7. CORAL: WHAT PORTION IS ALIVE?

Outcome/Objective: Students will comprehend the living portion of stony corals are all on the exterior non-attached surface.

Materials: Assorted pieces of stony coral. Dome-shaped pieces (such as brain coral) are best.

Key words: Surface area, displacement, volume.

Instructor notes: Do not collect samples of "live" coral for this activity. The kind of coral sample you choose will determine the difficulty of the task. It is easier with dome corals; difficult with irregular shaped pieces. Select your samples with the math skills of the students in mind.

Procedure: Divide the class into groups. Give samples of coral to each group. Provide them with plastic wrap.

Instruct them to wrap the outer surface of the coral with the plastic wrap so that it fits into all of the convolutions. Use a single thickness of wrap. While they are doing this, you may teach them that the living coral on the surface is no thicker than the plastic wrap they are using.

Have the students unwrap their coral. They then need to measure the total surface area of the plastic that represents the layer of living coral. They can divide the plastic into squares or use other techniques to determine the total surface area of the living colony.

Conclusions: Students should have a better understanding of the fragility and importance of coral, and understand that it lives only on the surface.

Extensions: The students may also investigate the volume of the coral sample by using a displacement method. Submerge the sample in water and measure how far the water rises in a graduated cylinder. They can do this for different shapes of coral. Then have them make a graph of the relationship of surface area to volume for various shapes.

This activity provides a good opportunity to discuss impacts of humans, vessel groundings, anchors and other impacts to coral.

Correlation to National Standards from McREL (http://www.mcrel.org) :

Life Sciences

5. Understands the structure and function of cells and organisms