



Inquiry Approaches

Initial Inquiry

Following the proper "if-then" format, formulate a hypothesis about what will happen to the oil and water when salt is added.

A possible hypothesis is as follows: if salt is added to the oil, then the oil will sink. Students should understand that their hypothesis should directly relate to what is being tested and that it is acceptable for their predictions to be wrong.

Following the proper "if-then" format, formulate a hypothesis about what will happen to the oil and water when sugar is added.

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Experimental Procedure Inquiry

What causes the oil droplets to sink when the salt or sugar is added?

The density of the oil droplets is increased by the addition of salt or sugar, making the droplets more dense than water and causing them to sink.

Why do the oil droplets eventually float back up?

The salt leaves the oil to dissolve in the water, reducing the density of the oil and causing the droplets float back up to the surface. The sugar droplets will not float back up, because the sugar does not leave the oil.

Explain why the sugar and salt form different sized droplets.

Sugar is more soluble in oil than salt. Some of the sugar particles dissolve in the oil while fewer particles are trapped by the oil to form a droplet. Salt is less soluble in oil, therefore more salt particles will be trapped by the oil to form a larger droplet.