

Make Pepper Dance!

What you need:

Ground black pepper (1/2 tsp or so)

A shallow bowl or pie plate

Water

Dish soap

A paperclip or toothpick (or your finger!)



What you do:

Pour water in the bowl until it is mostly full.

Sprinkle the black pepper on top of the water. Observe what happens. Is the pepper floating?

Put a dab of dish soap on your paperclip (or on your finger) and dip into the pepper water. What happens?

What's happening:

The way the pepper behaves is directly related to the surface tension of the water. Pepper is hydrophobic or doesn't dissolve or mix into water. Water molecules are strongly attracted to each other (and therefore have a high surface tension.) This keeps the pepper afloat on top of the water.

When you introduce dish soap, you interfere with the surface tension. The water molecules spread out away from the soap as they try to stay together and maintain their surface tension. As the molecules move, they bring the pepper with them.

<https://funlearningforkids.com/magic-pepper-and-soap-science-experiment/>