

## Science Knowledge Organisers

**Science Focus**

**Forces and Magnets Year 3**

**Spring 1**

Key Knowledge	
<b>What is a force?</b>	<b>A force is either:</b> ☐ <b>A push or A pull</b>
<b>Forces can make things</b>	☐ <b>Speed up</b> ☐ <b>Slow down</b> ☐ <b>Change shape</b> ☐ <b>Change direction</b>
<b>A force that speeds something up</b>	<b>The child is pushing the car to speed it up.</b>
<b>A force that slows something down</b>	<b>The girl is pulling the dog to slow it down.</b>
<b>A force that changes the shape of something</b>	<b>The can is being squeezed so that it changes shape and becomes smaller.</b>
<b>A force that changes the direction of something</b>	<b>When the ball is hit with the racket, it will change direction.</b>
<b>Why is magnetism different?</b>	<b>All of the forces above needed contact between two objects for them to happen. Magnetic forces can act at a distance</b>
<b>Magnets have a North Pole and a South Pole</b>	
<b>Magnets attract or repel each other</b>	
<b>Types of magnets</b>	<b>Bar, ring, button, horseshoe</b>
<b>Can magnets only attract magnets?</b>	<b>No - magnets can attract other things too. See the diagram on the opposite side</b>
Possible Experiences	
☐ <b>Explore the uses of magnets in everyday objects</b> ☐ <b>Group everyday objects into magnetic and nonmagnetic by testing with magnets</b> ☐ <b>Design a mechanism that requires a magnet to enable it to work</b>	

Key Vocabulary	
<b>Squeezed</b>	<b>Firmly press</b>
<b>Contact</b>	<b>Physically touching something</b>
<b>Magnetic</b>	<b>Can be attracted to a magnet</b>
<b>Attract</b>	<b>To come together</b>
<b>Repel</b>	<b>To force away</b>

Diagrams and Symbols
<p>Magnets only attract certain types of metals, other material such as glass, plastic and wood aren't attracted.</p> 
<p>Metals such as iron, nickel and cobalt are attracted to magnets.</p> 
<p>Most metals however are not attracted to magnets, these include copper, silver, gold, magnesium, platinum, aluminium and more.</p> 

### Greater Depth Thinking

- Think independently and raise questions about working scientifically and the knowledge and skills that it brings.
- Be confident and competent in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations.
- Demonstrate excellent scientific knowledge and understanding in written and verbal explanations, solving challenging problems and reporting scientific findings.
  - Show high levels of originality, imagination or innovation in the application of skills.