

**GRADE 7**

# **Natural Sciences**

# Survival Guide

**Covid-19**





Pearson

# Look closer, search deeper, *discover more*

Learning is a journey filled with discoveries, challenges, inspiration, and wonder. At the world's learning company, we know that a love of learning is a passion that lasts a lifetime and transforms people's livelihoods in all kinds of ways.

At Pearson, it's our privilege to help you explore your personal journey of discovery and develop a love of learning that enriches every stage of your life.





## How we learn is as important as what we learn

We believe that harnessing technology to power learning represents an opportunity to engage, motivate, and prepare each learner for success. **MyPedia** is just one way that we deliver on our promise to incorporate global experience in education. This blended classroom solution contributes toward effective technology-enabled learning in South Africa.

---



## We're changing the way we look at learning

We are always looking for new and exciting ways to inspire learners. That is why we keep aiming higher to deliver the best learning resources to help learners make progress. From our trusted **CAPS-approved textbooks**, to our wide range of **digital and supplementary resources**, our products and services add unique richness and depth to the learning experience.

---



## We're here to help people make progress through learning

We believe you can unlock your future with learning. We're constantly evolving to help people everywhere gain access to the learning they need. Students at **Pearson Institute of Higher Education** benefit from a range of career-focused qualifications. Our **Pearson Professional Programmes** provide globally recognised, industry relevant online short courses.

---



**Pearson cultivates a love of learning that enables a lifetime of progress. Because wherever learning flourishes, so do people.**

### Contact us

Tel: 021 532 6008

Email: [pearsonza.enquiries@pearson.com](mailto:pearsonza.enquiries@pearson.com)

Learn more at [za.pearson.com](http://za.pearson.com)

Browse and purchase eBooks at [shop.pearson.co.za](http://shop.pearson.co.za)

Pearson South Africa (Pty) Ltd

4th floor, Auto Atlantic Building, Corner of Hertzog Boulevard and Heerengracht,  
Cape Town, 8001 Offices in Johannesburg, Durban, East London, Polokwane,  
Bloemfontein, Rustenburg and Mbombela.

© Pearson South Africa (Pty) Ltd

All Rights Reserved. This digital publication is protected by copyright, and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise except as authorized for use under the product subscription through which this digital application is accessed.

For information regarding permissions, request forms and the appropriate contacts, please visit the Pearson South Africa's Rights and Permissions Department website: <http://schools.pearson.co.za>

Every effort has been made to trace the copyright holders of material produced in this title. We would like to apologise for any infringement of copyright so caused, and copyright holders are requested to contact the publishers in order to rectify the matter.

### **Survival Guide Covid-19 Natural Sciences Grade 7**

ePDF ISBN: 9781485719175

Print ISBN: 9781485719298

Cover design by Pearson Media Hub

Typeset by Lizette Watkiss

# COVID-19 safety guidelines for teachers and learners

## Gatherings at school

Where schools are open for learning, it is up to management to take decisive action to ensure sites are not simultaneously used for other functions such as shelters or treatment units in order to reduce the risk.

### Implement social distancing practices that may include:



- A staggered timetable, where teachers and learners do not arrive/leave at the same time for the beginning and end of the school day.
- Cancelling any community meetings/events such as assemblies, cake sales, market day, tuckshop, after-care classes, matric dance, Eisteddfod and other events.
- Cancelling any extra-mural activities such as ballet classes, swimming lessons, sport games, music class and other events that create a crowd gathering.
- Teaching and modeling creating space and avoiding unnecessary touching.
- Limiting movement and interaction between classes.
- Schools with an established feeding scheme plan are to ensure that hygiene and social distancing is always implemented. Teachers and staff members assisting with food distribution are to wear masks, sanitise prior to issuing food items and learners are to stand 1,5m apart in the queue.

**Wear a mask at all times.**



## 1. Restrooms/ toilets

### Hand washing

Washing hands with soap and water  or using alcohol-based hand sanitisers  is one of the most important ways to help everybody stay healthy at school. Critical to this is preparing and maintaining handwashing stations with soap and water at the toilet and in each classroom.



Teachers and learners should always wash their hands after:

- eating
- entering the classroom
- using the toilet
- blowing your nose or coughing
- touching tears, mucous, saliva, blood or sweat.

## 2. Premises and Classroom setting

When schools open, classroom settings should be altered in order to promote hygiene, safety and social distancing.

