

	<p>Year group: Reception</p>	<p>Area/topic: Forces</p>
<p>(objectives from NC/ELG/Development matters)</p> <ul style="list-style-type: none"> *Explore the natural world around them. (Understanding the world) *Describe what they see, hear and feel whilst outside. (Understanding the world) 		

Prior learning	Future learning
<ul style="list-style-type: none"> *Explore how things work. (Nursery) *Explore and talk about different forces they can feel. (Nursery) *Talk about the differences between materials and changes they notice. (Nursery) 	<ul style="list-style-type: none"> *Compare how things move on different surfaces. (Y3 - Forces and magnets) *Observe how magnets attract or repel each other and attract some materials and not others. (Y3 - Forces and magnets) *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. (Y3 - Forces and magnets) *Describe magnets as having two poles. (Y3 - Forces and magnets) *Predict whether two magnets will attract or repel each other, depending on which poles are facing. (Y3 - Forces and magnets) *Explain that unsupported objects fall towards the Earth because of the force of gravity, acting between the Earth and the falling object. (Y5 - Forces) *Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. (Y5 - Forces)

Working scientifically & encouraging scientific enquiry
<p>Comparative testing</p> <ul style="list-style-type: none"> *How many cubes/small plastic animals can fit in different 'boats'? *Compare how cars move down ramps/gutters. *Compare how wheels turn when sand or water is poured through. *Compare how objects fall. · Compare how objects fall with and without parachutes. *Compare how different balls bounce. *Compare how things move when blown. *Compare how a marble moves through different liquids. *Compare how different paper aeroplanes fly.

What pupils need to know or do to be secure	
Key knowledge and skills	Possible evidence
<p>Children will be taught to:</p> <ul style="list-style-type: none"> *Think about how objects can be changed to make them float or sink. *Count and record how many small objects different boats can hold before they sink. *Use ramps and gutters to make cars etc. move. *Think about and explain how they can change how cars roll down ramps/gutters. *Talk about what happens when they pour sand/water through wheels and down gutters and how they could change this. *Compare how objects fall, with or without parachutes. *Explore how different balls bounce and discuss how they can change the way they bounce. *Make aeroplanes and compare how far they fly by marking where they land. *Notice and talk about how objects move in the wind. *Explore and talk about what they observe when turning bottles filled with different liquids and a marble upside down. *Ask questions about forces such as 'What happens if I...?' 	<ul style="list-style-type: none"> *Can talk about how they changed objects to make them float or sink. *Can talk about how they changed how cars move down ramps or gutters. *Can talk about how they changed how wheels turn when sand or water is poured through them. *Can talk about how they changed how balls bounce. *Can compare how different boats and aeroplanes performed. *Can describe how objects fall with and without a parachute. *Can describe how a marble moves through different liquids.
Key vocabulary	
<p>Float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow, bounce</p> <p>Expose children to supplementary vocabulary such as: Force, rotate, solid, liquid, gravity</p>	
Common misconceptions	Books linking to this area
<ul style="list-style-type: none"> *All light objects float and all heavy objects sink. *Objects made of the same material will always float or sink. 	<p>Traditional stories and nursery rhymes</p> <ul style="list-style-type: none"> *Billy Goats Gruff *Gingerbread Man (making boats to cross the river) <p>Other texts</p> <ul style="list-style-type: none"> *Mr Gumpy's Outing by John Burningham *Mr Archimedes' Bath by Pamela Allen *Who sank the boat? by Pamela Allen *Stickman by Julia Donaldson *Flotsam by David Wiesner *Blown Away by Rob Biddulph
Memorable first hand experiences	Opportunities for communication
<ul style="list-style-type: none"> *Children to be visited by a builder or plumber. *Bring toys to school to share with others. 	<ul style="list-style-type: none"> *Children to be given opportunities for communication with partners, groups and whole class to discuss as completing practical activities and also to share

	findings. *Adults to model and encourage discussion during play. *Through the use of Explorify.
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Reasonable adjustments for pupils with SEND

<p style="text-align: center;">Communication and Interaction</p> <ul style="list-style-type: none"> *Visual aids, pictures of equipment with words labelled, word mats with pictures for key words in that lesson. *Freedom to explore scientific equipment and investigate in own way. *Hands on experiences to encourage communication and interaction with others. *Pre teaching any new vocabulary. 	<p style="text-align: center;">Cognition and Learning</p> <ul style="list-style-type: none"> *Opportunity for lots of hands on exploration and verbally sharing thoughts and ideas. *Freedom to explore scientific equipment and processes. *Pre teaching new vocabulary or concepts. *Activities adapted if needed for safety and ease. *Visual aids, pictures of equipment, mats with key words and pictures *Learning recorded through photos and adult quotes, children not expected to write for recording their understanding. *Using working walls to aid learning and remind of previous learning.
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Social, Emotional and Mental health

- *Awareness of individual needs, any potential triggers within the curriculum and the child's background.*
- *Pre prepare children for any activity they could find triggering or difficult in some way.*
- *Practical activities or experiments to be completed within a smaller group or 1:1 if needed.*
- *If the class are sharing their learning within a large group, take the child in a smaller focus group if they struggle with social situations.*
 - *Adjustments made where needed to suit individual.*

Sensory and Physical

- *Adult support with any practical activities.*
- *Awareness of the individual's likes or dislikes and their own reactions to sensory activities.*
- *If a child enjoys sensory activities, then plan for this wherever possible within the lesson.*