

Name: _____

FUN WITH MAGNETS

Learn how to reveal IRON HIDDEN IN YOUR FOOD

You may think of it largely in terms of lawn furniture and vitamins, but iron is everywhere. Not only is iron the fourth most common element in the earth's crust, it's also an essential part of our own blood!

Many foods contain iron, which blood cells need in order to carry oxygen. A molecule called heme contains the iron ion at its center. The hemoglobin protein is made up of four heme groups. Blood vessels in the lungs, where oxygen concentration is high, allow the hemoglobin to bond to the oxygen molecule to create oxyhemoglobin, which is then transported to oxygen-hungry tissues throughout the body.

Because iron is so important to your body, you need to make sure you get enough in your diet. You may have heard about meat and spinach being rich in iron (what do you think made Popeye so amazingly buff?) but it's found in many other foods, including most breakfast cereals.

Iron is naturally magnetic, and even though your blood contains iron, you can't get a refrigerator to stick to you. That's because the iron in your blood is spread out into particles too small to get the magnet to react. You can, however, use a magnet to separate the iron contained in some iron-rich foods. Who knew breakfast cereal could be so delicious and so magnetic?

WHAT YOU NEED:



**A strong
(neodymium) magnet**



**Cereal or other
food with iron***



A Ziploc® bag



**A plastic,
see-through cup**



A little water

* Crunchy, high-iron foods are best; we suggest using Total® cereal or Gerber Graduates® Arrowroot cookies.

WHAT YOU'LL DO:

1.

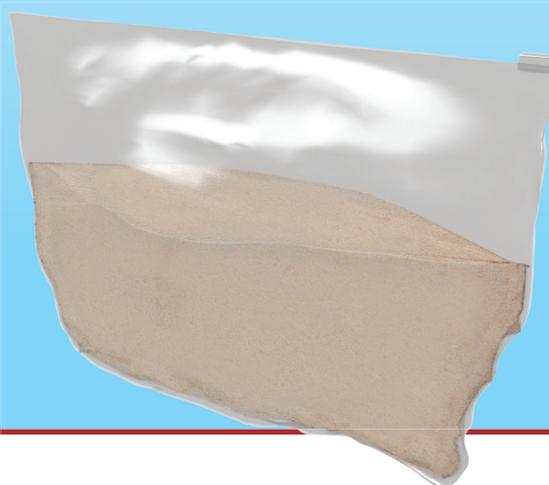
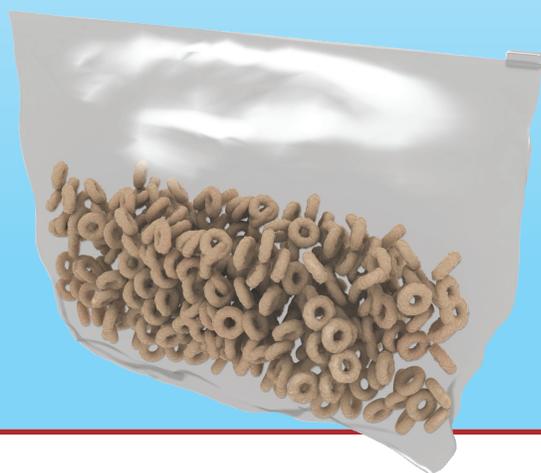
Pour some of the food into a plastic bag. Seal the bag with as little air in it as possible, then mash the food until you make a powder.

2.

Fill the bag with some water and mix.

3.

Let the mixture sit for at least one hour.



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- 4.** After the cereal mixture has been allowed to sit, pour some into a plastic cup.



- 5.** Move a strong (neodymium) magnet against the side of the cup for about a minute. You should observe iron particles collecting on the side of the cup!



Did you know?

- People without enough hemoglobin in their bloodstream are called anemic. The most common symptoms of anemia are weakness and fatigue.
- All of the blood in your whole body contains about 2.5 grams of iron — about the weight of a single penny. It's amazing that such a small amount can be so important!



- How much iron you need in your diet depends on your age and gender. Teen and adult women need about 15 milligrams a day. Teen and adult men need about 10 milligrams a day.

- Breathing carbon monoxide (such as car exhaust) is dangerous because it binds to the iron in the heme molecule about 200 times tighter than oxygen does. This kicks those needed oxygen molecules out of the way, possibly leading to suffocation.

