Park Academy West London
an Aspirations Academy

Year 8 Home learning booklet

C2.2 – Separation Techniques

P2.2 - Energy

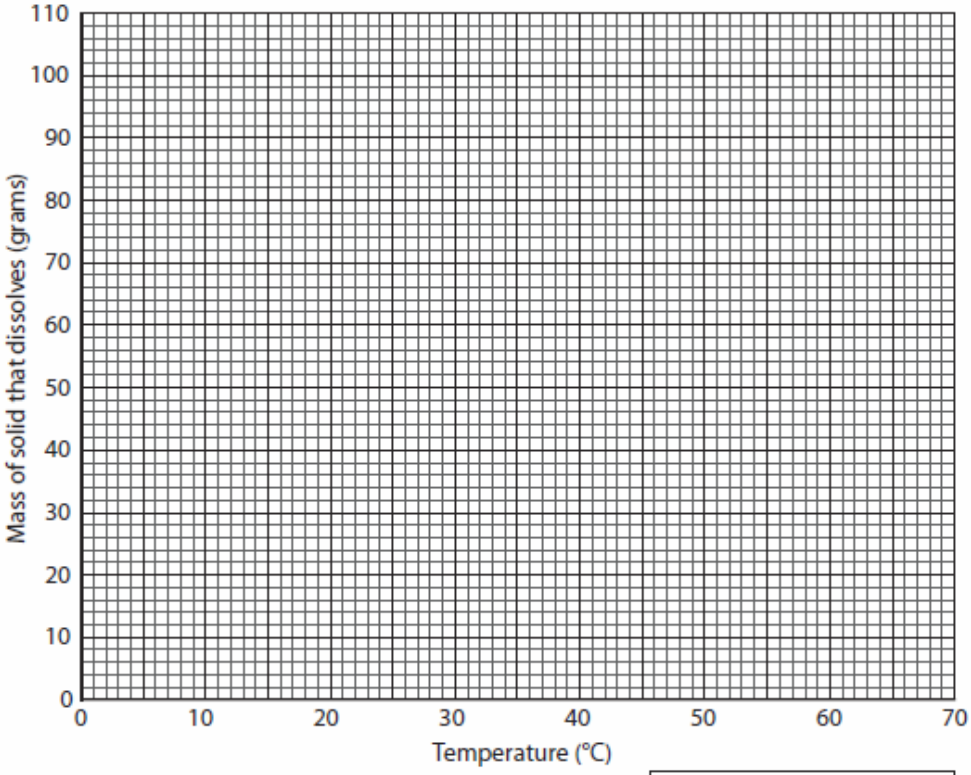
Home learning 1 – Solubility

The table shows how much potassium nitrate and potassium chloride dissolve in water at different temperatures. The numbers tell you how many grams of solute dissolve in 100 cm^3 water.

Temperature (°C)	Solubility of potassium nitrate	Solubility of potassium chloride
10	20	32
20	30	35
30	44	36
40	60	38
50	78	40
60	100	42

1 Plot a line graph to show these results.

- Choose a different colour for each solid, and show these in the key.
- Plot the points on the graph, and join them with a smooth line.



2 Use your graph to help you answer the questions. Choose the correct words or numbers from the brackets.

a When the temperature goes up, the mass of solid that dissolves _____ (goes up/goes down/stays the same).

b At 10 °C, more potassium _____ (chloride/nitrate) dissolves.

c At 40 °C, more potassium _____ (chloride/nitrate) dissolves.

d At 55 °C, you would expect _____ (31/36/41/48) grams of potassium chloride to dissolve.

e To get 70 grams of potassium nitrate to dissolve, you would need to heat the water to about _____ (25/35/45/55) degrees.

Key

- ☐ potassium nitrate
- ☐ potassium chloride

Home learning 2 – Chromatography

Task 1

Describe in detail how to carry out a chromatography experiment. It must include an equipment list, a step by step method, a diagram and how would you keep it a fair test. You should be able to give it to any other student in order for them to complete the experiment and get excellent results.

Task 2

The list below shows different mistakes that you could make when you are producing a chromatogram. What effect will each mistake have on the chromatogram? Explain your answer in as much detail as you can.

a) You leave the paper in the water for too long.
b) You use a felt tip pen instead of a pencil to draw the line across the bottom of the paper.
c) You make the blobs too close to the bottom of the paper, so that they are below the water level when you put the paper into a beaker.
d) You put some of the blobs onto the paper above the pencil line.
e) You use water to test some permanent inks

Home learning 3 – Energy transfer

Words to use:

Collide, dense, energy, free electrons, faster, freely, further apart, less, metal ions, replace, rises, vibrate

Conduction through Non Metal	**Conduction through Metal**	**Convection**
Particles gain e _____	F _____ e _____ and m _____ i _____ gain e _____	Particles gain e _____
Particles v _____ _____ f _____ _____	F _____ e ___ move f _____ and more f _____ through the metal.	The hotter particles move f _____ _____ a _____ and f _____.
Particles c _____ _____ with each other.	M _____ i ___ _____ also v _____ _____ f _____	The hotter fluid becomes l _____ d _____ and r _____.
	F _____ e ___ _____ c _____ with each other and the vibrating metal ions.	The cooler particles r _____ the hotter ones.

Words to use:

air, bad, better, body, collide, conductor, dense, enter, escape, feet, fibres, fur, free electrons, further apart, good, insulator, layers, metal ions, more, move, particles, surroundings, vibrating

1. A rug feels warmer than a wooden floor because the _____ in between the _____in the rug is a _____ _____ of heat and so the heat from your _____ cannot _____ so easily.
2. A coat with fur on the inside will keep you warmer than one without fur because the _____ in between the _____ is a _____ _____ _____ of heat and so the heat from your _____ cannot _____so easily.
3. Aluminium saucepans are better than iron ones because Aluminium is a _____ conductor of heat than Iron. This is because Aluminium has _____ _____ _____ that can _____ more freely and _____ with the _____ _____ ___ _____ quicker.
4. Flames go upwards because the hotter _____move _____ _____._ This makes the hotter air less _____ _____ and so able to move upwards.
5. Explain why you would crawl close to the floor in a smoke filled room.
6. Explain how heat is transferred around an oven so that food is heated evenly.
7. Explain how heat is transferred through a metal skewer.