

What is in the Cereal You Eat?

Let's extract minerals from the cereal you eat!

Materials

- 1 Cup Iron Fortified Cereal
- 2 Cups Hot Water
- Deep Mixing Bowl or Cup
- Spoon
- White Magnet (can paint a black magnet white if needed)

Instructions

1. Place the magnet in the bowl.
2. Pour 1 cup of iron fortified cereal, such as Total, into the mixing bowl.
3. Add 2 cups of hot water.
4. Stir the water and cereal for at least ten minutes, but thirty minutes will give the maximum iron recovery.
5. Carefully take the magnet out of the bowl and observe
6. Why do you think this works and why is stirring necessary? Do you think there are actually metallic shavings in the food you eat?

Food for Thought

- What other fortified food product could be used instead of cereal? You may want to try an iron rich drink or cooked hot cereal.
- Try crushing the cold cereal before adding the water. Does this improve the recovery time? Does it make a difference if the cereal is crushed in a separate container and then transferred to the bowl?
- Can you weigh the extracted iron? How much does it weigh?

Why/how does this work?

Cold cereals are fortified with vitamins and minerals for health. Metallic iron is added to fortified cereal and this form of iron is magnetic. In this experiment the magnet collects the iron. In other processing methods for metals, such as coal beneficiation, copper, uranium, and gold, acidic or caustic water, gravity separation, or flotation might be used. An example of gravity separation is gold-panning. When a gold pan is agitated, the heavier mineral drops to the bottom of the pan and the lighter rocks wash away.