



## Metals KS1: Ice Magnets

### Lesson Objective:

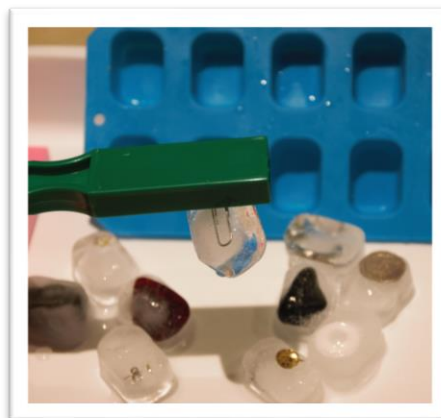
Children will learn which metal objects are magnetic and which are not in a fun ice magnet activity.

### Science National Curriculum links:

KS1 – Develop understanding through experimentation, experiencing and observing natural phenomena, begin to use simple scientific language, notice patterns and grouping and classifying items.

### Resources:

- Magnets or magnet wands
- Assorted metal and non-metal objects – include things like paper clips, coins, nails, screws, marbles, small plastic toys or lego, tin foil.
- Plastic tray for each group
- Ice cube trays and small freeze-proof containers like yogurt pots
- Freezer



Time required: 60 mins plus overnight freezing

### Introduction to Activity:

Ask the children about magnets – what do they know about them?

Have any children seen them used?

They might know about magnets to pick up cars and magnetic fishing games.

### Main Activity:

1. Submerge a variety of metal objects under water in the ice cube trays and containers and leave overnight to freeze.
2. This activity would work well in small groups around a central tray.
3. Ask children to predict which objects will stick to the magnets.
4. Experiment with the objects – which objects will stick and which won't. Let the children touch and manipulate the objects themselves.

4. Record results in a large table – either displayed on the smartboard, or printed onto a large piece of paper and gather children together to talk through results.

5. Look at the results after the ice has melted too.

### Results:

How many objects were attracted to the magnet?

Which objects were attracted to the magnet?

Did the ice make it difficult for the objects to stick to magnet?

Did the results change as the ice melted?

### Conclusion:

Discuss as a class what connects the objects that were attracted to a magnet.

Were they all made of a similar metal?

Were any objects a surprise?

### Extension Activities:

*Literacy:* Sort out the objects into magnetic and non-magnetic using word cards.

*Art:* Imagine a future use for magnets. What would a future world using magnets in a new way look like? Could we use magnets to power aircraft? Could we use magnets to stick to the ceiling or climb up the sides of buildings? Draw a picture!

### Explanation:

Magnetism is a strong invisible force, that pushes or pulls certain metals with huge power. There are lots of uses for magnets. They are used to pick up steel or iron objects, for example to pick up scrap iron and steel, or to sort out mixed up materials like plastic and metal recycling and sometimes to power vehicles like maglev trains

(<https://science.howstuffworks.com/transport/engines-equipment/maglev-train.htm>).

The Recycle Devon Schools Youtube channel has a collection of videos showing how magnetism is used: <https://bit.ly/37IKsRm>

There is lots more information and some extra videos to watch at the BBC Bitesize pages: <https://www.bbc.co.uk/bitesize/topics/zyttyrd>

### Home Schooling:

Preschoolers and young children (4-7 years old) will enjoy doing this activity at home. Let them play with the objects and find out what happens when the ice melts.

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