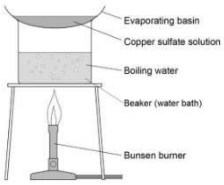
Required practicals: Chemistry paper one

C1 – Making Salts	How do you prepare a pure, dry sample of a soluble salt from an insoluble salt?	*Dilute sulphuric acid *Measuring cylinder *Copper oxide powder *Spatula *Glass rod *100cm3 beaker *250cm3 beaker *Bunsen burner *Tripod *Gauze *Heatproof mat *Filter funnel and paper *Small conical flask *Evaporating basin	1) Measure 40cm3 of sulphuric acid and add to a beaker. 2) Heat the acid gently. Turn off the Bunsen burner. 3) Add copper oxide power to the acid until it stops reacting. Stir continuously. 4) Filter the solution to remove excess insoluble copper oxide 5) Pour the filtrate into an evaporating basin and heat gently over a water bath. 6) As soon as crystals start to form, leave the evaporating dish for 24 hours. 7) Pat the crystals dry between two pieces of filter paper. Note: Evaporation is the changing of water from a liquid to a gas, crystallisation is the formatino of crystals from a concentrated subsance. Note: *Carbonates tend to be insoluble *Sulphates, nitrates, chlorides tend to be soluble 	You will remove the insoluble black copper oxide from the mixture by filtering. You will remove the water through evaporation. Blue crystals of copper sulphate will form – the slower the cool, the larger they will be. These are TOXIC, do not ingest (eat).	Explain have lithium sulphate can be produced from lithium carbonate and sulphuric acid. Explain how to prepare an insoluble salt from a soluble salt - (react two soluble salts and a precipitate will form, filter, wash with water, then dry in an oven).
	Video of making salts practical: linked here				

C3 - Electrolysis	Investigate the products formed during electrolysis of an aqueous solution.	*copper chloride solution *sodium chloride solution *100cm^3 beaker *Petri dish lid *2 carbon electrodes *2 crocodile clips *low voltage power supply *blue litmus paper *forceps	1) Pour approximately 50cm^3 copper (II) chloride solution into the beaker. 2) Add the petri dish lid and insert the carbon electrodes through the holes. The electrodes must not touch each other. 3) Attach crocodile leads to the electrodes. Connect the electrodes to the dc terminals of a low voltage power supply. 4) Select 4 V on the power supply and switch on. 5) Look at both electrodes and record your observations. 6) Use forceps to hold a piece of blue litmus paper in the solution next to the anode. Record your observation. 7) Rinse the electrochemical cell apparatus and collect a new set of electrodes. 8) Repeat steps 1–8 using the other solution sodium chloride.	$CuCl_2$ solution will form copper at the cathode (-ve electrode) and chlorine at the anode (+ve electrode). This will bleach the litmus paper. NaCl will form hydrogen at the cathode (because it the metal is more reactive than hydrogen) and chlorine at the anode (positive electrode).	Investigate the products formed during electrolysis of aqueous copper sulphate. Describe how you would carry out electrolysis of molten zinc chloride.
	Video of electrolysis practical: linked here				

C4 – Temperature Changes	Investigate the variables that affect temperature changes in reacting solutions. IV: Volume of NaOH DV: Temperature change CV: Volume of HCl	*dilute hydrochloric acid *dilute sodium hydroxide solution *a polystyrene cup and lid *250 cm^3 beaker *10 cm^3 measuring cylinder *50 cm^3 measuring cylinder *a thermometer	1) Measure 30cm^3 of dilute HCl and add it to the polystyrene cup. 2) Stand the cup inside the beaker 3) Use the thermometer to measure the temperature of the acid and record in a results table. 4) Add 5cm^3 of NaOH solution, add the lid and stir gently. 5) When the temperature stops rising, record the temperature on the thermometer. 6) Repeat steps 4-5 adding a further 5cm^3 each time until 40cm^3 of NaOH has been added. 7) Wash out the equipment and repeat the experiment two more times so that you can remove anomalies and calculate an accurate mean.	Temperature should increase until the point where the same volumes of acid and alkali are added and then should decrease slightly as you are adding more cold alkali but not producing any more reactions (acid becomes the limiting reactant).	Investigate the temperature changes involved in the reaction between water and calcium chloride (exothermic). Investigate the temperature changes involved in the reaction between ethanoic acid and sodium carbonate (endothermic).
	Video of temperature change practical: linked here				