

## Medium Term Plan: Supporting Implementation of LTP/Progression Grid

<p>Subject: Science                      Year: Phase 1 year A – Energy Unit 1 of 6</p> <p>NC/PoS:</p> <p>Unit designed to introduce children to energy (electricity, light, sound, and forces) before studying national curriculum units in LKS2</p>
<p>Prior Learning (what pupils already know and can do)</p> <p>Children know that they can switch some things on/off. Know that a toy car is pushed to make it move. Know different animals make different sounds. Know lights are switched on and off in the house, school and outside.</p>
<p>End Goals (what pupils MUST know and remember)</p> <ul style="list-style-type: none"><li>• Know a force is a push or a pull</li><li>• Know that pushing or pulling things can make objects start or stop moving</li><li>• Know that a force can make things slow down or speed up.</li><li>• Know that sometimes pushes and pulls change the shape of objects</li><li>• Know that surfaces can change how something moves.</li><li>• Know that some toy cars need more or less force than others when rolling down a slope.</li><li>• Notice that some forces need contact between 2 objects.</li><li>• Know that some objects float and some can sink.</li><li>• Know that water acts as a force preventing some objects from sinking.</li></ul>
<p>Key Vocabulary: Float, sink, gravity, forces, Predict, water resistance, material</p>
<p>Session 1:</p> <p><u>L.O. To know that objects float or sink and that water acts as a force to stop something from sinking.</u></p> <p>Investigate different objects and observe them floating or sinking.</p> <p><b>Working Scientifically: Fair and comparative testing.</b> Children to test a number of materials to see if they float or sink. The children are to make predictions beforehand.</p> <p>Explain that water resistance is a force that causes some objects to float. Can they group these? Explain what a force is and that some forces need contact between two objects.</p> <p>Vocabulary: Predict, float, sink, water resistance, force</p>
<p>Session 2: Recap what is a force?</p> <p>Children to investigate a number of push and pull toys. Can they group them? How have they grouped them?</p> <p>Children are to know that a contact force is a push or a pull and know that pushing or pulling things can make objects start or stop moving.</p> <p>Discuss how forces are used in everyday life and as a class come up with some examples e.g. opening a door, pushing a light switch, riding a bike with pedals.</p> <p>Vocabulary: Push, pull, force</p>
<p>Session 3: Recap what is a force?</p> <p>What does a force do? Give examples of a contact force (pushes and pulls)</p>

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Children learn when an object moves on a surface, the texture of the surface and the object affect how it moves. Moving objects slow down quickly on rough surfaces and moving objects do not slow down much on smooth surfaces.

LO: To record and present results for an object moving across different surfaces

Using cars on ramps children measure the distance travelled and record results (table, bar graph) Children pick own 3 materials. Ensure take an average of 3 readings. Staff to model how to set up the experiment and then the children are given time to conduct the experiment independently.

### **Working Scientifically: Fair and comparative testing**

Vocabulary: push, pull, force, record, material, contact force.

Session 4: Recap: Can the children name 2 pull and 2 push forces that happen in real life?

L.O. Know that pushing an object can change its shape.

Children to investigate how pushing can change the shape of an object. The children are to use a range of malleable resources to support their understanding such as playdoh.

Children to investigate with a selection of resources which can and cannot be changed by using a push force. Can the children sort and group their resources?

### **Working Scientifically: Grouping**

Vocabulary: push, pull, force, record, material, contact force.

Link to career scientist:

Scientists who have helped develop understanding in this field: