OK GO SANDBOX

DANCING WITH DYE

ABOUT THIS CHALLENGE

In the video "Dye in Water," the members of OK Go play with dyes and water to create a mini music video. To do this, they first experiment with how different dyes "feel" in the water. In this activity, we present ways that your students can explore the concepts of density and apply it to their own artistic creations.

CONTENT AREA

Grade Levels: 3-8

Content Area: Science

Context for Learning: Before this lesson, discuss emotions and how art can evoke emotions.

TOPICS

Emotion

Fluids

Density

Color

Speed

ACADEMIC LANGUAGE

Fluid

Viscosity

Density

STANDARDS

Science Standards (NGSS):

5-PS1-2. Make observations and measurements to identify materials based on their properties.

National Code Art Standards (NCAS):

VA:Cr2.1.8a Demonstrate willingness to experiment, innovate, and take risks to pursue ideas, forms, and meanings that emerge in the process of artmaking or designing.

Note: This lesson plan may align with other sets of standards not included here.

LEARNING OBJECTIVES

Students will be able to:

Make artistic decisions regarding materials and colors.

Discuss the ways in which their decisions might evoke different emotions.

MATERIALS

Water

Cooking Oil

Corn Syrup

Clear Cups

Food Dye

Colored Paints

Additional liquids for experimenting (dish soap, bubble solution, baby oil, honey, etc.)

INSTRUCTIONAL DELIVERY

OPENING ACTIVITIES/MOTIVATION

Optional: Show the **"Upside Down and Inside Out"** music video (3 minutes and 21 seconds).

Show the **"Art of Experimentation"** video. (5 minutes 35 seconds).

Some Vocabulary for this Lesson:

A **fluid** is a substance which has no rigid shape. In other words, its shape will change to fill its container. This means that not only are liquids like water and honey fluids, but gases are fluids too! Air, Helium, and all the other gases are fluids as well.

All fluids have a **viscosity**. The viscosity of a fluid describes its resistance to flow, or how hard it is for the fluid to change its shape, or for an object to travel through the fluid. This is what makes it harder to swim through a pool than walk alongside one. The viscosity of air is less than the viscosity of water.

Like all substances, fluids also have a **density**. A substance's density describes how much mass it has in a given volume. Volume is the amount of space something takes up. An object that is very dense could have lots of mass but take up very little volume, like a block of lead. An object which is not very dense could take up lots of space, but have very little mass, like a balloon filled with air. Very dense liquids will sink in liquids which are less dense.

PART ONE: LEARNING THE BASICS

Lead a discussion introducing fluid mechanics to your students.

Organize your students in groups of 2 or 3. Equip each group with an identical set of materials. Each student group should have at least one cup per fluid they have been provided. Using the material in the vocabulary section below, teach your students about the fluid properties. Using the guiding questions below and a method of your choice, begin a short discussion where students share examples of different types of fluids (e.g. low-density fluids, high viscosity fluids, etc.) to familiarize each other with the ideas.

PART TWO: DANCING WITH DYE

In "Dye in the Water" the members of OK Go experimented with different ways of dropping fluids into water. They took time to notice how different densities, colors, and dropping techniques reminded them of different emotions (such as sadness) and shapes (such as an upside down flower.)

The band's process is to explore and try things before putting together a plan for their music video.

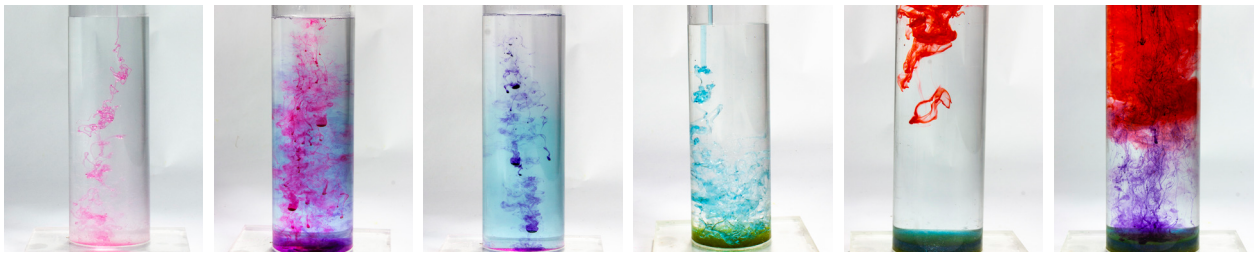
This "moody" dancing dye tower is made from fluid interactions between food coloring, dish soap and cooking oil. What kind of emotions does it evoke? What genre of song would you pair with this dancing dye?

Encourage your own students to play with different types of dyes and fluids to see what ideas and emotions they can evoke.

Do they find that faster falling dye drops seem more exciting?

Do slowly falling dye shapes make you feel dreamy?

What words do the dye patterns evoke? (some that came up when we played with dye include “languid,” “melancholy,” “chaotic,” “playful,” and “energetic.”)



If your students would like to take this experimentation further, ask them to pick a piece of music and explore creating dye patterns and movements that they feel best go with the music.

ASSESSMENT

Evaluation of Learning Objectives: Lead students in a discussion and prompt them to explain their thought processes throughout the activity and see what conclusions they drew after completing the experiment. What surprised them? Did the fluids behave the way students were expecting?

Closure: Ask students if they can relate these concepts to things they see in everyday life.