### Changed classroom settings may include:

- Cleaning and disinfecting school buildings, classrooms and especially sanitation of facilities at least once a day, particularly surfaces that are touched by many people (railings, lunch tables, sports equipment, door and window handles, toys, teaching and learning tools etc.).
- Ensure the proper ventilation and fresh flow of air through classrooms.
- Providing learners with vital information about how to protect themselves by incorporating the importance of hygiene, handwashing and other measures of protecting themselves, into the lessons.
- Promoting best handwashing and hygiene practices and providing hygiene supplies.

- Prepare and maintain handwashing stations with soap and water, and if possible, place alcohol-based hand sanitisers in each classroom, at entrances and exits, and near lunchrooms and toilets.



- Ensure teachers and learners wear a mask at all times.



### Social distancing

- Space the learners out in the classroom (or outdoors) – try to keep learners separated by a minimum of 1,5m.

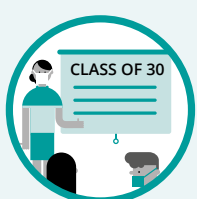


- Create space for learner's desks to be at least 1,5m apart

- Learners should not share cups, eating utensils, or food

- Do not let learners eat items that fall on the floor or chew on pencils or other objects

- Learners are not to exceed 30 per class or 50% of original class size



- Avoid close contact, like shaking hands, hugging or kissing



### 3. Social behaviour

It is extremely vital during a pandemic that focus is not only directed towards optimal physical health and hygiene but finding ways to facilitate mental health support.

- Treat everybody with respect and empathy – no teasing about COVID-19.
- Encourage kindness towards each other and avoid any stereotyping when talking about the virus.
- Stay home if you have a temperature or are ill.
- Do not touch people who are ill, but be empathetic.

- Wear a mask at all times.



### Dear Teacher

The National State of Disaster due to the COVID-19 pandemic has resulted in the disruption of Education in South African and the loss of valuable teaching time and disruption of the school calendar.

As a result of this the DBE has created a Recovery Framework including revised ATPs to assist schools and teachers in ensuring the 2020 school year is completed.

This plan addresses curriculum trimming and reorganisation to ensure core skills and knowledge are taught so that learners may progress to the next grade.

The following DBE website <https://www.education.gov.za/Home/RecoveryPlan2020.aspx> has the following useful documents available for you to use:

- Circular S2 of 2020 Revised ATPs for Gr 12 and Gr 7
- ATP Mediation documents by grade and subject
- National Phase Content Plans by phase and subject
- National Revised ATPs by grade and subject

At Pearson South Africa, we believe that education is the key to every individuals' success.

To ensure that despite the shortened teaching year, teachers and learners can meet all the necessary learning outcomes for the year, we have created this resource to support teachers and learners during this difficult time.

This Survival Guide aims to identify areas where teacher-facing time is reduced and various strategies such as trimming the curriculum, grouping or reorganising content and creating opportunities for learner-centered work and blended learning can take place.


# HOW TO USE THIS SURVIVAL GUIDE

**CAPS curriculum:**  
comprehensive summary of the CAPS topics and sub-topics and time allocation

1. CAPS time allocation
2. Revised CAPS time allocation according to the Revised ATP's

Survival guide strategy: proposed strategies that can be used to save teaching time. Two approaches to reducing teaching time are suggested:

1. **trimming** the curriculum and therefore teaching time
2. Curriculum **reorganisation/ clustering/grouping** topics across the year where it makes sense and therefore reducing teaching time

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY	
SUB-TOPIC	UNITS	CAPS TIME ALLOCATION	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
4. Floods	Unit 1 Causes of floods	4 hours	1.5 hours	Retain	Group with Unit 2 Effects of floods
	Unit 2 Effects of floods		1.5 hours	Retain	
	Unit 3 Why some communities are at higher risk than others			Retain but reduce	Flipped concept, learners prepare before lesson in preparation and then class discussion *4
Revision and assessment	Revision and assessment formal and informal including feedback should be done on an ongoing basis  Revision and end-of-year examination: Formal assessment Task: Source - based & paragraph writing 50 Marks  November examination: 50 marks	3 hours		Reduced	
 TOTAL HOURS = 15					

