

# Oil and Soap Experiment

<b>1</b>	<b>Overall aims:</b> <ul style="list-style-type: none"> <li>• Understand how oil spills affect wildlife.</li> <li>• Demonstrate the process of emulsification.</li> <li>• Understand why water alone don't remove oil from a bird's feathers.</li> <li>• Develop the ability to observe.</li> <li>• Make and test hypotheses.</li> </ul>
<b>2</b>	<b>Vocabulary - keywords</b> Oil, soap, petroleum, process of emulsification, emulsifying agent
<b>3</b>	<b>Sustainable abilities developed</b> <ul style="list-style-type: none"> <li>• Respect the environment.</li> <li>• Engaging with nature.</li> <li>• Strengthen the relationship with the environment, with resources and with the natural and diversities of the environment.</li> <li>• Emphasize with nature.</li> </ul>
<b>4</b>	<b>Pillars of sustainability included</b> <ul style="list-style-type: none"> <li>• Environmental sustainability</li> </ul>
<b>5</b>	<b>STEAM domains</b> <ul style="list-style-type: none"> <li>• Thoughtful thinking</li> <li>• Learning to learn</li> <li>• Initiative and autonomous thinking</li> <li>• Self-directed learning</li> </ul>
<b>6</b>	<b>Teaching methodologies/activity outline</b> <ul style="list-style-type: none"> <li>• Fill the bottle about halfway with water. Add about 1 tbsp. of cooking oil and observe. Because water is denser than oil, the liquids will separate and the oil will rise to the top. Add a few drops of natural food coloring and observe what happens.</li> <li>• Next, add 2 tsp. of dish soap, which acts as an emulsifier by breaking the oil down and allowing it to mix with the water. Notice how the food coloring tints the water to a uniform color and the oil no longer rises to the top.</li> </ul>





<b>7</b>	<b>Expected learning outcomes</b> <b>The child will be able to:</b> <ul style="list-style-type: none"> <li>• Follow instructions.</li> <li>• Learn the process of emulsification.</li> <li>• Understand why water alone don't remove oil from a bird's feathers.</li> </ul>
<b>8</b>	<b>Assessment</b> Assessing what pupils are learning during the activity.
<b>9</b>	<b>Equipment and materials to be used in learning unit (tools, ingredients etc)</b> <ul style="list-style-type: none"> <li>• An empty plastic bottle</li> <li>• Cooking oil</li> <li>• Natural food coloring</li> <li>• Dish soap</li> </ul>
<b>10</b>	<b>Kind of setting - lab, kitchen, outdoor etc.</b> Kitchen.
<b>11</b>	<b>References - source:</b> <a href="https://www.tomsofmaine.com/good-matters/thinking-sustainably/4-cool-science-experiments-for-kids-that-teach-sustainability">https://www.tomsofmaine.com/good-matters/thinking-sustainably/4-cool-science-experiments-for-kids-that-teach-sustainability</a>

