

JR-SCIENTISTS

EMULSIFICATION

What is emulsification? Try this simple experiment to find out!

INSTRUCTIONS:

STEP 1: Pour about a 1/4 cup of vinegar into your glass or jar. (if you use a jar with a lid you don't need to whisk, just shake!)

STEP 2: Now add 2 Tbsp of oil. Whisk or shake and then wait a few moments. What happens?

STEP 3: Now repeat this same process, but first start with a teaspoon of mustard in your glass.

STEP 4: After adding the vinegar, mix and then SLOWLY drizzle the oil into the mustard and vinegar mixture WHILE whisking.

STEP 5: Now wait a few moments. Did the same thing happen with this mixture?

THE SCIENCE

Why don't oil and vinegar mix? Did you notice the oil and vinegar separated? The water molecules attract each other, and the oil molecules stick together. That causes oil and water to form two separate layers.

But think about salad dressings. Oil and vinegar combine into a smooth, completely mixed combination—at least for a little while. How? The mustard is attracted to both vinegar and oil molecules. It grabs onto both types of molecules causing oil droplets to be suspended in the water which is called an emulsion.

SUPPLIES

Clear glass

Whisk

Vinegar

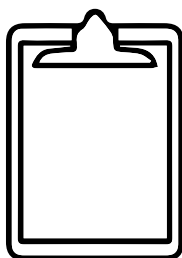
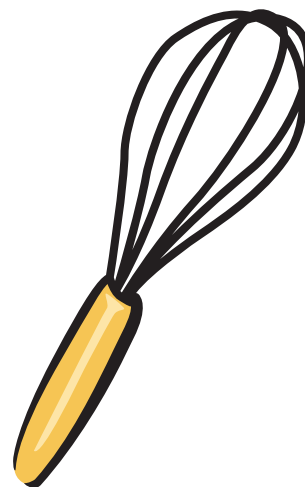
Oil

Mustard



Emulsion Observations

Use this worksheet to process and evaluate your work.



RECORD

What happened when you mixed oil and vinegar?

What happened when you added the mustard and mixed?

Which substance was considered the 'emulsifier'?

What are some common foods that contain emulsifiers?
