

Coral Reef Creation

Brilliantly replicate thousands of years of oceanic evolution in just a few hours

(art + science)

Coral reefs are a precious resource in the ocean because of their beauty and biodiversity. Reefs provide shelter for a wide variety of marine life, they are a valuable source of organisms for potential medicines, they create sand for beaches, and they serve as a buffer for shorelines.

Coral reefs are made by millions of “baby” coral polyps. The hard skeletons of stony corals are made up of calcium carbonate (CaCO₃), which is the substance that gives a coral reef much of its structure. The baby coral look like tiny jellyfish as they float around in the water. They look for a hard surface to attach themselves to, then start to build a shell shaped like a round vase, where the coral polyp will live. Corals can exist as individual polyps, or in colonies and communities that contain hundreds to hundreds of thousands of polyps.

Coral reefs are extremely colorful. Some scientists say the reason for this is to provide camouflage for bright tropical fish as they move through the reef.

GRADES K-12 Note: instructions and materials are based upon a class size of 24 students. Adjust as needed.

Preparation

1. Divide the clay using a wire clay cutter; need approximately 1 lb per student.
2. Cover the tables with unprimed canvas to keep the clay from sticking to them.
3. Gather rigid boards for moving the clay and plastic bags or sheets to cover the clay while still wet.
4. Assemble materials that might be used to impress textures. Real shells or pieces of coral will make natural-looking impressions.

Process

1. After students have looked at many images of coral, they should decide on a type of coral they might want to make. Alternately, they could choose to create a new species of coral! Begin by making a base for the coral by creating a solid mound of clay about 4” in diameter. The solid base will provide weight and stability for the coral.



Materials

Amaco[®] Stonex White Clay, 25-lb (33247-1025); need 1 lb per student

Blick[®] Studio Acrylics, 8-oz assorted colors (01637-); share at least five bright colors among class

Blick[®] Scholastic Golden Taklon, round brushes, set of 6 (05858-0069); share four among class

Sargent[®] Pearlescent Mixing Medium, 16-oz (00733-1006); share one among class

Blick[®] Medium-Weight Cotton Canvas, unprimed rolls, 7-oz, 62” wide x 1-yd (07309-1062); need enough to cover tables

Wire Clay Cutter (30327-1018); need one

Optional Materials

Blick[®] White Moist Talc Firing Clay, 25-lb box (30534-1025)

8-Piece Beginner Pottery Tool Set (33091-1008)



Process, continued

- Place the base on a board, and keep it covered in plastic while completing the next step.
- In this step, molds and/or stamps will be made out of clay to help add texture and interest to the coral piece. Begin by rolling out two coils of clay about 2" long. Diameters between 1/4" and 1" will work best. Press into each end of the coil with a tool or pencil to create an interesting indentation. After the coils have dried, there will be four different molds to use in applying interesting texture or "spines" to the coral.
- Hand-build the body of the coral using pictures of coral types as a guideline, or create a species never seen before! Make a cup-shaped coral, or a branching type. Attach the coral to the solid base using the "slip and score" method. Scratch into the base and also into the bottom of the coral with a needle tool or fork, and add a small amount of liquid clay to act as glue when joining the two pieces together.
- Now, use the dry clay stamps to impress textures into the coral.
- When the self-hardening clay has dried, paint the coral with vibrant acrylic or tempera colors. Mix Pearlescent Mixing Medium into the paint, or use it alone to impart a beautiful shimmer.

Options

- If using firing clay, allow it to dry completely, bisque fire it, and then paint it as above.

National Standards for Visual Arts Education

Content Standard #1 — Understanding and applying media, techniques, and processes.

- K-4** Students know the differences between materials, techniques, and processes.
- 5-8** Students intentionally take advantage of the qualities and characteristics of art media, techniques, and processes to enhance communication of their experiences and ideas.
- 9-12** Students apply media, techniques, and processes with sufficient skill, confidence, and sensitivity that their intentions are carried out in their artworks.

Content Standard #6 — Making connections between visual arts and other disciplines

- K-4** Students identify connections between the visual arts and other disciplines in the curriculum.
- 5-8** Students describe ways in which the principles and subject matter of other disciplines taught in the school are interrelated with the visual arts.
- 9-12** Students compare characteristics of visual arts within a particular historical period or style with ideas, issues, or themes in the humanities or sciences.



Step 1: Create a solid mound of clay as a base for the coral reef.



Step 2: Add textures and "spines" to the coral piece using handmade stamps.



Step 3: Paint the dry or bisque-fired piece with bright paints and Pearlescent Mixing Medium.