ASSESSMENT						
	TERM 1	TERM 2	TERM 3	TERM 4	NOVEMBER EXAM	
POA	Project, assessed as part of formal assessment for Term 1	June exam cancelled	Test: 2nd week of September, based on content & concepts taught from reopening of schools 1 June – up to this point	Formal assessment based on concepts and content taught from September to November		
SBA	Map skills project	Test: Earthquakes and volcanoes and population growth and change		Test: Natural resources and conservation in South Africa TOTAL MARKS: 50	QUESTION 1: 25 marks TYPES OF QUESTIONS Source-based, data handling and definitions of concepts	CONTENT Natural resources and conservation in South Africa
					QUESTION 2: 25 marks TYPES OF QUESTIONS Case study, definitions of concepts, data handling and paragraph writing	CONTENT Management of resources

- \*1 Learners bring summaries to class for class discussions. Flipped concept, learners prepare before lesson and then class discussion around content. Teacher chooses 1 resource. Natural resources on Earth and use and abuse of them have been omitted according to the Recovery national teaching plans.
- \*2 Learners prepare at home by reading content choose either community or eco tourism. Flipped concept, learners prepare before lesson and then class discussion around content.
- \*3 Remove due to time constraints and addressed in Gr 10

Explain the rationale behind the trimming or grouping suggested

Assessment and revision for POA and SBA as per Revised ATP's.

## Notes

- Grade 12 subjects' content will not be trimmed/cut, but time can be saved through grouping and reorganising content.
- Teachers should follow the amended guidelines for assessment as set out by the DBE. Revised ATP's per subject and grade.
- No curriculum condensing strategies have been suggested for Term 1, as it is assumed that Term 1 content was taught.



# Contents

<b>Time allocation</b> .....	1
<b>Summary: CAPS skills</b> .....	1
<b>Term 1</b> .....	2
Strand: Life and living.....	2
<b>Term 2</b> .....	4
Strand: Matter and materials.....	4
<b>Term 3</b> .....	7
Strand: Energy and Change .....	7
<b>Term 4</b> .....	11
Strand: Planet Earth and beyond .....	11

PEARSON SOUTH AFRICA

# Find us online



## Pearson website

Your favorite Preschool to Grade 12 textbooks and resources from Maskew Miller Longman, Heinemann and Pearson now in one place. Visit [za.pearson.com](http://za.pearson.com) for news, product information and more.

## Classroom Solutions

We know you always looking for new and exciting ways to inspire your learners. That's why we created [classroomsolutions.co.za](http://classroomsolutions.co.za) where you can download **FREE** teaching resources, such as, lesson plans, worksheets, practice books, audio stories, videos, podcasts and more.

Classroom Solutions was designed to help save you time, so you can spend more time getting creative about learning.

Register for free at [www.classroomsolutions.co.za](http://www.classroomsolutions.co.za)

## Peason eStore

Pearson offers the widest range of CAPS-approved content in South Africa, now available in various eBook formats to suit you and your learner's needs.

Browse and purchase eBooks at [shop.pearson.co.za](http://shop.pearson.co.za)



## Natural Sciences

GRADE	NO OF WEEKS	CONTENT, CONCEPTS & SKILLS (WEEKS)	FORMAL ASSESSMENT (WEEKS)
7	40	34	6
8	40	34	6
9	40	34	6

\*3 hours teaching time per week, with 40 weeks per grade, means the total teaching time per year is 120 hours

THEME	GRADE 7	GRADE 8	GRADE 9
LIFE AND LIVING	The biosphere, Biodiversity, Sexual Reproduction, Variation [No amendment]	Photosynthesis and Respiration, Interactions and interdependence within the environment, Micro-organisms [No amendment]	Cells as the basic units of life, Systems in the human body, Human reproduction, Circulatory and respiratory systems, Digestive system [No amendment]
MATTER AND MATERIALS	Properties of materials, Separating mixtures, Acids, bases and neutrals, Introduction to Periodic Table of Elements [Reduced properties of materials.]	Atoms, Particle model of matter, Chemical reactions [Reduced content on Atoms. Removed chemical reactions.]	Compounds, Chemical reactions, Reactions of metals with oxygen, Reactions of non-metals with oxygen, Acids and bases and pH value [Reactions of metals and non-metals with oxygen reduced. Reaction of acids with metals removed.]
ENERGY AND CHANGE	Sources of energy, Potential and Kinetic Energy, Heat Transfer, Insulation and energy saving, Energy transfer to surroundings, The national electricity supply system [Insulation and energy saving reduced. Removed National electricity supply.]	Static electricity, Energy transfer in electrical systems, Series and parallel circuits, Visible light [Series and parallel circuits reduced.]	Forces, Electric cells as energy systems, Resistance, Series and parallel circuits, Safety with electricity, Energy and the national electricity grid, Cost of electrical power [No amendment]
PLANET EARTH AND BEYOND	Relationship of the Sun to the Earth, Relationship of the Moon to the Earth, Historical development of astronomy [Historical development of astronomy reduced.]	The Solar System, Beyond the Solar System, Looking into space [Removed Planet Earth and Beyond completely.]	The Earth as a system, Lithosphere, Mining of mineral resources, Atmosphere, Birth, life and death of stars [Removed Planet Earth and Beyond completely.]

