

## CORAL SPAWNING GLOBE

### Supplies (Makes 10-24 globes):

- 20-24 plastic jars (8-10 oz.) with screw on lids (size may vary) – wide mouth works best
- Modeling clay – oil based
- Water color paintbrushes with narrow handles (or other blunt ended tools)
- 24 bump chenille stems (find at your local craft supply store; plain chenille stems or pipe cleaners will work if you can't find the bump variety)
- Scissors or wire cutters
- Large mixing container (8 quart size or larger)
- 24 cups water
- 8 tsp. (4 packets) *Knox Original Gelatine* (unflavored) – using another brand may produce different results
- Spoon
- Blue food coloring
- 20-24 Tbsp. plastic stuffing pellets (see diagram)
- Teflon tape or other type of thread sealing tape (used by plumbers to seal pipes by wrapping around the threads; find at your local home improvement or hardware store, or search the web for sources using terms such as 'plumbers tape' or 'PTFE tape' or 'thread seal tape')

### Background:

*Every year, beginning about 7-10 days after the full moon in August, the corals at the Flower Garden Banks National Marine Sanctuary have a mass spawning event. Each night, corals release their sperm and egg packets into the water en masse. Only one species will spawn on any given night. This prevents fertilization between species (which would result in sterile offspring). The egg packets and sperm float to the surface, where the egg packets burst open, releasing millions of eggs to be fertilized. As the planula (baby corals) develop over the next few weeks, they gradually become heavy enough to sink and settle on the bottom. Those that are fortunate enough to land in an area with the proper conditions will mature into coral polyps (individual animals) that will reproduce by splitting and/or budding, thus forming a coral colony. Optimal growing conditions for reef building stony corals include:*

- *A hard surface to anchor the polyp against currents and waves*
- *Warm water (68-85 degrees Fahrenheit)*
- *Clear, sunlit water for the symbiotic zooxanthellae (algae) that lives in the coral's tissue and produces the primary food source for the host coral*
- *Moving water, to provide a constant supply of microscopic plankton as a secondary food source.*

### Procedure:

1. Use various colors of modeling clay to create a small reef of boulder corals and sponges that will fit inside each jar lid.
2. Place a reef on the inside of each jar lid, pressing firmly around the outer edges to make it adhere firmly to the lid.
3. Use the handle end of the paintbrush to poke shallow holes into the "corals" to represent the individual coral cups that make up a whole coral colony.
4. Cut each chenille stem apart between each of the fluffy segments.
5. Fold each chenille segment in half and press the folded ends into the "reef" at various intervals to represent Christmas tree worms (about 3-4 per reef).
6. Sprinkle gelatin over 6 cups of cool water in mixing container.

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<http://flowergarden.noaa.gov>

7. Bring remaining 18 cups of water to a boil, and then add it to the contents of the mixing bowl.
8. Stir mixture until gelatin is thoroughly dissolved, then allow it to cool completely.
9. Add a few drops of blue food coloring and stir until color is uniform.
10. Fill individual jars with blue mixture, leaving room for displacement by coral colony.
11. Add 1 Tbsp. of plastic pellets to each jar. These represent the egg packets released by corals during sexual reproduction.
12. Screw the lid onto each jar, with the reef attached. The reef will now be hanging upside down.
13. Check the liquid level in each jar. Remove or add liquid as necessary to make sure each jar is full.
14. Place a triple layer of Teflon tape around the top edge of the jar, covering the screw threads to prevent leakage, before screwing the lid onto the jar for the final time.
15. Shake up the jars and turn them upside down so that the lids are resting on the table. The plastic pellets should rise from the “reef” to what is now the top of the jar, resembling a mass spawning event at the Flower Garden Banks National Marine Sanctuary.