

Mixtures, solutions and dissolving

Grade 6 science (Year 7 · Class 6) · Test

Name: _____ Date: _____ Class: _____ Mark: ____ / 20

This test checks your understanding of mixtures, solutions, saturation and solubility graphs. Read each question carefully and show your working in the calculations. Write full sentences for the explanations. You have 45 minutes and the total is 20 marks.

Level: Grade 6 science (Year 7 · Class 6) · **Curriculum:** MS-PS1-2

Time: 45 minutes · 8 questions · Total: 20 marks · Calculator allowed

Question 1 Homogeneous or heterogeneous (2 marks)

- State whether lemonade is homogeneous or heterogeneous. (1 mark)
- State whether a mixture of sand and water is homogeneous or heterogeneous. (1 mark)

Question 2 Key words (3 marks)

Define each term:

- solute, (1 mark)
- solvent, (1 mark)
- solution. (1 mark)

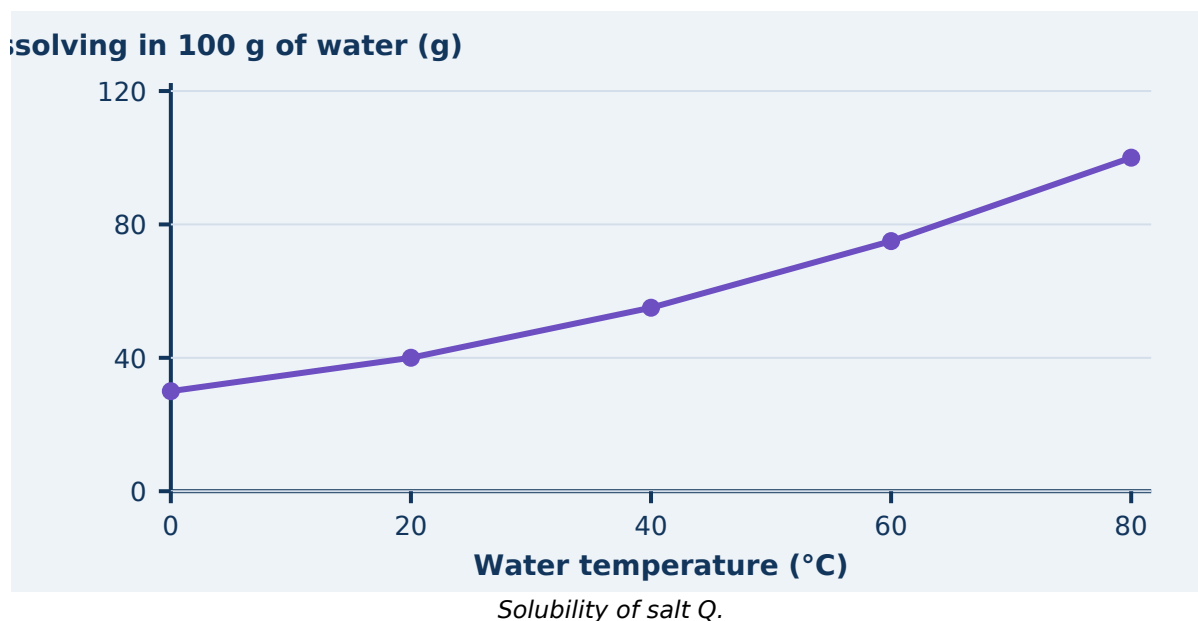
Question 3 Coffee in a mug (3 marks)

Mina in Seoul dissolves 8 g of instant coffee in 192 g of hot water.

- Calculate the mass of the solution. (1 mark)
- She pours 50 g of the drink into a cup. Calculate the mass of coffee in this 50 g. (1 mark)
- All the water in the mug evaporates. State the mass of solid left. (1 mark)

Question 4 Saturation (2 marks)

Explain what is meant by a saturated solution, and say what you would see if you added more solute. (2 marks)

Question 5 Solubility of salt Q (3 marks)

- Read the mass of Q that dissolves in 100 g of water at 40 °C. (1 mark)
- Calculate the most Q that dissolves in 200 g of water at 80 °C. (1 mark)
- Describe how the solubility changes as the temperature rises. (1 mark)

Question 6 Speed of dissolving (3 marks)

Explain why sugar dissolves faster in hot tea than in cold tea, using the idea of particles. (3 marks)

Question 7 Correct the calculation (2 marks)

A student dissolves 50 g of salt in 200 g of water and writes: "The solution has a mass of 200 g because salt disappears."

Correct the student. (2 marks)

Question 8 Sea water (2 marks)

Give two reasons why sea water is a mixture and not a pure substance. (2 marks)