

Nova's Laboratory: Separating Mixtures

Learning objective: To understand how to separate mixtures of solids and liquids using techniques such as sieving, filtering, and evaporating.

Nova the owl has been experimenting in her laboratory! She has accidentally mixed up several materials. Help her sort them out by choosing the best separation method for each situation. Write the correct method from the word bank next to the description of the mixture. Then, explain why your chosen method would work.

Word bank: Sieving · Filtering · Evaporation · Magnetism

1. Nova has a bowl containing a mixture of sand and small pebbles. Which method should she use to separate the pebbles from the sand, and why? (2 marks)

2. Nova has mixed salt into a beaker of water. Which method is best to get the salt back, and what happens to the water during this process? (2 marks)

3. Nova accidentally dropped iron paperclips into a pile of sawdust. Which method should she use to pick out the paperclips quickly? (2 marks)

4. Nova has a mixture of muddy water (water and soil). Which method would be best to trap the soil particles while letting the water pass through? (2 marks)

5. If Nova had a mixture of flour and rice, why would sieving work better than filtering? (2 marks)

Draw: Draw a diagram of a filter funnel being used to separate a mixture of sand and water. Label the 'filter paper', the 'residue', and the 'filtrate'.



Extension challenge: Imagine you are helping Nova plan a party. If you had a mixture of sugar and water (a solution) and you wanted to recover the sugar crystals to decorate a cake, describe the steps you would take to ensure the water is removed safely.