



3.3 MATCH A MATE?

Survival **strategies** on reefs extend beyond the usual adaptations of **camouflage**, spines, stingers and other physical features. Relationships between animals as well as between animals and plants have evolved on the reef to include a variety of social and biological interactions in which one or all of the organisms involved receive some benefit from the relationship. The amount of benefit (and cost) may change over time as the relationships change in response to environmental changes. Scientists call these interactions symbiotic relationships.

The corals themselves act as hosts to a variety of **symbionts**, including the zooxanthellae. These "helper algae" live in the tissues of the coral polyp and use the sun's energy to produce sugars that are necessary for the survival of the coral. The relationship between the coral and the zooxanthellae is an example of mutualism. The corals receive organic compounds from the zooxanthelle (as a result of photosynthesis), while the zooxanthelle receive protection within the body tissue of the coral. Another mutualistic relationship involves the sea anemone and the clownfish. The anemone's tentacles contain cells with small stinging structures that harm most small creatures, including fish. However, the clownfish builds a defense by acquiring a mucus coat that protects against the stinging cells and makes a home within the anemone's tentacles providing a safe place for it and its companion. In turn, the clownfish brings its meals back to the anemone where, while it eats, bits of the prey may fall into the anemone's tentacles, providing an easy snack for the anemone. The anemone plays a part in another mutualistic relationship—this one with a specific type of hermit crab. The hermit crab first finds a snail shell to use as a mobile shelter, and then adds the anemone to the shell. The anemone serves two purposes—camouflage and stinging protection. In turn, the anemone has found a place to live and gather scraps of food (space can be limited on the reef).

Activity 3: Wanted ads

Grade 7 & 8: LO2 – AS 2 Comparing the features of different organisms to classify them into a group

- AS3 Interpreting key ideas and patterns from the information given



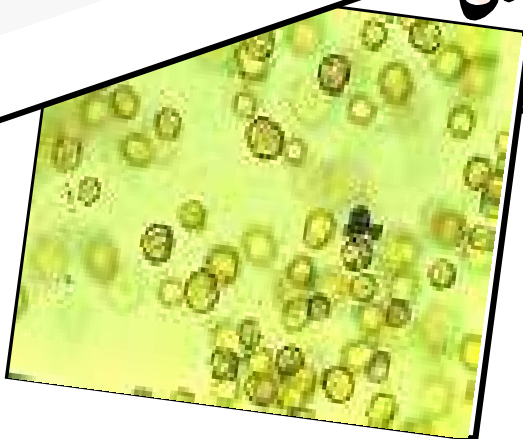
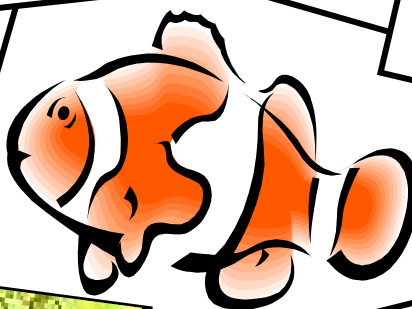
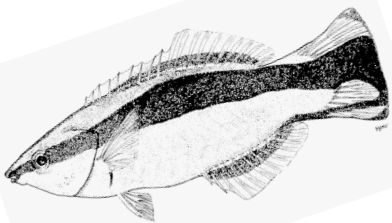
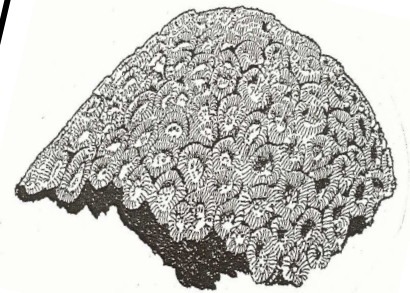
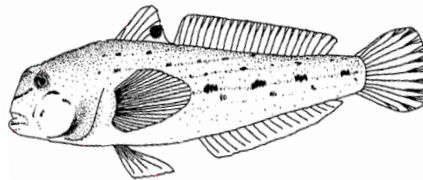
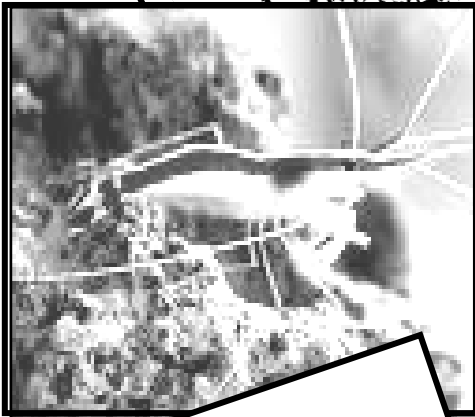
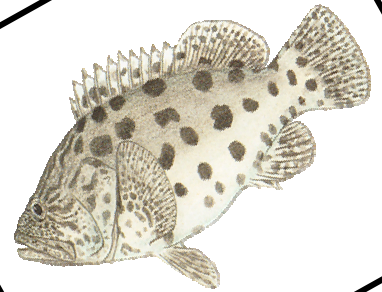
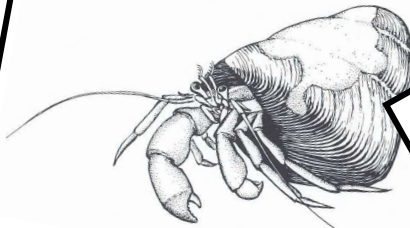
What you need:

- The wanted ads and the animals who placed them or who are looking for partners.



What to do:

- Discuss with learners the partnerships found in, on and around a reef. Ask them to explain the different types of relationships the inhabitants of the reef have with each other. Ask students to explain symbiosis, mutualism, commensalism, and parasitism. Ask students to think about how humans might disrupt these relationships. Write their descriptions on the board.
- Then give them the "wanted ads" sheet and get them to match up the pairs.



Wanted Ads

Will Work for Food

Diverse group of maids available to clean. If interested, stop by Wrasse Alley during daylight hours. Only trustworthy fish allowed.

Grocery Delivery Offered

Attractive fish couple looking for nice, safe home with security. Willing to do grocery shopping in exchange for rent.

House for Rent

Spacious and clean 100-tentacle home available. Built-in security system. Rent charges may be waived in exchange for other services.

Sodwana or Bust

Daily transportation around reef needed. I am deceptively beautiful and can offer bodyguard services in exchange for transportation.

Rental Property Available

Mobile Home in A 4 metre square area. Subject to high turnover in ownership. Future relocation assistance available through original owner.

The End is Near!

Photosynthetic partners needed immediately! Global warming threatens health of reef. Volunteers needed to aid in fight for survival. If available, report to any reef-building coral immediately.

Got Algae?

Have you recently lost your "helper" algae? Free-floating algae available and interested in "settling down" in the tropics. If you or a loved one are in need of assistance, call toll free 1-800-HELP.

Dental Hygienist Needed

Desperate for a good teeth and gill cleaning? I may look tough, but you can trust me not to eat you!

Bodyguard Available

Off-duty security officer seeks room for rent. Willing to offer security services in exchange for rent. Would prefer a bottom dwelling.

Roommate Wanted

Visually impaired reef resident, looking for roommate to share luxury apartment on Benthic Avenue. Room and board FREE in exchange for security services.