

Our Curriculum Key Drivers - Flourishing for All, Diversity and Challenge

L	Learning Objective	Connect knowledge (Super 6)	Key Teacher subject knowledge	Substantive knowledge	Disciplinary knowledge	Apply (lesson - planned in phases)	Key Vocabulary	Outcome of Lesson
1	To understand what waterproof means and to test whether materials are waterproof.	N/A	<p>Waterproof material: a material that does not let water pass through. Make sure you cut each material so that it fully lines the base of your sieve and protrudes above the edge (so that no water can leak through the gaps). Each material must be cut to the same size for a fair test.</p> <p>Use the blank worksheet (<i>Activity: Blank testing materials</i>) if you would like to select your own materials or if you have more able pupils that can write in the material names using their phonic knowledge.</p>	<p>To know that 'waterproof' materials are those which do not absorb water.</p> <p>Communication and language Articulate their ideas and thoughts in well-formed sentences. Connect one idea or action to another using a range of connectives. Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.</p> <p>ELG: Speaking: Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary ELG: Speaking: Offer explanations for why things might happen. Understanding the world Explore the natural world around them. ELG: The Natural World: Explore the natural world around them, making observations and drawing pictures of animals and plants</p>	Making predictions about, and evaluating different materials to see if they are waterproof.	Lesson One	<p>waterproof material absorb leak wet dry prediction variable fair test experiment investigation</p>	<p><i>Can the pupils articulate their thoughts, making predictions and observations?</i> <i>Do the pupils work together to explore the materials' properties?</i></p>
2	To test and make predictions for which materials float or sink.	Lesson One	<p>Gather the objects that you are going to test on a tray before the lesson.</p> <p>If you would like the whole class to complete the experiment at the same time, you will need to create separate testing stations for each small group, consisting of a tray filled with water, the objects to test, the <i>Activity: Floating and sinking</i> to record findings and pencils.</p> <p>Alternatively, you may prefer to invite individual groups to the class water tray in your continuous provision throughout the session.</p>	<p>To know that some objects float and others sink.</p> <p>communication and language</p> <p>Articulate their ideas and thoughts in well-formed sentences. Connect one idea or action to another using a range of connectives. Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. ELG: Speaking: Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary ELG: Speaking: Offer explanations for why things might happen. Understanding the world</p> <p>Explore the natural world around them. ELG: The Natural World: Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	Making predictions about, and evaluating existing boats to see which floats best.	Lesson Two	<p>prediction variable fair test experiment investigation float sink</p>	<p><i>Can the pupils articulate their thoughts, making predictions and observations?</i> <i>Do the pupils work together to explore whether the objects float or sink?</i></p>

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3	To compare the uses of boats.	Lesson Two	<p>The history of boats and ships The first boats were believed to have been built over 6000 years ago by the ancient Egyptians. They were made from reeds. Around 3000 years ago, the Chinese people started to build ships (big boats) called Junks. Junks were used for transport and fighting. They were the first boats or ships to have a rudder for steering and waterproof compartments for storing things. Pirate ships Around 350 years ago, pirates started to rule the seas. They used boats to chase other ships, capture their crew and steal their cargo. Pirates would use any watercraft they could get their hands on. They often used very small boats like rafts or canoes when they couldn't get a larger ship. The Queen Mary 2 The Queen Mary 2 is an ocean liner, the only one still in service, that runs from the United Kingdom to the United States of America. She is also used for cruises and was designed by a team of British Naval architects led by Stephen Payne.</p>	<p>To know the different parts of a boat. Communication and language Articulate their ideas and thoughts in well-formed sentences. Connect one idea or action to another using a range of connectives. Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. ELG: Speaking: Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary ELG: Speaking: Offer explanations for why things might happen.</p>	NA	Lesson Three	<p>boat cruise ship fishing boat kayak ocean liner pirate ship ship watercraft waterproof</p>	<p><i>Can the pupils participate in the class and one-to-one discussions, offering their own ideas and use recently introduced vocabulary? Can the pupils offer explanations as to how different types of boats are used?</i></p>
4	To investigate how the shape and structure of boats affects the way they move.	Lesson Three		<p>Using knowledge from exploration to inform design. To know the different parts of a boat. Communication and language Articulate their ideas and thoughts in well-formed sentences. Connect one idea or action to another using a range of connectives. Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. ELG: Speaking: Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary ELG: Speaking: Offer explanations for why things might happen.</p>	<p>Investigating the how the shapes and structure of a boat affect the way it moves. Making predictions about, and evaluating existing boats to see which floats best.</p>	Lesson Four	<p>sail anchor hull mast rudder helm poop deck deck crow's nest boat</p>	<p><i>Can the pupils participate in the class and one-to-one discussions, offering their own ideas and use recently introduced vocabulary? Can the pupils offer explanations as to why certain containers are better at floating or moving across the water?</i></p>

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5	To design a boat.	Lesson Four	<p>Supporting prompts: "Which is the best waterproof material?" "I wonder how you will join those parts together?" "How could you make sure your boat floats?" "Can you tell me about your design?"</p> <p>Make sure you keep the designs so that pupils can refer back to them in the next lesson.</p>	<p>Designing a junk model boat. Using knowledge from exploration to inform design.</p> <p>Expressive arts and design</p> <p>Explore, use and refine a variety of artistic effects to express their ideas and feelings. ELG: Creating with materials: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p>	NA	Lesson Five	<p>sail anchor hull mast rudder helm poop deck deck crow's nest boat</p>	<p><i>Do the pupils create a simple design with thought about the materials they will have available to them?</i> <i>Do the pupils refer back to their previous learning to help them make decisions about their design?</i></p>
6	To create a boat based upon their own design.	Lesson 5	<p>Before the lesson, make sure you have looked at each pupils' design so that you can ensure you have the correct materials and resources to hand.</p> <p>Work in smaller groups if you feel that pupils will need additional support in creating their boat.</p> <p>Why not take a class trip to a local pond or boating lake to test the boats out on the 'open' water? .</p>	<p>Making a boat that floats and is waterproof, considering material choices.</p> <p>Expressive arts and design</p> <p>Explore, use and refine a variety of artistic effects to express their ideas and feelings.</p> <p>ELG: Creating with materials: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. ELG: Creating with materials: Share their creations, explaining the process they have used.</p>	<p>Testing their design and reflecting on what could have been done differently. Investigating the how the shapes and structure of a boat affect the way it moves.</p>	Lesson Six	<p>Ship watercraft junk reeds waterproof float sink types of boats and ships e.g. fishing boat, canoe, cruise ship</p>	<p><i>Can the pupils identify problems and suggest ways to solve them as they arise?</i> <i>Do the pupils refer back to their previous learning to help them make decisions about how to join and manipulate materials?</i> <i>Can the pupils verbally evaluate their final product?</i></p>