

## Medium Term Science Planning

### Principles of Good Science Teaching and Learning

#### Science packs a punch - POW!

**Practical:** Exploring new ideas and concepts through a wide variety of fun, hands-on investigations that relate to the world around us.

**Open-minded:** Demonstrating the courage to ask questions that challenge our understanding of the world and being willing to take risks and suggest improvements when searching for the answers.

**Wonder:** Finding fascination in our learning in all its forms – different types of enquiry, outdoor learning, educational visits, visitors and home learning.

<b>Term:</b> Autumn 1	<b>Year group:</b> 5	<b>Topic:</b> Properties and Changes of Materials
<p><b>Key vocabulary:</b> hard, soft, stretchy, rigid, flexible, waterproof, absorbent, strong/weak, rough, smooth, reflective, non-reflective, transparent, opaque, translucent, solubility, electrical conductivity, thermal conductivity, melting, states of matter, solid, liquid, gas, change state, dissolve, solution, soluble, insoluble, solute, solvent, particle, mix/mixture, filtering, sieving, evaporating, residue, condensing, reversible changes, new material, not usually reversible, burning, gas given off, rusting</p>		

<b>Objective(s) (K &amp; WS)</b>	<b>Hook (talk task) &amp; Key Questions</b>	<b>Whole-class Input</b>	<b>Task / Enquiry (Activity)</b>	<b>Mini plenary</b>	<b>Outcomes: (Conclusion / Evaluation)  Next steps</b>	<b>Outdoor learning / Cross- curricular opportunities</b>
<p><i>Can I compare and group together everyday materials based on their properties?</i></p> <p><i>Enquiry Type: Grouping &amp; Classifying things</i></p>	<p><i>Can I use scientific vocabulary to explain my reasoning?</i></p> <p>Explorify Zoom In Zoom Out activity: Black Bobbles [link]</p> <p>What do you think the image is? Why do you think that? What does the image remind you of and why? Can you describe the colours, shapes and textures? What do you think the image is now – have you changed your mind?</p>	<p>Recap of key materials vocabulary using science display – discuss any misconceptions and KS1 vocabulary that they already know or are using</p> <p>Feely bag activity: CT to model selecting an object and asking children to use their materials vocabulary to ask yes/no questions to identify the material; e.g. Is it smooth? Is it flexible?</p>	<p>Children work in mixed ability groups with the feely bag activity – each child taking a turn</p> <p>CT and TA to monitor questioning and correct use of vocabulary</p> <p>CT to pick out excellent examples of vocabulary being used to share with the whole class</p>	<p>Why aren't we interested in the name of the object you are describing?</p> <p>Introduce the term 'compare' and lead a whole-class discussion of the similarities and differences between two materials (e.g. rubber and stone)</p> <p>Groups continue with their bag of objects, but now focussing to picking out two materials to compare together</p>	<p>Using the describing and comparing activities they have done, ask the groups to come up with their own system for grouping the materials.</p> <p>Discuss possible options after 3 minutes</p> <p>Give them sugar paper, pens, post-it notes and any suitable resources they ask for.</p>	<p>Ask children to find some examples of different materials in the playground / outside school to bring into class for our display.</p> <p>DT link: design a bridge choosing materials based on their properties</p>