Stick Man, Away!

Theme: Density

Curriculum Area: Physical Science

Activity:

- Density is a property of matter that associates the mass of an object per unit volume. This can be expressed through unique scenarios such as water and oil, and how they are "layered", which takes into account the density of a substance. If a substance is less dense compared to another substance, it will float on top of the dense substance. Insolubility is the inability of a substance to dissolve in water. Using this concept, we will demonstrate density between water and insoluble dry erase markers on ceramic plates to determine which substance is less dense, and how it reacts to this situation.

Ages of Children: 10-11 years of age | 5th grade

Materials Needed:

- Dry Erase Markers
- Ceramic Plates
- Water
- Pitcher (or water bottle will suffice)

Developmental Objectives/Domains: By participating in this activity, children will:

1. Develop observational, inferring, and classifying skills.
2. Enhance their language arts skills with new vocabulary such as "density" and "insolubility".
3. Understand the unique properties of different substances and how they interact with one another.
4. Learn about scientific concepts such as the physical property of density and the insolubility of various substances in a water solution.

Procedure:

1. Place the ceramic plates on a stable, flat surface to prevent potential injury or breakage.
2. Provide the students will dry erase markers, allowing them to draw anything school-appropriate. The model used will involve a stickman.
3. When students have finished drawing, gently pour enough water into the plate so that it doesn't rise over the edges of the plate, and the drawings begin to float on the surface of the water.
4. Students can interact with the floating drawings by using their fingers to move the drawings (optional).

5. Explain how the density of the dry erase markers is less dense than the water provided, which causes it to float on top of the water layer. To prevent confusion on why the dry erase doesn't mix, also briefly explain the concept of insolubility which is present in this scenario.
6. Carefully pour the water down the sink, and return all the plates to their designated locations.
7. Have the students wash their hands.

References: https://gizmodo.com/the-science-behind-that-stick-figure-doodle-brought-to-1791911033