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY *2		
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	TIME ALLOCATION *1	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	TIME
The biosphere [1 week/ 3 hours]	<b>Unit 1:</b> The concept of the biosphere	Existence of life, including the lithosphere, hydrosphere and atmosphere. Living things (plants, animals, micro-organisms) and dead organic matter. Seven life processes.	1½ hours	Retain.	N/A	1 hours
	<b>Unit 2:</b> Requirements for sustaining life	Living things need energy, gases, water, soil and favourable temperatures. Living things are adapted/ suited to the environment in which they live.	1½ hours	Retain	N/A	1½ hours
Biodiversity [3½ weeks/ 10½ hours]	<b>Unit 1:</b> Classification of living things	Biodiversity of the Earth made up of plants, animals and microorganisms. Living organisms classified according to similar characteristics. Five main Kingdoms. Kingdoms further subdivided Phyla/ Divisions, then Classes, then Orders, then Genera, then Species.	4½ hours	Retain. Let learners identify one organism to classify into the kingdoms, phyla/divisions, classes, orders, genera and species. Use the learners organisms similar and different characteristics to show how they are classified.	N/A	3 hours
	<b>Unit 2:</b> Diversity of animals	Classify vertebrates or invertebrates. Five classes of vertebrates. Two classes of invertebrates.	3 hours	Retain	N/A	3 hours
	<b>Unit 3:</b> Diversity of plants	Plants classified as with seeds or without seeds. Seeds are classified as Angiosperms or Gymnosperms. Angiosperms are grouped into dicotyledons and monocotyledons.	3 hours	Retain. Let learners revise photo synthesis from Grade 6, as a way to save on teacher talking time.	N/A	2 hours

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY *2		
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	TIME ALLOCATION *1	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING	TIME
Sexual reproduction [3½ weeks/ 10½ hours]	Unit 1: Sexual reproduction in Angiosperms	The sexual organs of angiosperms. Pollination and fertilisation. The importance of pollinators in the production of food crops.	4½ hours	Retain	N/A	4½ hours
	Unit 2: Human reproduction	Puberty. Male and female production organs. Pregnancy and pregnancy preventative measure. Sexually transmitted diseases.	6 hours	Retain	N/A	6 hours
Variation [1 week/ 3 hours]	Unit 1: Variations exists within a species	Homo sapiens (humans) all belong to the same species but have variations in some characteristics.	3 hours	Retain	N/A	3 hours
ASSESSMENT	INFORMAL ASSESSMENT	Revision/homework questions				
	SBA (FORMAL)	Formal practical task				
 <b>TOTAL TIME = 9 WEEKS/27 HOURS</b>				 <b>TOTAL TIME SAVED = 1 WEEK/3 HOURS</b>		

\*1 The per unit time allocation listed, is an estimate of the time taken to teach that unit. This is not specified in CAPS but is an estimate from experienced teachers.

\*2 Assuming that Term 1 content was taught before school closure – therefore no proposal for survival strategy for Term 1

