



MATERIAL FOR A LIFEJACKET



Equipment:	Plasticine, various materials for making a lifejacket , e.g. cork, sponge, cotton wool, polystyrene, newspaper, bottle caps, balloons, swimming armbands or aerobands.	
Suggested Class Level:	Younger classes	
Preparation:	<p>A previous class on 'Sinking and Floating' would be useful: the children feeling the up thrust of the water as they try to push, say, a balloon under the water; and balancing this up thrust force with the force of gravity pulling downwards.</p> <p>They should also investigate various objects in water, i.e. predict and test whether they sink or float.</p>	
Background information:	<p>Things that are lighter than water (<i>i.e. lower density</i>) float, and things that are heavier than water (<i>i.e. denser</i>) sink.</p> <p>(Avoid using the term 'density' with primary children).</p> <p>Heavier things can be made to float in different ways, e.g.</p> <ol style="list-style-type: none"> 1) By changing their shape, if this is possible (<i>e.g. by hollowing out plasticine</i>) 2) By attaching some very light stuff to them so that they are now 'light for their size' (<i>e.g. swimming armbands and lifejackets increase the size – person + bands/jacket – but with very little increase in weight</i>). 	
Trigger questions:	<p>What do you think will happen to a ball of plasticine if you put it in water – will it sink or float? How do you think you could make it float? (<i>The children may suggest hollowing it out (see 'Design a Boat' in DPS Activity sheets)</i>).</p> <p>The children should then be asked to shape the plasticine into a person and then asked the same questions.</p> <p>What happens when you jump into deep water – sink or float? How can you stay on the surface? (<i>Swim, float, or use air-filled armbands, aero board or lifejacket</i>)</p> <p>What should you wear when you go out in a boat? (<i>A lifejacket</i>).</p> <p>What sort of material do you think lifejackets should be made of? (<i>The children may suggest light materials that do not absorb water which would make them heavier</i>).</p> <p>(<i>Have various things on hand to show the children at this stage, e.g. balloons, armbands, cotton wool, newspaper, cork, etc.</i>)</p>	
Content:	<p>SCIENCE: Forces: Sinking and floating Materials – Properties and Characteristics</p> <p>MATHS: Measures: Weight, capacity</p>	



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Skills:	Exploring, planning, making, evaluating.
Cross-curricular Links:	SPHE – Safety in the water. Most clothes and shoes absorb water and make you heavier and sink. So it is important to remove your shoes and most clothes if you fall into the water accidentally.
Activity:	<p>1. The children should be asked “Can you make their piece of plasticine into the shape of a person?”</p> <p>2. They should then be shown the various materials and asked “Can you say which of these do you think would make the best life jacket?” “Why do you think that?”</p> <p>3. They are then asked to find a way of attaching the material to the ‘person’.</p> <p>4. They then test the different materials to see which of them helps the ‘person’ to float the best.</p> <p>5. Can they put the materials in any order? If so, what factors are they using to do this (i.e. <i>why are they putting them in this order?</i>).</p> <p>“Which material would make the best lifejacket?” “Which material would make the worst lifejacket?”</p> <p>6. Can they make it as fair a test as possible? Evaluation: Ask the children: “How did your design work?” “If you were doing it again would you do it differently?”</p> <p>N.B.</p> <p>1. This activity can also be done using a small plastic figure such as a Lego man instead of plasticine. It would save time making the figure.</p> <p>2. It may be difficult to get the figure to float with the face up. Just getting the model to float, even if face downward, may have to be accepted!</p> <p>MATHS: To introduce Maths into this activity, the children could :</p> <p>(i) During the preparation work: put the various items (cork, sponge, cotton wool, newspaper, etc. on a balancing scales and compare them to see which is the lightest and which is the heaviest; (<i>Weight</i>)</p> <p>(ii) Measure the water which they put into the container, e.g. “we need to put ten cups of water into the plastic container before we start.” (<i>Capacity</i>).</p>
Safety:	
Follow-up activity:	<p>If children have been learning to swim can they find out what helped them to float during their first lessons, i.e. what were their armbands, boards or whatever they used, made of?</p>

