# **Forces and Magnets:** Magnet Strength

| **Aim:** | **Success Criteria:** | **Resources:** |
|---|---|---|
| To observe how magnets attract or repel each other and attract some materials and not others by investigating the strength of different magnets.<br><br>I can investigate the strength of magnets. | I can identify different types of magnet.<br><br>I can predict which magnet will be the strongest.<br><br>I can test my prediction by adding paperclips to different magnets.<br><br>I can record my results in a table and present them in a bar chart.<br><br>I can explain my results. | **Lesson Pack**<br><br>Steel paper clips<br><br>Cotton thread<br><br>Masking tape<br><br>Variety of different types of magnets *(horseshoe, bar, button, disc, arc, cylinder or square)* |
| | **Key/New Words:**<br>Magnet, attract, force. | **Preparation:**<br>**Magnet Strength Activity Sheet** - 1 per child<br><br>**Types of Magnet Posters** placed around the classroom |

**Prior Learning:** Children will have learned about magnets and magnetic materials in lessons 2 and 3.

## Learning Sequence

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|---|---|---|
|  | **Magic Magnets:** Children carry out the hovering paper clip activity as described in the **Lesson Presentation**. Explain this activity using the **Lesson Presentation.** |  |
|  | **Different Magnets:** Explain the different types of magnets using the image on the **Lesson Presentation.** Introduce the investigation. |  |
|  | **Investigation Method:** Explain the investigation method as described on the **Lesson Presentation.** Address any misconceptions. |  |
|  | **Investigate!** Children complete their predictions on the differentiated **Magnet Strength Activity Sheet,** then conduct the investigation. Children record their results, draw a bar chart and come to a conclusion on their activity sheet. Look for children who can carry out and explain the results of their investigation into the strength of different magnets.<br><br>  Use labelled axes to construct their bar chart.<br><br>  Explain their prediction. Label the axes of the bar chart and give it a title.<br><br>  Explain their conclusion. |  |
|  | **Which Magnet is the Strongest?** Place the **Types of Magnet Posters** around the room and then ask children to stand by the one they think is the strongest. You could use the posters for other magnet related questions too. Children share their results with one another as described on the Lesson Presentation. Discuss any differences in results. |  |

**Task***it*

***Investigate*it:** Another way to test the strength of a magnet is to find out from how far away it can attract a paper clip. Gradually, increase the difference of each magnet from a paper clip. Record the distance each magnet was from the paper clip before it no longer attracted it. The magnet that could attract the paper clip from furthest away is the strongest magnet.

***Research*it:** Why not find out what the different types of magnets are used for?

***Write*it:** Write a guide to the different types of magnets in your school. Explain what they could be used for and how strong they are.