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	CAPS TIME ALLOCATION *1	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
Properties of materials [2 weeks/ 6 hours to 1 weeks/ 3 hours]	Unit 1: Physical properties of materials	Relate materials properties to its use. Boiling point, strength, flexibility, conductivity, cost, colour, texture.	3 hours	2 hours	Retain. Learners should already be familiar with some properties. Use two materials, such as concrete and steel, as comparisons, and work through the properties.	Teach this section on properties with other units such as Separating mixtures, Unit 3. For example, consider the properties of the material you are recycling. *3
	Unit 2: Impact on the environment	Producing and using materials have an impact on the environment.	3 hours	1 hour	Retain, but give learners an activity to do in the class, where they investigate the impact different materials have on the environment. Have a class discussion on their findings.	
Separating mixtures [2 weeks/ 6 hours to 2 weeks/ 5 hours]	Unit 1: Mixtures	A mixture is made up of two or more substances and can be separated.	2 hours	2 hours	Let learners revise mixtures from Grade 6 as pre-reading to save time. *2	
	Unit 2: Methods of physical separation	Different methods of separation are used, depending on the physical properties of the materials in the mixture.	2 hours	2 hours	Let learners revise Grade 6 methods of separation, sieving, hand sorting and filtration. *2. Focus on new methods including separation using magnets, evaporation, distillation, chromatography.	
	Unit 3: Sorting and recycling materials	Every person's responsibility to recycle, and only some materials can be recycled. Non-recyclable materials must be dumped.	2 hours	1 hour	Learners can design posters to educate the school or encourage learners to set up a recycling station at home. In this way, this section can be ongoing throughout the whole year. This should reduce teacher talking time.	

\*1 The per unit time allocation listed, is an estimate of the time taken to teach that unit. This is not specified in CAPS but is an estimate from experienced teachers.

\*2 Flipped concept, learners prepare before lesson and then class discussion around content

\*3 Concepts to be taught holistically together to reduce time spent teacher talking time.

\*4 Concepts taught again in different grades. Reduce content to basic introductory information.

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	CAPS TIME ALLOCATION *1	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
Acids, bases and neutrals [2 weeks/ 6 hours to 2 weeks/ 6 hours (no change)]	Unit 1: Tastes of substances	The human tongue can sense four different tastes Not all substances are safe to taste.	2 hours	2 hours	The content of this unit can be reduced significantly, so more focus and attention can be given to Unit 3. Acids and bases, Unit 3 is important for Grade 9 work. *4	Some of the content from this unit can be taught holistically with Unit 3. *3
	Unit 2: Properties of acids, bases and neutrals	Acids tastes sour, feel rough on the skin, and are corrosive. Bases taste bitter, feel slippery, and are corrosive. Neutrals are neither acids nor bases.	2 hours	2 hours	The content of this unit can be reduced significantly, so more focus and attention can be given to Unit 3. Acids and bases, Unit 3 is important for Grade 9 work. *4	Some of the content from this unit can be taught holistically with Unit 3. *3
	Unit 3: Acid-base indicators	Red and blue litmus paper can be used to test whether a substance is an acid or base.	2 hours	2 hours	Retain. This is sometimes a difficult concept for learners to understand. Show a virtual experiment of litmus paper in acids, bases and neutral substances – ensure learners adhere to social distancing if experiment is demonstrated in class. Use the experiment as an opportunity for incidental learning.	Teach this section holistically with Unit 1, and Unit 2. For example, set up an experiment where you taste test lemon juice, and showcase to learners how the litmus test works, and then discuss the properties of lemon/acids. *3

\*1 The per unit time allocation listed, is an estimate of the time taken to teach that unit. This is not specified in CAPS but is an estimate from experienced teachers.

\*2 Flipped concept, learners prepare before lesson and then class discussion around content

\*3 Concepts to be taught holistically together to reduce time spent teacher talking time.

\*4 Concepts taught again in different grades. Reduce content to basic introductory information.

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	CAPS TIME ALLOCATION *1	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
Introduction to the Periodic Table of Elements [2 weeks/ 6 hours to 2 weeks/ 6 hours(no change)]	Unit 1: Arrangement of elements on the Periodic Table	Classification system for all the elements that make up matter. Elements are arranged into 3 categories: metals, non-metals and semi-metals.	3 hours	3 hours	Only spend an hour introducing learners to the basic concepts of the periodic table.	Periodic Table of elements discussed again in Grade 8. Basic concepts can be taught here but teaching time can be limited and refocused to Grade 8. Teach this unit 1 holistically with Unit 2. *4
	Unit 2: Some properties of metals, semi-metals and non-metals	Metals are shiny, ductile, malleable, solid, and have high melting and boiling points. Non-metals have many different properties. Semi-metals are solids and have some properties of metals and some properties of non-metals.	3 hours	3 hours	Properties and uses of metals and non-metals done in Grade 5. Try and link to Periodic Table.	Teach this unit 2 holistically with Unit 1. *3
ASSESSMENT	INFORMAL ASSESSMENT	Revision/homework questions				
	SBA (FORMAL)	Test (counts 100% towards term mark)				
			TOTAL TIME = 8 WEEKS/24 HOURS	TOTAL REVISED TIME = 7 WEEKS/21 HOURS		

\*1 The per unit time allocation listed, is an estimate of the time taken to teach that unit. This is not specified in CAPS but is an estimate from experienced teachers.

