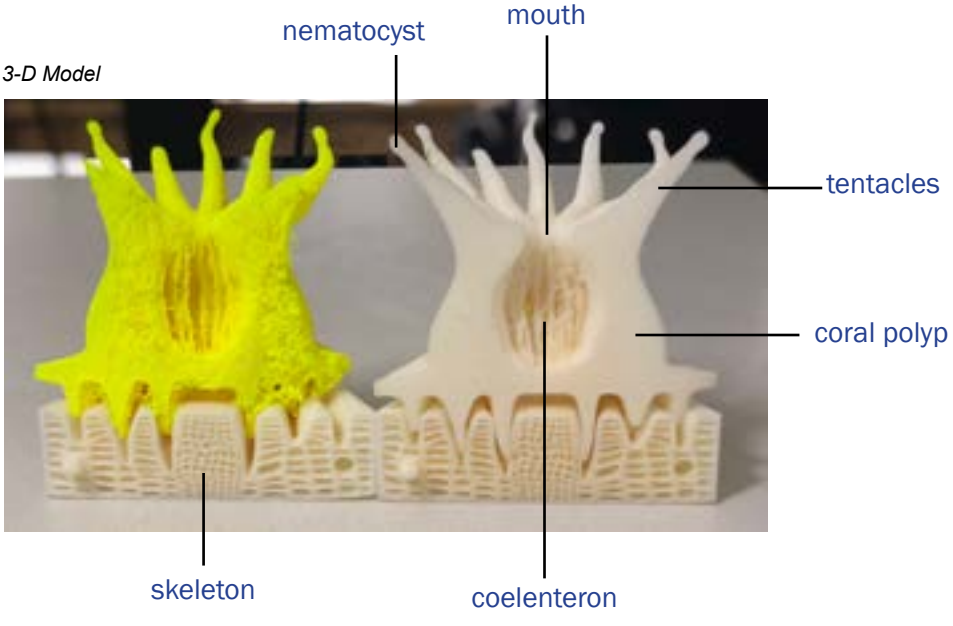
3-D models for classroom use

If you have access to a 3-D printer, print this fantastic resource provided by NOAA. This 3D generic coral polyp model shows a cross section of a single polyp, including its tentacles, gastrodermis, stomach cavity, and the complex skeletal structure underneath. If you use thermo-sensitive filament for the top polyp portion, the polyp can mimic coral bleaching when the 3-d model exposed to warm water.
See also the education video online.(https://coralreef.noaa.gov/education/polypmodel.html)

Coral skeleton



3-D Model



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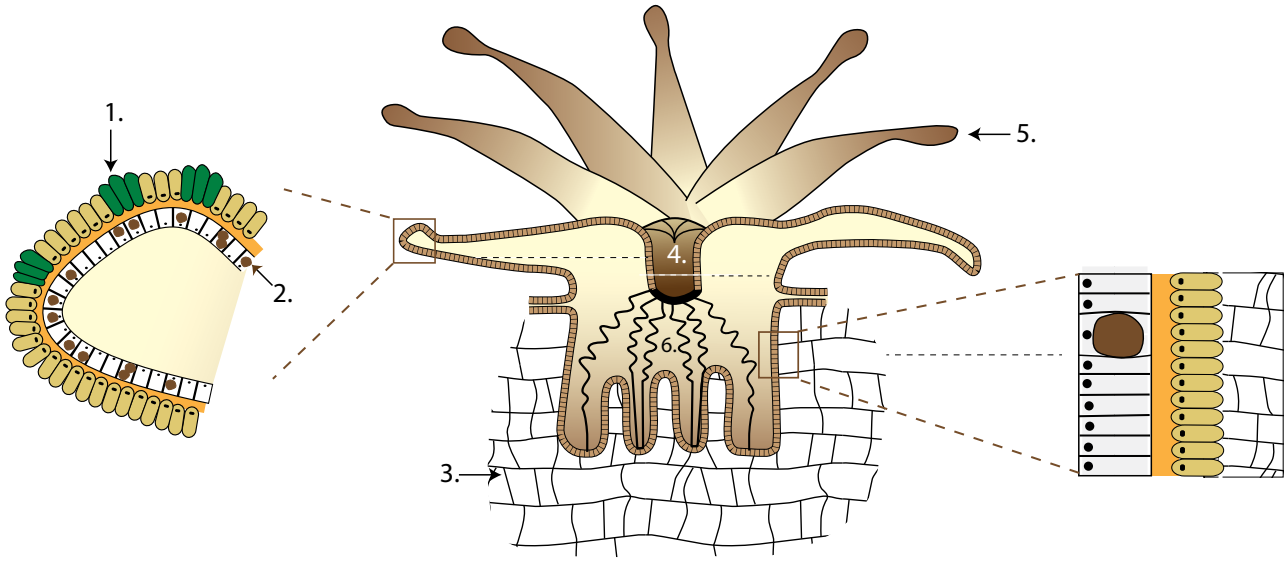
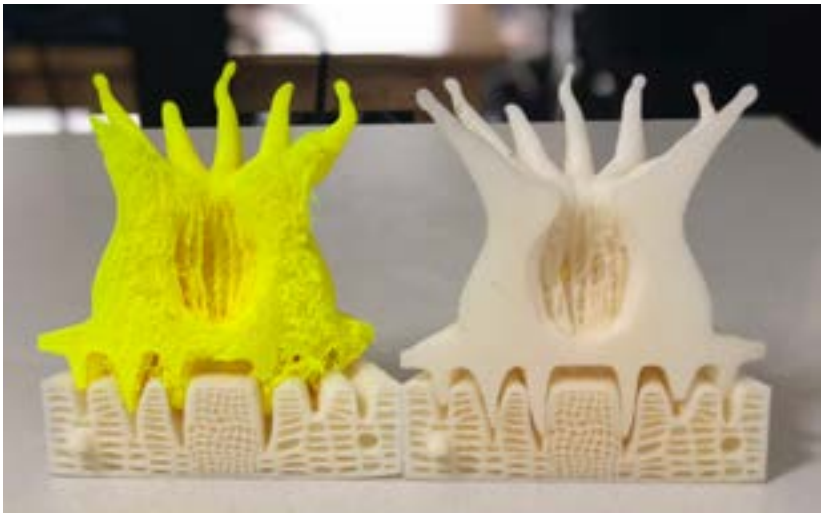
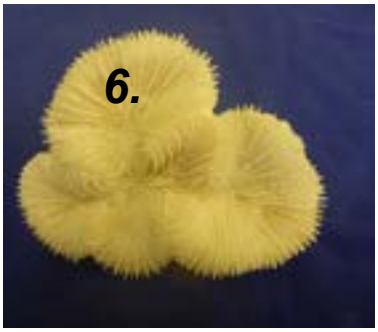
Label a coral polyp - Classroom

Include: skeleton, corallite, coelenteron, coral polyp, tentacles, nematocyst, mouth and zooxanthellae







Describe

skeleton .....

corallite .....

coelenteron .....

coral polyp.....

tentacles.....

nematocyst.....

mouth.....

zooxanthellae.....