Name: _____ Date: _____

How a Big Magnet Sorts Scrap Metal

Circle group

At a recycling center, a crane swings a huge magnet over a pile of mixed metal. The magnet is switched on. Steel lifts up and clings to it. The magnet is switched off. The steel drops into a bin. The crane sorts a heap in a few moments.

Magnets do not pull on every metal. They pull hard on iron and on steel. Steel is made mostly of iron. Many food cans are steel, so a magnet picks them up. An aluminum drink can is different. A magnet does not pull on it. It does not pull on copper pipe, glass or plastic.

You can test this with a small fridge magnet. Try it on a steel paper clip, a coin, an aluminum can and a wooden spoon. Only some will stick. Make a chart of what you find.

A magnet works through a thin gap. It can hold a drawing on a fridge door with paper in between. The pull gets weaker as the gap gets wider.

In sorting plants, magnets take out the steel first. Other machines sort the rest. Workers do not have to pick through heavy piles by hand.

Questions

1. What does the crane magnet do when it is on?

_____

_____

2. Which metals do magnets pull hard?

_____

_____

3. What things does a magnet not pull?

_____

_____

4. Why will a magnet pick up many food cans?

_____

_____

5. Why can a magnet hold a drawing on a fridge door?

_____

_____

6. Why is a big magnet helpful in a sorting plant?

_____

_____

Words to know

recycling: turning old things into new materials so they can be used again
clings: holds on tightly to something
aluminum: a light, silvery metal used for drink cans

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

How a Big Magnet Sorts Scrap Metal

Triangle group

At a recycling center, a crane swings a huge magnet over a pile of mixed metal. When the magnet is switched on, steel lifts up and clings to it. When the magnet is switched off, the steel drops into a bin. The crane has sorted a heap in a few moments.

Magnets do not pull on every kind of metal. They pull strongly on iron and on steel, which is made mostly of iron. Many food cans are made of steel, so a magnet will pick them up. An aluminum drink can is different. A magnet does not pull on it, and neither does it pull on copper pipe, glass or plastic.

You can test this idea safely with a small fridge magnet. Try it on a steel paper clip, a coin, an aluminum can and a wooden spoon. Only some of them will stick. Make a chart of what you find.

Magnets work even when something thin sits between them and the metal. A magnet can hold a drawing to a fridge door, with paper in the gap. The pull gets weaker as the gap gets wider, though.

In sorting plants, magnets take out steel first. Then other machines separate the rest. This saves workers from picking through heavy piles by hand.

Questions

1. What does the crane magnet do when it is switched on?

_____

_____

2. Which metals do magnets pull strongly?

_____

_____

3. Which things are not pulled by a magnet?

_____

_____

4. Why will a magnet pick up many food cans?

_____

_____

5. Why can a magnet hold a drawing to a fridge door?

_____

_____

6. Why is a big magnet helpful at a sorting plant?

_____

_____

Words to know

recycling: turning old things into new materials so they can be used again
clings: holds on tightly to something
aluminum: a light, silvery metal used for drink cans
separate: to pull things apart into groups

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

How a Big Magnet Sorts Scrap Metal

Square group

At a recycling center, a crane swings an enormous magnet over a heap of mixed metal. When the magnet is switched on, steel leaps upward and clings to it, and when the magnet is switched off, the steel drops into a waiting bin. In just a few moments, the crane has sorted an entire pile.

Magnets do not attract every kind of metal. They pull strongly on iron and on steel, which is made mostly of iron. Many food cans are made of steel, so a magnet will pick them up. An aluminum drink can behaves differently, because a magnet exerts no pull on it, and the same is true of copper pipe, glass and plastic.

You can test this idea safely with a small fridge magnet. Try it on a steel paper clip, a coin, an aluminum can and a wooden spoon, and you will find that only some of them stick. Record your results in a chart.

A magnet can even work when something thin lies between it and the metal. That is how a magnet holds a drawing to a fridge door with the paper sitting in the gap. The pull grows weaker, however, as the gap becomes wider.

In sorting plants, magnets remove the steel first, and then other machines separate the remaining materials. This spares workers from picking through heavy piles by hand.

Questions

1. What happens to steel when the crane's magnet is switched on?

_____

_____

2. Which metals do magnets pull on strongly?

_____

_____

3. Which materials does a magnet exert no pull on?

_____

_____

4. Why will a magnet pick up many food cans?

_____

_____

5. How can a magnet hold a drawing to a fridge door?

_____

_____

6. Why is a big magnet valuable at a sorting plant?

_____

_____

Words to know

recycling: turning old things into new materials so they can be used again
clings: holds on tightly to something
aluminum: a light, silvery metal used for drink cans
separate: to pull things apart into groups

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: How a Big Magnet Sorts Scrap Metal

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: How a Big Magnet Sorts Scrap Metal

Easier · 193 words · Flesch-Kincaid grade 2.4

1. Steel lifts up and clings to it.
2. Iron and steel.
3. Aluminum drink cans, copper pipe, glass and plastic.
4. Many food cans are made of steel.
5. It still pulls on the metal door through the thin paper.
6. It takes out the steel fast, so workers do not have to pick through heavy piles by hand.

Triangle: How a Big Magnet Sorts Scrap Metal

This passage · 213 words · Flesch-Kincaid grade 4

1. Steel lifts up and clings to it.
2. Iron and steel.
3. Aluminum drink cans, copper pipe, glass and plastic.
4. Many food cans are made of steel.
5. The magnet still pulls on the metal door through the thin paper.
6. It takes out the steel quickly, so workers do not have to pick through heavy piles by hand.

Square: How a Big Magnet Sorts Scrap Metal

Harder · 228 words · Flesch-Kincaid grade 6.4

1. It leaps upward and clings to the magnet.
2. Iron and steel.
3. Aluminum drink cans, copper pipe, glass and plastic.
4. Many food cans are made of steel.
5. It still pulls on the metal door through the thin paper in the gap.
6. It removes the steel quickly, which spares workers from picking through heavy piles by hand.