



IRON IN YOUR BREAKFAST



Science in your cereal!

Our bodies need iron to help carry oxygen in our blood to our muscles. Because we cannot make iron naturally, some food makers add iron into their food to make sure that we are getting enough. This might help people with coeliac disease, who may not get enough iron because their intestine becomes damaged, meaning that they can't absorb it very easily.

Iron is magnetic, which means that it is attracted to magnets. Inside the black iron particles which you might have seen in this experiment are tiny electrons, which fit inside atoms. The electrons in iron all have their own tiny magnetic fields, which sometimes line up with the magnetic force from a magnet.

Crushing up the cereal and making it soggy with water helps the iron particles to move around, and putting the magnet near the bag helps to pull the iron particles through the watery cereal. Usually, these particles are too small to see, but if enough iron collects around the magnet, we can see them with our naked eye!

YOU WILL NEED

- Rolling pin
- Re-sealable food bag
- Magnet (the strongest one you can find)
- Piece of plain white paper
- 1 cup of your favourite gluten-free breakfast cereal, labelled "Fortified with iron"
- 100ml warm water

INSTRUCTIONS

1. Pour the cereal into the food bag, squish most of the air out, and seal the top.
2. Use your rolling pin to crush the cereal inside the bag into a fine powder
3. Open the bag, and pour the powder out onto the white paper in a thin layer.
4. Run your magnet closely over the top of the cereal - does it pick up any small, black particles?
5. Put the cereal back into the bag, add 100 ml of warm water, and reseal the top.
6. Gently swirl the cereal in the bag to make sure that all of it gets some water.
7. Put your magnet down, and place the bag on top of the magnet.
8. Leave the bag for 15 minutes.
9. Gently, pick up the bag and the magnet together. Turn the bag over, keeping the magnet in place.
10. When you take the magnet away from the bag, can you see a cluster of small black particles around where the magnet used to be? This will be the magnetic iron in your cereal, which is attracted to the magnet.