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<p>Aim: To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating by separating different mixtures. To demonstrate that dissolving, mixing and changes of state are reversible changes by separating different mixtures. To describe how to recover a substance from a solution by separating different mixtures. I can use different processes to separate mixtures of materials.</p>	<p>Success Criteria: I can identify different ways materials can be mixed together. I can use sieving, filtering, evaporating and other processes to separate mixtures of materials. I know when to use which processes to separate mixtures.</p>	<p>Resources: Lesson Pack Play sand Table salt Water Raisins, flour and rice Paper clips Either a pan and a heat source to boil the water, or containers and a safe place to leave them when filled with water; Magnets. Funnels, filter paper, sieve, bowls.</p>
	<p>Key/New Words: Separate, mixture, solution, suspension, soluble, insoluble, dissolve, evaporate, solid, liquid, filter, sieve, magnet, attract, particles.</p>	<p>Preparation: Separating Mixtures Explanations Activity Sheet stuck up around the classroom. Separating Mixtures Activity Sheet per child.</p>

Prior Learning: The children will have learnt about magnets in Year 3, and solids, liquids and evaporation in Year 4. They will have learnt about dissolving in Lesson 4 of this unit.

Learning Sequence

	<p>Supermarket Chaos! Use the Lesson Presentation to explain the context of the lesson: various goods from a supermarket have been mixed up and the children need to separate them.</p>	
	<p>Mixed Materials: Describe the four different mixtures using the Lesson Presentation. Ask the children to talk to their partner about how the materials have been mixed and how they could separate them. They should use the descriptions of the different types of mixtures on the Lesson Presentation and match them to the images.</p>	
	<p>Separating Processes: Ask the children to move around the classroom to read each of the Separating Mixtures Explanations Activity Sheet. They should place a tally on the tally chart under each explanation to show which mixture that process would be best suited to. Explain the different processes and how they work with the different mixtures using the information on the Lesson Presentation.</p>	
	<p>Separate the Mixtures: Organise the children into 4 approximately even groups. Ask them to move around the classroom in their groups to try to separate each of the mixtures using the processes described. They should complete their Separating Mixtures Activity Sheet as they work round. An adult should lead the 'Evaporation' activity if you choose to boil the salt water solution for immediate effects, rather than leave it for several days for the water to evaporate. Look for children who understand how to use the different processes to separate mixtures, and who can explain which process is suitable for each different mixture.</p> <p>  Choose from the list of processes and draw a diagram.  Complete the sentences to show the processes. Explain each process.  Explain each process and why it is the most suitable choice for each mixture. </p>	
	<p>A Message from the Manager: Show the children the message of thanks from the supermarket manager on the Lesson Presentation. Share the manager's final challenge: separating sand, salt and water. Ask the children to talk in pairs about how they could separate this mixture. Encourage them to think of the processes they have used today. They could filter the mixture to separate the sand, then evaporate the water to leave the salt behind.</p>	

<p>Taskit</p> <p>Matchit: Match the mixtures to the processes used to separate them using this sheet.</p> <p>Exploreit: Find out about chromatography. Use this process to separate the different dyes that make up different colours of ink in felt pens. Draw a line of each colour about 2cm up on strips of filter paper. Suspend the strips over water so that the very edge of the filter paper touches the water. Watch the inks separate into their component dyes.</p> <p>Exploreit: Make a poster about the different processes that can be used to separate mixtures. Add examples of mixtures that could be separated by each process.</p>
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