

Topic	Why do ionic substances dissolve?	Level	A Level
Outcomes	1. To carry out a practical to consider why ionic substances dissolve in water in terms of entropy and enthalpy changes		

Thinking task: why do substances dissolve?

1. Describe the appearance of the white solid, NaCl. What type of substance is it?
2. Put approx. 40 cm³ of water into a small beaker. Describe what you observe after you add two spatulas of NaCl to water and stir. Monitor the temperature change using a thermometer.
3. Was the reaction exothermic or endothermic? Is it a large or a small value?
4. Write an equation to summarise what happens when you add solid NaCl to water.
5. Draw a quick diagram to show what happens at the molecular level when you add solid NaCl to water. Think about the steps involved in forming a solution.
6. Is NaCl dissolving a spontaneous change? How do you know?
7. What happens to the entropy of the system in this reaction?