



2.1 MAKING CORAL

Making coral structures can help the learners understand the structure of coral polyps and the coral colonial life style. Learners will also realize that coral can **extract** the material that it needs to make its skeleton from the sea water in which it lives.

Activity 1: An egg carton coral

Grade 8 & 9: LO2 – AS 1 Recall procedures in making the coral and the process of building models

What you need:



- Egg cartons, paper, tape, scissors, coloured pencils, markers or paint.

What to do:



- Cut an A4 piece of paper into 3 strips, and roll each strip into a tube about the diameter of your finger. This represents the polyp.
- Tape the bottom of the tube so that it is closed off.
- Make several cuts at the top of the tube - about $\frac{3}{4}$ of the way to the bottom.
- Curl the cut pieces with a pair of scissors. These are the tentacles.
- Using the bottom half of an egg tray, punch a hole in each compartment, just wide enough for the tube. Insert the tube into the punched hole. (Tentacles should be on the top end of the egg carton.)
- Use coloured pens to make dots on the polyps to represent the zooxanthelle.

A large reef is built on the skeletons of thousands of coral polyps. Although each polyp is an individual animal, they are linked in a colony, and share food. The polyps can move in and out of their skeletons, and this can be demonstrated by pulling the polyp back into the egg carton. You can use the model to look at feeding and life as a colony.

In nature, **lime** is dissolved in sea water. This demonstration suggests how corals are able to produce Calcium Carbonate from sea water. We cannot demonstrate the exact process, but this experiment gives an idea of how corals can extract the material from clear sea water. Ocean acidification is defined as the reduction of the pH of the world's oceans. Scientists have discovered that the average level of acidity in the oceans has risen by about 25 percent in the last 150 years, since the advent of fossil fuel burning. Researchers have already predicted that a more acidic ocean will make it more difficult for corals to build their calcium carbonate skeletons, and the new finding suggests that the reef's broader structure may also suffer because a lower pH reduces the formation of the reef's cement binder.

Activity 2: Making a coral skeleton

Grade 8 & 9: LO2 – AS 1 Recall procedures in making the coral and the process of building models

What you need:



- A glass jar 2-3 cup full
- 1 cup of white vinegar
- 1 stick of white chalk broken into several pieces
- 1 cup of tap water
- 6 teaspoons of baking soda



What to do:

- Mix the vinegar with the chalk and let it stand for two hours. Pour off the clear liquid (and keep), and throw out the remaining chalk.
- In another container, mix the tap water and the baking soda; stir until most of the baking soda has dissolved. Pour off the clear liquid (and keep) and throw the remaining baking soda away.
- Combine the two clear liquids in the glass jar. A white precipitate will form and settle. This mixing process represents a coral polyp extracting calcium from the sea water, and combining it with carbon dioxide, to produce the hard materials of coral skeletons.
- You may then drain the liquid off and dry the ‘coral’ material to look at.