\*2 Flipped concept, learners prepare before lesson and then class discussion around content

\*3 Concepts to be taught holistically together to reduce time spent teacher talking time.

\*4 Concepts taught again in different grades. Reduce content to basic introductory information.



CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	CAPS TIME ALLOCATION *1	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
Sources of energy [1 week/ 3 hours to 1 week/ 3 hours (no change)]	<b>Unit 1:</b> Non-renewable sources of energy	Energy is needed to make everything work, move or live. Non-renewable sources of energy cannot be replaced once used.	1½ hours	1½ hours	Retain.	Teach with Planet Earth fossil fuels, from Term 4. *3
	<b>Unit 2:</b> Renewable sources of energy	Renewable sources of energy are continually replaced such as hydropower, wind, sunlight and biofuel.	1½ hours	1½ hours	Let learners lead the class discussion by saying what they know about renewable energy sources. *2. Correct any misconceptions.	
Potential and Kinetic Energy [2 weeks/ 6 hours to 2 weeks/ 6 hours (no change)]	<b>Unit 1:</b> Potential energy	Define potential energy as stored energy. Examples of potential energy is rubber band, cell, fuel, and food. Energy measured in Joules.	1½ hours	1½ hours	Retain. Important concepts for sciences in higher grades.	Teach these four units together *3. Energy is an abstract concept that will be developed in higher grades. *4
	<b>Unit 2:</b> Kinetic energy	Define kinetic energy as moving energy. Examples include wind blowing, water falling, current flowing through a circuit.	1½ hours	1½ hours	Retain. Important concepts for sciences in higher grades.	Teach these four units together *3. Energy is an abstract concept that will be developed in higher grades. *4
	<b>Unit 3:</b> Potential and kinetic energy in systems	System are parts working together. Potential and kinetic energy are involved in mechanical, thermal, electrical and biological systems.	1½ hours	1½ hours	Retain. Important concepts for sciences in higher grades.	Teach these four units together *3. Energy is an abstract concept that will be developed in higher grades. *4
	<b>Unit 4:</b> Law of conservation of energy	Energy can be converted, but not created or destroyed.	1½ hours	1½ hours	Spend some time explaining the concept of this unit, and them give learners an activity.	Teach these four units together *3. Energy is an abstract concept that will be developed in higher grades. *4

\*1 The per unit time allocation listed, is an estimate of the time taken to teach that unit. This is not specified in CAPS but is an estimate from experienced teachers.

\*2 Flipped concept, learners prepare before lesson and then class discussion around content

\*3 Concepts to be taught holistically together to reduce time spent teacher talking time.

\*4 Concepts taught again in different grades. Reduce content to basic introductory information.

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	CAPS TIME ALLOCATION *1	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
Heat transfer [2 weeks/ 6 hours to 2 weeks/ 6 hours (no change)]	Unit 1: Heating as a transfer of energy	Heating is when energy moves from hotter body to cooler body. Three methods of heat transfer. Introduction the terms conduction, convection and radiation.	1½ hours	1½ hours	Retain	
	Unit 2: Conduction	Transfer of heat between solid objects in direct physical contact with each other.	1½ hours	1½ hours	Reduce teacher talking time, by explaining the different heat transfer concepts to learners through experiments.	Use one example of a pot over a fire to explain Conduction, Convection and Radiation (Unit 2, 3 and 4). Conduction is the transfer of the heat from the hot pot to the hot pot handle, Convection is the transfer of heat from the fire to the soup, Radiation is the transfer of heat from the fire through the air to a person sitting near the fire. *3
Insulation and energy saving [2 weeks/ 6 hours to 1 week/ 3 hours]	Unit 3: Convection	Transfer of heat by the movement of liquid or gas particles.	1½ hours	1½ hours	Reduce teacher talking time, by explaining the different heat transfer concepts to learners through experiments.	Another example that shows all three heat transfer methods is a thermos flask. The integration of these methods of heat transfer can also be used to introduce the next topic, insulation *3
	Unit 4: Radiation	Transfer of heat and does not require physical contact or movement of particles.	1½ hours	1½ hours	Reduce teacher talking time, by explaining the different heat transfer concepts to learners through experiments.	Use the examples given in Unit 2 and Unit 3 to explain the concept of radiation. *3
	Unit 1: Using insulating materials	Insulating materials slow down heat from being lost through conduction, convection or radiation.	6 hours	3 hours	Pose the question to learners, 'What is insulating materials. If available, a short video can be shown on topic, while learners take notes. Teacher supply them with short summary afterwards	Use the concepts taught in the topic above to introduce insulation. *3

