



ChemStart

Unleashing the Scientist in you

GRADE 11



NKAZIMULO
APPLIED SCIENCES

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Contents

FIRST THINGS FIRST: SAFETY	4
GENERAL RULES	4
CLOTHING	4
ACCIDENTS AND INJURIES.....	4
HANDLING CHEMICALS	5
HANDLING GLASSWARE AND EQUIPMENT.....	5
HEATING SUBSTANCES.....	5
LABORATORY APPARATUS	7
CONTENTS.....	6
TERM 1	9
INTERMOLECULAR FORCES AND PHYSICAL PROPERTIES.....	9
The effect of intermolecular forces on evaporation.....	9
The effect of intermolecular forces on surface tension	9
The effect of intermolecular forces on solubility.....	9
The effect of intermolecular forces on boiling point	10
The effect of intermolecular forces on capillarity.....	10
PROPERTIES OF WATER.....	11
Density	11
Water as a solvent	11
Solubility.....	11
Water cooling.....	12
Water heating	12
FREEZING POINT DEPRESSION	13
to decrease the freezing point of ice	13
CRYSTALISATION	14
to grow a crystal through the process of crystallisation.....	14
SUBLIMATION	15
to observe the sublimation of benzoic acid.....	15
WORKSHEET	16
TERM 2	20
REFRACTION.....	20
to examine the refraction of light through mediums of a similar density.....	20
To observe the refraction of light through mediums of different densities.....	20
To reserve writing using refraction.....	21

VERIFYING CHARLES'S LAW.....	22
To illustrate the principle of Charles' Law	22
TESTING ALKALINITY	23
Using litmus paper to determine acidity and alkalinity.....	23
Using phenolphthalein indicator to determine acidity and alkalinity	23
LITMUS PAPER INDICATOR	23
to use litmus paper to test for the pH of different substances	23
To make a homemade indicator using the red cabbage	24
WORKSHEET	25
TERM 3	30
EXOTHERMIC AND ENDOTHERMIC.....	30
Reaction of citric acid and sodium bicarbonate	30
Reaction of barium hydroxide and ammonium chloride.....	30
Reaction of potassium permanganate and glycerine	30
Reaction of steel wool and oxygen in air	31
ACTIVATION ENERGY	32
to investigate the activation energy of a burning magnesium ribbon	32
WORKSHEET	33
TERM 4	36
SINGLE DISPLACEMENT	36
to observe a redox reaction where a more reactive metal displaces a less reactive metal from a solution of its salt.....	36
DOUBLE DISPLACEMENT	37
to observe a double displacement reaction between lead nitrate and potassium iodide.....	37
DECOMPOSITION REACTION.....	38
to demonstrate the decomposition of potassium dichromate	38
WORKSHEET	39

FIRST THINGS FIRST: SAFETY

This section of the manual is the most important of all. Please take care to follow the rules carefully.

GENERAL RULES

1. Conduct yourself in a responsible manner always with the kit.
2. Follow all written and verbal instructions carefully. If you do not understand a direction or part of a procedure, rather wait to ask your teacher at school or send us a message on info@nkazisciencences.co.za.
3. Never work alone, always have someone older than you around.
4. Perform only those experiments in the kit. Unauthorized experiments are not allowed.
5. Do not eat food, drink beverages, or chew gum while conducting experiments.
6. Horseplay, practical jokes and pranks are dangerous and prohibited.
7. Be prepared for your work. Read all procedures thoroughly before starting with any experiment.
8. Always work in a well-ventilated area.
9. Observe good housekeeping practices. Work areas should be kept clean and tidy at all times.
10. Dispose of all chemical waste properly as indicated in the manual.
11. Keep hands away from face, eyes, mouth, and body while using chemicals or lab equipment. Wash your hands with soap and water after performing all experiments.
12. Experiments must be personally monitored at all times. Do not wander around the room.

CLOTHING

1. Protective gear has to be comfortable.
2. Any time chemicals, heat, or glassware are used, wear safety glasses. **NO EXCEPTIONS TO THIS RULE!**
3. Contact lenses may not be worn in the laboratory.
4. Dress properly during an experiment. Long hair, dangling jewellery, and loose or baggy clothing are a hazard. Shoes must completely cover the foot. No sandals to be worn when conducting experiments.

ACCIDENTS AND INJURIES

1. If there is a spillage, wash with water.
2. If a chemical should splash in your eye(s) or on your skin, immediately flush with running water for at least 20 minutes.

HANDLING CHEMICALS

1. All chemicals in the kit are to be considered dangerous. Avoid handling chemicals with fingers. When making an observation, keep at least 1 meter away from the reaction. Do not taste, or smell any chemicals.
2. Check the label on all chemical bottles twice before removing any of the contents. Take only as much chemical as you need.
3. Never return unused chemicals to their original container.
4. Never remove chemicals or other materials from the kit.

HANDLING GLASSWARE AND EQUIPMENT

1. Never handle broken glass with your bare hands. Use a brush and dustpan to clean up broken glass.
2. Do not immerse hot glassware in cold water. The glassware may shatter.

HEATING SUBSTANCES

1. Do not operate a hot plate by yourself. Take care that hair, clothing, and hands are a safe distance from the hot plate at all times. Use of hot plate is only allowed in the presence of an adult.
2. Never look directly into a container that is being heated.

CONTENTS

Chemicals	Labware
Acetic acid 50ml	Aluminium foil 5 sheets
Acetone 50ml	Beaker glass 1
Ammonium chloride 10g	Beaker plastic-100ml 3
Ammonium dichromate 10g	Burner and stand 1
Barium hydroxide 10g	Candle 2
Benzoic acid 10g	Capillary tubes 5
Chloroform 10ml	Conical flask with stopper-100ml 1
Citric acid solution 6%20ml	Glass rod 1
Cooking oil 50ml	Gloves 2
Copper sulphate 10g	Graph paper 5
Cyclohexane 10ml	Head ache powder 3 sachets
Ethanol 50ml	Iron nails 2
Glycerine 25ml	Lighter 1
Iodine crystals 2g	Litmus paper 2
Lead nitrate 10g	Measuring cylinder 50ml 1
Litmus paper (blue and red)	Pasteur pipette 2
Magnesium ribbon 2 strips	Polystyrene cup with lid 2
Methylated spirit 100ml	Safety glasses 1
Phenolphthalein 20ml	Spatula 1
Potassium alum 40g	Steel wool 1
Potassium iodide 5g	String 1
Potassium permanganate 10g	Syringe 10ml 1
Sodium acetate 10g	Test tube holder 1
Sodium bicarbonate 10g	Test tube rack 1
Sodium chloride 10g	Test tube-large 1
Sodium hydroxide 15g	Test tubes 4
Sulphur 10g	Thermometer 1
	Tweezers 1
	Watch glass 2