



## Elm, Maple, Walnut Shake It

| Lesson            | IPC Learning Goal | NC Coverage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Activities | Resources /<br>Vocabulary /<br>Personal Goals |
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| Entry Point       |                   | <p><b>WALT</b> know what a solid, liquid and gas is.</p> <p>Ask 'What are the 3 states of matter?' Discuss</p> <ul style="list-style-type: none"> <li>• Solid</li> <li>• Liquid</li> <li>• Gas</li> </ul> <p><a href="https://www.bbc.com/bitesize/articles/zsgwwxs">https://www.bbc.com/bitesize/articles/zsgwwxs</a></p> <p>Discuss</p> <p><b>Vocabulary</b><br/>           Gas<br/>           Solid<br/>           Liquid<br/>           Molecules</p> <p><b>Activity 1</b><br/> <b>LA</b> - The children will sort the statements out into Solids, Liquids and Gases. They will glue them on to large sheets of paper headed with Gases, Solids and Liquids.</p> <p><b>HA/MA</b> - The children will write about Gases, Liquids and Solids using the information given.</p> <p><b>Activity 2</b><br/>           Sort pictures into Solids, Gases, Liquids<br/>           Ensure children can name and explain the 3 states of matter and give examples.</p> |            |                                               |
| Knowledge Harvest |                   | <p>How are liquids different from solids and gases?</p> <p><b>Activity 1</b><br/>           Show a carton of milk.<br/>           On large sheets of paper write down everything you know about milk.<br/>           Is milk a solid or a liquid?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                                               |

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|             | <p>Where does milk come from?</p> <p>What does milk contain?</p> <p>How healthy is milk?</p> <p><b>Activity 2</b></p> <p>Write a list of foods that are made from milk.</p> <p>On post it notes write 1 question you want to find out about for this topic.</p> |
| Big Picture | We are going to find out all about solids, liquids and gases by making butter and cheese, and milkshakes.                                                                                                                                                       |

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| <b>Science</b> |  |  | <p><b>WALT gather information from simple texts</b></p> <p>Refer to the Knowledge Harvest.</p> <p>What do we know about milk?</p> <p>What questions could we ask?</p> <p>What could our sub headings be?</p> <p><i>Discuss allergies and lactose intolerance.</i></p> <p>Using the internet write information about milk.</p> <p><b>LA</b> - to write bullet points</p> <p><b>EXTENSION</b></p> <p>Design a 'Marvellous Milk' poster or leaflet, explaining what milk contains and why milk is good for us.</p> <p>Share the posters.</p> <p>Choose some for display.</p> |  |
| <b>Science</b> |  |  | <p><b>WALT carry out simple investigations</b></p> <p>How can we get from milk (which is a liquid) to butter (which is a solid)?</p> <p>How can we make butter from milk?</p> <p>Discuss</p> <p>Look at cream. What is it made from? Is it a liquid, gas or solid?</p>                                                                                                                                                                                                                                                                                                    |  |

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|         |  |  | <p>How can we make butter from milk?<br/>Each group will explore how to make butter from milk.</p> <ul style="list-style-type: none"> <li>Putting some cream in a screw-top jar and shaking it vigorously</li> <li>Putting some cream in a bowl and whisking it vigorously with a hand whisk</li> </ul> <p>What do you notice?<br/>The children will write up what they did and use diagrams to show it.</p> <p><b>Mini Plenaries</b><br/>Explore what is happening</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| Science |  |  | <p><b>WALT use simple scientific equipment</b></p> <p>Recap on the last lesson and how we changed a liquid (cream) into a solid (butter).<br/>Do you think we change a solid into a liquid?<br/>Discuss<br/>Put butter in different places, ie, radiator, window sill, microwave, oven, etc. What happens? Why?<br/>Measure the temperatures.<br/>Record what happens to the solid.<br/>The children could research the temperature at which materials change state when they are heated or cooled in degrees Celsius. The teacher could use a cooking thermometer to demonstrate the temperature at which water boils (100 °C). The children could measure the temperature at which water freezes (0 °C). You could then compare this with another liquid.<br/>E.g. will vegetable oil boil at a higher or lower temperature than water? Vegetable oil boils at 200-300 °C. Will vegetable oil freeze? The children could experiment to find out. Even rock will melt if the temperature is high enough! Lava from a volcano is 1,000 °C. Melting iron is 1,500 °C. The Earth's core is 5,000 °C!<br/>The children should also observe how solid butter behaves differently from melted butter.<br/>Solid butter keeps its shape whereas melted butter (a liquid) will take the shape of the container it is in.</p> |  |

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| Science |  |  | <p><b>WALT: Investigate reversible and irreversible changes</b></p> <p>The children will be investigating irreversible changes - these are chemical changes that cannot be reversed.</p> <p>Refer to the Journey of Milk display - what is the next stage on from cream and butter? Is it cheese? How might we get to this next stage? Invite suggestions from the class. Stimulate their thinking by comparing the properties of butter and cheese. How are they different/similar?</p> <p>We've seen that we can make butter from milk, but how can we make cheese? For example:</p> <ul style="list-style-type: none"> <li>• Mixing milk with a little vinegar or lemon juice</li> <li>• Heating milk and then leaving it to turn sour</li> <li>• Heating milk and then mixing with yeast or baking powder</li> </ul> <p>See p29 &amp; 30 on the curriculum plan</p> |  |
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