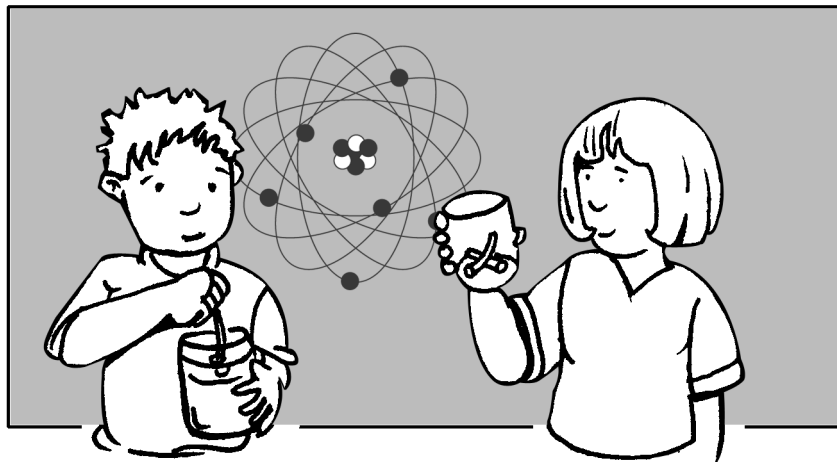


Science

VELS Teaching & Assessment Resource
Year 5
Level 4



TEACHER RESOURCE

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Contents

Introduction	v
Science Introduction	vi
Dimensions	
Science knowledge and understanding	
Science at work	
Safety	ix
Level 4	x
Learning Focus	
Standards	
Progression Points: Progressing towards Level 4	xii
Year Planner	xiii
Term 1 Planner: Earth and Space	xiv
Term 2 Planner: Living Things	xv
Term 3 Planner: Matter	xvi
Term 4 Planner: Forces and Motion	xvii
Using the Lesson Plans	1
Term 1: Earth and Space	
A Scientist	2
Planet Earth	4
Let's Make the Layers of the Earth	6
Above Earth.....	8
Caring for the Atmosphere	10
Layers Above & Below the Earth	12
Natural Disasters	14
The Solar System	16
Space Exploration	18
Term 2: Forces and Motion	
Energy.....	20
Energy Transformations.....	22
Electrical Circuits	24
Magnets & Electricity	26
Motors.....	28
Forces	30
Movement	32
Gravity	34
Floating & Sinking	36
Water Force.....	38
Term 3: Matter	
Substances – Properties & Uses	40
Houses	42
Building a House	44
Substances as Fuels	46
Fuels	48
Reversible & Irreversible Change	50
Chemical Changes	52
Moo Glue	54
Hot or Cold?	56

Term 4: Living Things	
Food Chains 1	58
Food Chains 2	60
Food Chain Relationships	62
Food Chains within Habitats	64
Food Chain Roles	66
Our Bodies	68
Animal Bodies	70
Body Systems	72
Plants – Internal and External Systems	74
Plants and Animals.....	76
Appendices	
Appendix I: Assessment Record Sheets	78
Appendix II: Teaching Aids	105

Introduction

In this teaching resource you will find a year planner, term planners and week-by-week lesson plans, as well as corresponding assessment record sheets, teaching aids and reward certificates. Each week-by-week lesson plan lists students' objectives, teaching resources, skills, step-by-step activities, assessment suggestions and a list of associated terms. Some lesson plans include extension activities.

Each lesson plan is designed to be used in conjunction with the student workbook and the appendices (see the back of this book). Flick through the lesson plans and you will notice that each time a work sheet, homework sheet, assessment record sheet or other resource is required, its page number is referenced. Thus the week-by-week lesson plans form the skeleton for all your science lessons.

In the appendices at the back of this book you will find assessment record sheets (Appendix I) and reproducible teaching aids (Appendix II). The activities in the lesson plans utilise materials that are fun and inventive yet easily found around the classroom or at home. 'Technology Application' indicates how technology is integrated into the classroom. The activities can be taught in one block or individually throughout the week.

The student workbook encourages active student participation and helps develop a wide range of skills from discussing and analysing to hypothesising and cooperating. The workbook also serves as a record of each student's observations and an outline of how each student's scientific knowledge has developed.

Use this book, *VELS Science Teaching and Assessment Resource – Year 5*, in conjunction with the student workbook. It will make teaching easier by providing the resources for the VELS standards for Science, Level 4, in an easy-to-use format.

ENERGY

OBJECTIVES

- Become familiar with the following forms of energy: heat, light, sound, movement and electricity
- Revise key concepts about forms of energy and energy transformation

RESOURCES

sheets with energy names and brief explanations (see Appendix II, pages 110 to 117)
magazines
scissors
paste

SKILLS

questioning
researching

PROGRESSION POINTS

The following lesson provides opportunities for students to demonstrate:

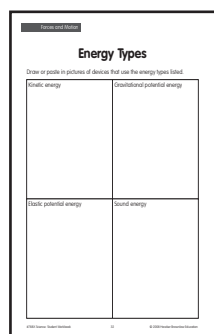
Progression Point 3.25 Science knowledge and understanding

- Awareness of the connections between concepts related to one or more of matter, space, energy and time

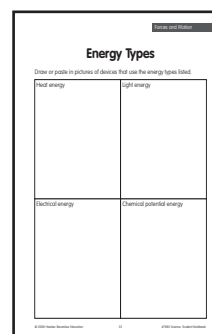
Progression Point 3.5 Science knowledge and understanding

- Knowledge of the connections between concepts related to one or more of matter, space, energy and time

CORRESPONDING WORK SHEETS



32



33

ACTIVITIES

- Write the word *energy* on the board.
- Conduct a think, pair, share about what energy is and what it can do.
- When students share, record their responses.
- Summarise the discussion by stating that energy is the ability of something to do work and that the amount of work something can do depends on the amount of energy it has.
- Explain that energy cannot be created or destroyed but can be changed from one form to another (transformed) and transferred from one place to another. Discuss this and encourage students to raise questions. Record these questions as they are asked.
- Group students into eight groups and have each group gather facts about a type of energy:
 - kinetic energy
 - gravitational potential energy
 - elastic potential energy
 - sound energy
 - heat energy
 - light energy
 - electrical energy
 - chemical potential energy. (Note: potential energy is stored energy.)
- How can the energy be increased or decreased? Where can it be found? How can it be used?
- See Appendix II (pages 110 to 117) for a set of brief explanations that might assist students.
- Have groups report to the class. As they do, brainstorm a list of simple devices that use the various energy types.
- Ask students to paste or draw in their workbooks pictures of devices which use each type of energy.

Can students name the eight energy types and give an example of each? Record responses on the assessment record sheet in Appendix I (page 86).

ASSESSMENT

LANGUAGE

Introduce and explain the following terms:		
<i>energy</i>	<i>move</i>	<i>temperature</i>
<i>kinetic</i>	<i>movement</i>	<i>higher</i>
<i>potential</i>	<i>vibrate</i>	<i>speed</i>
<i>gravitational</i>	<i>particles</i>	<i>high</i>
<i>elastic</i>	<i>atoms</i>	<i>work</i>
<i>sound</i>	<i>molecules</i>	<i>transform</i>
<i>heat</i>	<i>current</i>	<i>object</i>
<i>light</i>	<i>flow</i>	<i>transfer</i>
<i>electrical</i>	<i>contracting</i>	<i>mass</i>