Introduction:

In this experiment, we’ll learn about density by examining foods/liquids that float or sink in water.

Materials (per group):

* large mason jar
* 2 grapes
* 2 strawberries
* 2 peppers
* 2 carrots
* 2 cups of corn kernels
* small mason jar
* 2 tablespoons of baking soda
* 1 cup of vinegar
* graduated cylinder or yogurt glass
* Honey
* Corn Syrup
* Dish Soap (differently colored than the other liquids, preferably)
* Water (with dye, preferably)
* Vegetable Oil

Intro video: https://www.youtube.com/watch?v=dcQR6vV1Sqo

Procedure (all actions/verbs to be completed by a student):

Part One:

1. Complete the discussion questions by talking within your group.
2. Fill up the mason jar three quarters full with water
3. For each food, first predict whether the food with sink or float, then test your prediction!
   1. grapes
   2. strawberries
   3. peppers
   4. broccoli
   5. corn kernels
4. Once you finish, leave the corn kernels in the large mason jar!
5. Remove a third of the water, so that the large mason jar is half full.
6. Add 2 tablespoons of baking soda.
7. Pour 1 cup of vinegar (maybe two) into the small mason jar.
8. Before pouring the vinegar into the large mason jar, ask the students what they think will happen.
9. Take time to explain why the popcorn kernels ‘danced’ (C02 released, surface friction on kernels, changes density until popping, etc..
10. Adjust the ratios of baking soda and vinegar to get the kernels to dance more.

Part Two:

1. In the following order, have the students pour different liquids into the graduated cylinder. Be sure to have them pour carefully.
   1. Honey
   2. Corn Syrup
   3. Dish Soap
   4. Water
   5. Vegetable Oil
2. Ask the students what they think about these liquids’ densities.
3. Now repeat the same process but using the glass yogurt jar. When complete, stir the mixes up and watch them re-separate!