













# Properties and Changes of Materials: Dissolving

<p><b>Aim:</b> To know that some materials will dissolve in liquid to form a solution by investigating dissolving. To compare and group together everyday materials on the basis of their solubility by investigating dissolving I can investigate materials which will dissolve.</p>	<p><b>Success Criteria:</b> I can describe dissolving. I can explain the difference between melting and dissolving. I can identify materials which will dissolve in water. I can investigate factors which affect the speed of dissolving.</p>	<p><b>Resources:</b> <b>Lesson Pack</b> Materials to dissolve: sand, chalk, flour, rice, instant coffee granules, sugar, salt, gravy. Differently shaped / sized beakers; Different types of water (sparkling, flavoured, still); Teaspoons; Stopwatches; Weighing scales; Thermometers; Different temperatures of water (cold, room temperature and approximately 40°C , but not higher than 45°C).</p>
<p><b>Key/New Words:</b> Dissolve, soluble, insoluble, liquid, solid.</p>	<p><b>Preparation:</b> <b>Soluble or Insoluble Activity Sheet</b> per pair. Differentiated <b>Dissolving Investigation Activity Booklet</b> as required. <b>Temperature Dissolving Investigation Activity Sheet</b> as required.</p>	

**Prior Learning:** The children will have learnt about solids and liquids in Year 4.

## Learning Sequence

	<p><b>Disappearing Act:</b> Ask the children to discuss the ideas about dissolving on the <b>Lesson Presentation</b>. Reveal the answer and explain dissolving using the information on the <b>Lesson Presentation</b>.</p>	
	<p><b>Dissolving or Melting?</b> Explain the difference between dissolving and melting. These processes are commonly confused by children. Address any misconceptions.</p>	
	<p><b>Soluble or Insoluble?</b> Ask the children to test whether different materials are soluble or insoluble in water by following the instructions on the <b>Lesson Presentation</b>. They should complete the table on their <b>Soluble or Insoluble Activity Sheet</b> with their findings.</p>	
	<p><b>Investigating Dissolving:</b> Ask the children to discuss possible variables that may affect dissolving. Reveal the suggestions on the <b>Lesson Presentation</b> and ensure children understand each one. Ask the children to work in pairs to choose an independent variable and dependent variable to investigate. They should complete their differentiated <b>Dissolving Investigation Activity Booklet</b> to plan their investigations. <b>Look for children who can successfully identify the variable in their dissolving investigation.</b></p> <p>★ Use the <b>Temperature Dissolving Investigation Activity Sheet</b> to scaffold their investigation.</p>	
	<p><b>Find the Answer:</b> The children should carry out their investigations in pairs. They should record their results in a bar chart on the axes provided on their differentiated <b>Dissolving Investigation Activity Booklet</b>, and make a conclusion based on their results. <b>Look for children who can identify the factors that affect dissolving.</b></p> <p>★ Use labelled axes for their bar chart on their <b>Temperature Dissolving Investigation Activity Sheet.</b></p> <p>★★★ Explain their conclusion.</p>	
	<p><b>Share Your Findings:</b> Organise the children so that they can share their results with those who did different investigations, and then those who did the same investigation. Ask them to compare their findings and discuss whether they agree or disagree.</p>	

## Taskit

**Makeit:** Why not grow your own salt crystals? Fill a jar with water and dissolve salt in it until it becomes saturated. Mix this solution with a spoon. Cut a length of string and tie each end to a craft stick. Dangle the middle of the string into the beaker of water and salt, while the craft sticks hang over the outside edge of the beaker. Leave this set up for 2-3 days. The string should be covered with salt crystals!

**Investigateit:** Find out about saturation by following the instructions on [this Activity Sheet](#).