Key ideas: Chemical analysis

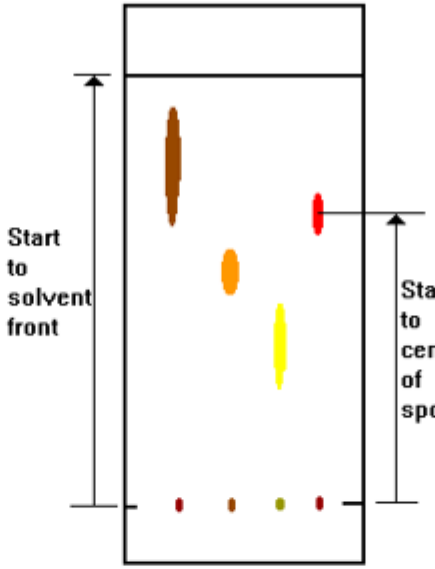
1. What is a pure substance in science terms?

2. What is a mixture?

3. How can you distinguish between a pure substance and a mixture?

4. What is a formulation?

5. Examples of a formulation?



Calculate the Rf values of each spot using a ruler

- 1:
- 2:
- 3:
- 4:

What chromatography be used for?

Complete the table to summarise the tests for each gas:

	Test for the gas
Hydrogen H_2	
Oxygen O_2	
Carbon dioxide CO_2	
Chlorine Cl_2	

Chromatography

1. Draw a labelled diagram to show how you would set up a paper chromatography experiment

2. Complete these sentences about chromatography:
- The _____ phase doesn't move
- The _____ phase does move
- In paper chromatography, the _____ is the stationary phase and the _____ is the mobile phase

3. How do you calculate Rf values?

Key ideas: Chemical analysis

Explain how you would carry out a flame test to identify metal ions in a compound

Complete the table to show the colours of the ions below during a flame test

Metal Ion	Colour of flame
Lithium (Li^+)	
Sodium (Na^+)	
Potassium (K^+)	
Calcium (Ca^{2+})	
Copper (Cu^{2+})	

Explain how you would carry out a test to show the metals present in metal hydroxides

Complete the table below to show the results when metal hydroxides are tested

Testing for Positive Ions	Colour of precipitate	Does it dissolve in excess NaOH?
Magnesium (Mg^{2+})		
Calcium (Ca^{2+})		
Aluminium (Al^{3+})		
Iron (Fe^2)		
Iron (Fe^{3+})		
Copper (Cu^{2+})		

Key ideas: Chemical analysis

Explain how you would carry out a chemical test to identify halide ions in solution

Complete the table to show the results of chemical tests to identify halide ions in solution

Halide Ion	Colour of precipitate
Chloride (Cl^-)	
Bromide (Br^-)	
Iodide (I^-)	

Write equations for each reaction

Explain how you would carry out a chemical test to identify carbonate ions in solution

Explain how you would carry out a chemical test to identify sulfate ions in solution

Key ideas: Chemical analysis

Give 3 advantages of using instrumental methods over test tube reactions

Give 3 disaadvantages of using instrumental methods over test tube reactions

Explain how flame emission spectroscopy works