CC1 States of Matter

Topic Progression Checklist

I know this → colour green	I'm not sure → colour yellow	I don't know this → colour red

Subtopics and Learning Objectives	Start	End
CC1a States of Matter		
Name the three states of matter, and the physical changes that occur between them.		
Describe the arrangements and movement of particles in the different states of matter.		
Use information to predict the state of a substance.		
Describe the relative energies of particles in the different states of matter.		
Explain why the movement and arrangement of particles change during changes of state.		
Explain why the energy of particles changes during changes of state.		

CC2 Methods of Separating and Purifying Substances

Topic Progression Checklist

I know this → colour green	I'm not sure → colour yellow	I don't know this → colour red

Subtopics and Learning Objectives	Start	End
CC2a Mixtures		
Describe the differences between a pure substance and a mixture.		
Use melting point information to decide whether a substance is pure or is a mixture.		
Describe what happens to atoms at a pure substance's melting point.		
Interpret a heating curve to identify a melting point.		
Explain why the temperature does not change as a pure substance melts.		
CC2b Filtration and Crystallisation		
State some mixtures that can be separated by filtration.		
State some mixtures that can be separated by crystallisation.		
Draw and interpret diagrams showing how filtration and crystallisation are done.		
Explain the formation of crystals during crystallisation.		
Explain how mixtures are separated by filtration.		

Explain ways of reducing risk when separating mixtures by filtration and crystallisation.		
CC2c Paper Chromatography		
Describe how some mixtures can be separated by chromatography.		
Identify pure substances and mixtures on chromatograms.		
Identify substances that are identical on chromatograms.		
Draw and interpret diagrams showing how chromatography is done.		
Explain how substances can be separated by chromatography.		
Calculate R_f values and use them to identify substances.		
CC2d Distillation		
Describe how to carry out, and explain what happens in, simple distillation.		
Distinguish between simple distillation and fractional distillation.		
Identify when fractional distillation should be used to separate a mixture.		
Describe how to carry out fractional distillation.		
Explain how the products of fractional distillation are linked to the boiling points of the components.		
Explain what precautions are needed to reduce risk in a distillation experiment.		
CC2e Drinking Water		
Explain why water used in chemical analysis must not contain dissolved salts.		
Describe how fresh water can be produced from seawater.		
Describe the steps needed to make fresh water suitable for drinking.		
Suggest how to purify water when you know what it contains.		
Evaluate the hazards and control the risks present when purifying water.		