<table>
<tr><th colspan="2">Year 3 – Magnets and Forces (Forces)</th></tr>
<tr><td>Links made with other subjects</td><td>DT – moving mechanisms</td></tr>
<tr><td>The BIG Question</td><td>What can magnets do?</td></tr>
<tr><td>The BIG Outcome</td><td>Short explanation answering the question</td></tr>
<tr><td>Science objectives
(link to NC)</td><td>- compare how things move on different surfaces
-notice that some forces need contact between two objects, but magnetic forces can act at a distance
- observe how magnets attract or repel each other and attract some materials and not others
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- describe magnets as having two poles
- predict whether two magnets will attract or repel each other, depending on which poles are facing.</td></tr>
<tr><td>Prior knowledge
What prior knowledge is needed for children to be successful in this unit?</td><td>Children already know:
EYFS – Understanding the world - Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes</td></tr>
<tr><td>Future learning
Consider the conceptual knowledge within a subject that pupils need for future learning not just the recall of facts but the importance of concepts</td><td>This unit gives prior knowledge to:
Yr 5 - Forces</td></tr>
<tr><td>Science strands</td><td><u>Related Enquiry Questions</u>
<table>
<tr><td>Classifying</td></tr>
<tr><td>Based on the children’s own criteria:
-sort materials (leading towards metal/non-metal and magnetic/not magnetic)
-sort toys (leading to what makes them move e.g. push/pull).</td></tr>
<tr><td>Observing over time</td></tr>
<tr><td>Not relevant</td></tr>
<tr><td>Pattern Seeking</td></tr>
<tr><td>Not relevant</td></tr>
<tr><td>Comparative testing</td></tr>
<tr><td>-Test how objects move on different surfaces e.g. cars, spinning tops, wind-up/clockwork toys.
-Test the strength of different magnets.</td></tr>
<tr><td>Researching</td></tr>
<tr><td>- Find out how magnets are used in everyday life</td></tr>
</table></td></tr>
<tr><td>Vocabulary/ Glossary</td><td>Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar, magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole</td></tr>
<tr><td>Knowledge
(see italics for knowledge to remember)</td><td>The knowledge that children will learn and remember:

1. A force is a push or a pull.
2. When an object moves on a surface, the texture of the surface and the object affect how it moves.</td></tr>
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	3. *It may help the object to move better or it may hinder its movement e.g. ice skater compared to walking on ice in normal shoes.* 4. *A magnet attracts magnetic material.* 5. *Iron and nickel and other materials containing these, e.g. stainless steel, are magnetic.* 6. *The strongest parts of a magnet are the poles.* 7. *Magnets have two poles – a north pole and a south pole.* 8. *If two like poles, e.g. two north poles, are brought together they will push away from each other – repel.* 9. *If two unlike poles, e.g. a north and south, are brought together they will pull together – attract.* 10. *For some forces to act, there must be contact e.g. a hand opening a door, the wind pushing the trees. Some forces can act at a distance e.g. magnetism. The magnet does not need to touch the object that it attracts*
SEND expectations	1. *A force is a push or a pull.* 2. *When an object moves on a surface, the texture of the surface and the object affect how it moves.* 3. *A magnet attracts magnetic material.* 4. *Magnets have two poles – a north pole and a south pole.* 5. *If two like poles, e.g. two north poles, are brought together they will push away from each other – repel.* 6. *If two unlike poles, e.g. a north and south, are brought together they will pull together – attract.*
Common Misconceptions	Some children may think: - the bigger the magnet the stronger it is - all metals are magnetic