

Station 1

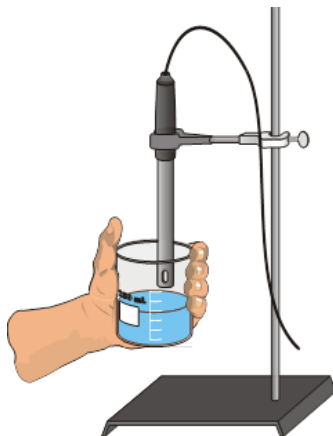
Electrolytes and Non-electrolytes

Data Logging Equipment

Conductivity Sensor

Readings taken from the top of the main menu screen

Equipment / Materials



6 x 250 (or 150) cm³ Beakers

Distilled or deionised water

0.05 M NaCl

0.05 M CaCl₂

0.05 M AlCl₃

0.05 M HCl

0.05 M CH₃COOH

0.05 M H₃PO₄

0.05 M H₃BO₃

0.05 M CH₃OH

Tap Water

Distilled Water

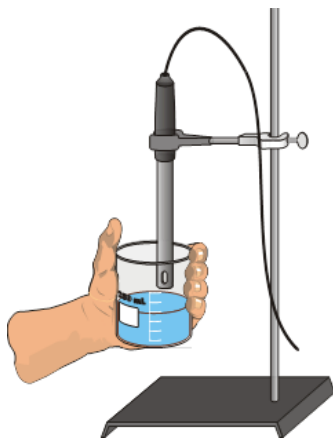
Station 2

Conductivity of Solutions: The Effect of Concentration

Data Logging Equipment
Conductivity Sensor

Readings taken from the top of the main menu screen

Equipment / Materials



6 x 250 (or 150) cm³ Beakers
Distilled or deionised water
0.1 M NaCl
0.1 M CaCl₂
0.1 M AlCl₃

Station 3

Evaporation, Intermolecular Forces

Data Logging Equipment

3 x Temperature Sensors

Method of Collection

Time Graph

Time interval

3 Sec

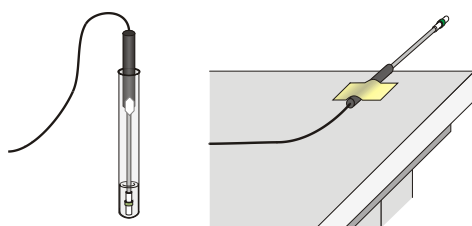
No of Samples

40

Experiment length

120 Sec

Equipment / Materials



Methanol
Ethanol
Propan-1-ol
Butan-1-ol
n-pentane
n-hexane
Propanone
7 x 100 cm³ beakers
Filter Paper
Elastic Bands
Masking Tape
Scissors

Station 4

Acid/base titration

Strong acid/weak base

Weak acid/strong base

Weak acid/weak base

Data Logging Equipment

pH Sensor



Method of Collection

Time interval

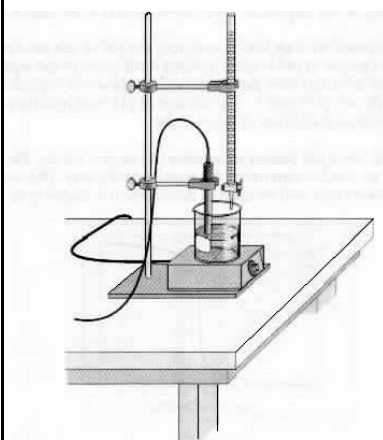
Experiment length

Time Graph

1 Sec

180 Sec

Equipment / Materials



Retort Stand

Clamp and Bosshead

1 x 50 cm³ Burette

1 x 250 cm³ Beaker

1 x 50 cm³ Graduated Cylinder

Magnetic Stirrer (optional)

0.1 M NaOH

0.1 M HCl

0.1 M CH₃COOH

0.1 M NH₄OH

Deionised Water

Wash Bottle

Station 5

Boyle's law

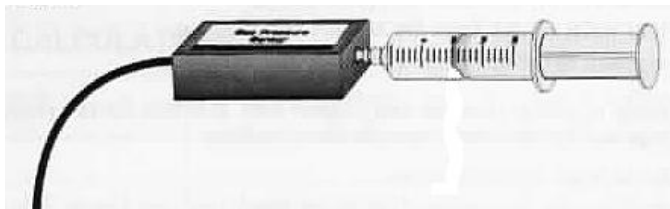
Data Logging Equipment
Gas Pressure Sensor with Plastic Syringe

