

Student Instructions Handout

Positive Buoyancy Station

1. Pour into the glass container about 1.5 inches (3.8 cm) of corn syrup.
2. Pour 2 inches (5 cm) of cool water on top of the corn syrup.
3. Mix 3 drops of food coloring with about $\frac{1}{4}$ cup (59 ml) of isopropyl alcohol (blue food coloring recommended) in the cup.
4. From the cup, pull the colored fluid up into syringe by submerging the tube tip and pulling back on the plunger.
5. Push slightly to fill the tube until almost to the end.
6. Insert the tube carefully into the lowest layer of fluid within the container, below the surface of the corn syrup, pointing the end of the tubing away from container walls.
7. Experiment with a small squirt of fluid first. What happens to the colored fluid in the corn syrup compared to what happens to it in the water layer? Make a sketch on the worksheet.
8. Try a bigger squirt.
9. Sketch and/or photograph the colored fluid, filling out the worksheet. If cameras are available, place the camera directly in front of the glass container on the white sheet of paper. Take close-ups, activating any close-up (macro) feature on the camera. Also take wider angle images that include the top waterline in the container.
10. Complete the worksheet.
11. Clean the station.



Negative Buoyancy Station

1. Fill the glass container half full with warm water.
2. Drip food coloring directly into the water, first one droplet, then several together. Observe what happens.
3. Experiment with dripping from different heights: $\frac{1}{2}$ inch (1.3 cm), one inch (2.5 cm), 2 inches (5 cm), 4 inches (10 cm).



4. Sketch and/or photograph the colored fluid, filling out the worksheet. If cameras are available, place the camera directly in front of the glass container on the white sheet of paper. Take close-ups, activating any close-up (macro) feature on the camera. Also take wider angle pictures that include the top waterline in the container.
5. Complete the worksheet.
6. Clean the station.

Source of all images:

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