Method of Collection

Events with Entry

Equipment / Materials

None



Station 6

Determining the Concentration of a Solution: Beer's Law

Data Logging Equipment
Colorimeter

Method of Collection

Events with Entry

Equipment / Materials

30 mL of 0.40 M NiSO₄ Miltons Sterilising Fluid
 Five 20 X 150 mm test tubes Five 50 cm³ Volumetric Flasks
 Two 10 mL pipets 5% Ethanoic Acid
 2% Potassium Iodide
 250 cm³ Volumetric Flask



Trial number	0.40 M NiSO ₄ (mL)	Distilled H ₂ O (mL)	Concentration (M)
1	2	8	0.08
2	4	6	0.16
3	6	4	0.24
4	8	2	0.32
5	~10	0	0.40

Dilute 2.5 cm³ of Milton's solution with deionised water and make up to the mark in a 250 cm³ volumetric flask. Make up the following solutions in the 50 cm³ Volumetric flasks and label them A,B,C,D,E.

Chemical	A	B	C	D	E
5% Ethanoic acid	5 cm ³	5 cm ³	5 cm ³	5 cm ³	5 cm ³
2% Potassium Iodide	5 cm ³	5 cm ³	5 cm ³	5 cm ³	5 cm ³
Diluted Milton	0.0 cm ³	1 cm ³	2 cm ³	4 cm ³	8 cm ³
Conc. in ppm	0	4	8	16	32

Make each solution up to the 50 cm³ mark with deionised water

Station 7

Pressure-Temperature Relationship in Gases

Data Logging Equipment

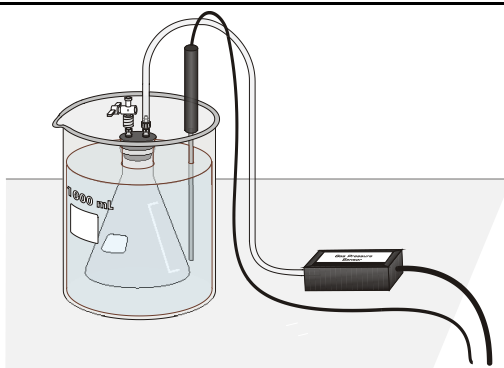
Gas Pressure Sensor

Temperature Sensor

Method of Collection

Selected Events

Equipment / Materials



Ice Water Bath
Room Temperature Bath
Hot Water Bath

Station 8

A good cold pack

Data Logging Equipment
Temperature Sensor

Method of Collection

Time interval

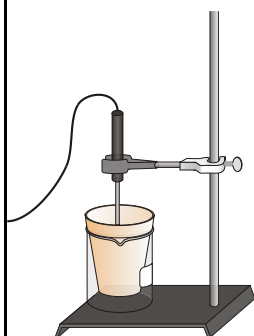
Experiment length

Time Graph

5 Sec

600 Sec

Equipment / Materials



Five 50 mL beaker

0.3g ammonium chloride, NH_4Cl

0.3g citric acid, $\text{H}_3\text{C}_6\text{H}_5\text{O}_7$

0.3g potassium chloride, KCl

0.3g sodium bicarbonate, NaHCO_3

0.3g sodium carbonate, Na_2CO_3

Station 9

Rusting

Data Logging Equipment

Oxygen Gas Sensor
Gas Sensor Bottle

Method of Collection

Time interval

No of samples

Experiment length

Time Graph

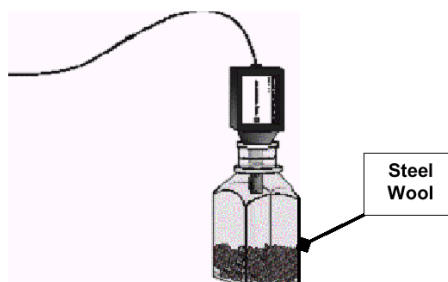
15 Sec

40

600 Sec

Equipment / Materials

Steel Wool
Water
250 cm³ Beaker



Station 10

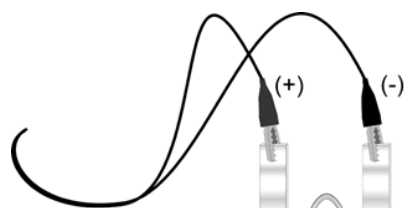
Electrochemical Series

Data Logging Equipment
Voltage Sensor

Readings taken from the top of the main menu screen

Equipment / Materials

Filter paper and scissors.
Sand paper and forceps
1 M solns. of Fe,Cu,Zn,Mg and Pb
Small clean pieces of Fe,Cu,Zn,Mg and Pb
M NaNO_3 used as a salt bridge



NaNO_3 soln.
used as a
salt bridge

Cut out
sections
between metals