1 The per unit time allocation listed, is an estimate of the time taken to teach that unit. This is not specified in CAPS but is an estimate from experienced teachers.

\*2 Flipped concept, learners prepare before lesson and then class discussion around content

\*3 Concepts to be taught holistically together to reduce time spent teacher talking time.

\*4 Concepts taught again in different grades. Reduce content to basic introductory information.


CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	CAPS TIME ALLOCATION *1	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
Energy transfer to surroundings [1 week/ 3 hours to 1 week/ 3 hours (no change)]	Unit 1: Useful and 'wasted' energy	Energy escapes into the environment in the form of sound and heat. This is called wasted energy.	3 hours	3 hours	Retain. Give learners brief introduction to concept, and then ask learners to think of examples of wasted energy. *2. Discuss this in class and clear up any misconceptions.	
The national electricity supply system [1 week/ 3 hours to 0 weeks/ 0 hours]	Unit 1: Energy transfers in the national grid	Sequence of energy transfer in national grid is 1) from coal, oil, gas, wind, water, nuclear 2) to the turbines that move the energy to a generator. 3) generator converts mechanical energy into electrical energy, and 4) electricity is transfers along wires to appliances.	1½ hours	0 hours	Omit	The national electricity supply system is removed in the revised ATP.
	Unit 2: Conserving electricity in the home	South Africa has a limited supply of electricity, and we need to not waste electricity by using energy saving lightbulbs, wearing warm clothes, matching pot size to the stove plate, etc.	1½ hours	0 hours	Omit	The national electricity supply system is removed in the revised ATP.

\*1 The per unit time allocation listed, is an estimate of the time taken to teach that unit. This is not specified in CAPS but is an estimate from experienced teachers.

\*2 Flipped concept, learners prepare before lesson and then class discussion around content

\*3 Concepts to be taught holistically together to reduce time spent teacher talking time.

\*4 Concepts taught again in different grades. Reduce content to basic introductory information.

CAPS CURRICULUM			SURVIVAL GUIDE STRATEGY			
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	CAPS TIME ALLOCATION *1	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
ASSESSMENT	INFORMAL ASSESSMENT	Revision/homework questions.				
	SBA (FORMAL)	Practical Task/ Investigation (counts 40% towards term mark) Test (counts 60% towards term mark)				
 <b>TOTAL TIME = 9 WEEKS/27 HOURS</b>			 <b>TOTAL REVISED TIME = 7 WEEKS/21 HOURS</b>			

\*1 The per unit time allocation listed, is an estimate of the time taken to teach that unit. This is not specified in CAPS but is an estimate from experienced teachers.

\*2 Flipped concept, learners prepare before lesson and then class discussion around content

\*3 Concepts to be taught holistically together to reduce time spent teacher talking time.

\*4 Concepts taught again in different grades. Reduce content to basic introductory information.



CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	CAPS TIME ALLOCATION *1	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
Relationship of the Sun to the Earth [4 weeks/ 12 hours to 4 weeks/ 12 hours (no change)]	Unit 1: Solar energy and the Earth's seasons	Sun radiates heat to the Earth. Earth spins on its tilted axis once a day. Earth orbits around the Earth. Creation of the four seasons. Length of the day impacted by tilt of Earth's axis.	4 hours	4 hours	Learners to revise <i>Solar System and movement of plants and Moon</i> from Grade 6. *2	Incorporate early indigenous knowledge from the topic: Historical development of astronomy, into this unit. *3
	Unit 2: Solar energy and life on Earth	Plants and animals need energy for life to be sustained on Earth.	4 hours	4 hours	Learners to revise Grade 5 and 6 work on solar energy for life on Earth. *2 Retain and teach the remainder of the content as per curriculum.	
	Unit 3: Stored solar energy	Dead plants and animals form coal, oil, and gas, as a form of stored energy. This forms from pressure and layers of mud and soil over time.	4 hours	4 hours	This is done again in Grade 8, so just introduce basic concepts. *4	Teach fossils within Unit 3 with the section on non-renewable energy from Term 3. Sources of energy, Unit 1. *3
Relationship of the Moon to the Earth [2 weeks/ 6 hours to 2 weeks/ 6 hours (no change)]	Unit 1: Relative positions	The Moon revolves around the Earth in its orbit.	2 hours	2 hours	Learners to revise the Moon and its orbit.	Explain tides while discussing the Moon.
	Unit 3: Tides	Define tides. Tides are caused mostly by the gravity of the Moon. Create unique shoreline ecosystems.	2 hours	2 hours		Teach Unit 3 before Unit 2. This should reduce the revision time required on Moons before explaining tides.
	Unit 2: Gravity	Define gravity. Bigger objects exert a stronger pull. Objects that are closer together also have a stronger pull than the same objects that are further apart.	2 hours	2 hours	Retain. Important concept for later grades.	

\*1 The per unit time allocation listed, is an estimate of the time taken to teach that unit. This is not specified in CAPS but is an estimate from experienced teachers.

\*2 Flipped concept, learners prepare before lesson and then class discussion around content

\*3 Concepts to be taught holistically together to reduce time spent teacher talking time.

\*4 Concepts taught again in different grades. Reduce content to basic introductory information.

CAPS CURRICULUM				SURVIVAL GUIDE STRATEGY		
TOPICS	UNITS	CONTENT SPECIFICATION/ CONCEPTS	CAPS TIME ALLOCATION *1	RECOVERY TIME ALLOCATION	CURRICULUM TRIMMING	CURRICULUM REORGANISATION/ GROUPING
Historical development of astronomy [2 weeks/ 6 hours to 1 week/ 3 hours]	Unit 1: Early indigenous knowledge	People used the movement of planets and the moon to help measure time. This also helped people with planting, finding direction and celebrate special holy days.	3 hours	0 hours	Omit	This Unit has been excluded in the revised ATP.
	Unit 2: Modern developments	Discuss important modern astronomy discoveries from Copernicus, Galilei, Kepler, and Newton.	3 hours	3 hours	Retain. Reduce teacher talking time by letting learners do research on the astronomers' discoveries. *2 Spend some time discussing learners' findings.	
ASSESSMENT	INFORMAL ASSESSMENT	Revision/homework questions.				
	SBA (FORMAL)	Test/Exam (Dates TBC by DBE)				
 <b>TOTAL TIME = 8 WEEKS/24 HOURS</b>				 <b>TOTAL REVISED TIME = 7 WEEKS/21 HOURS</b>		

- \*1 The per unit time allocation listed, is an estimate of the time taken to teach that unit. This is not specified in CAPS but is an estimate from experienced teachers.
- \*2 Flipped concept, learners prepare before lesson and then class discussion around content
- \*3 Concepts to be taught holistically together to reduce time spent teacher talking time.
- \*4 Concepts taught again in different grades. Reduce content to basic introductory information.







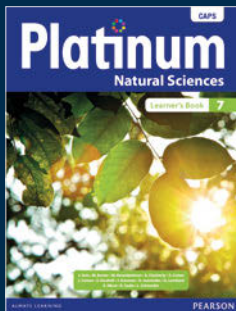
# Pearson South Africa

At Pearson, home of *Maskew Miller Longman* and *Heinemann*, we're here to help people make progress in their lives through learning.

We work with teachers and learners to create and continually improve our wide range of products and services. We create content in all 11 official languages for learners from pre-school to Grade 12. Whether it's our trusted CAPS-approved textbooks, digital and supplementary resources, or professional development courses, we put the learner at the heart of everything we do.

Every day all over South Africa, our products and services help learning flourish – because wherever learning flourishes, so do people.

## Also available:



### Contact us

T: 021 532 6008

E: [pearsonza.enquiries@pearson.com](mailto:pearsonza.enquiries@pearson.com)

### Online Teacher Support

[www.classroomsolutions.co.za](http://www.classroomsolutions.co.za)

Learn more at [za.pearson.com](http://za.pearson.com)

<http://za.pearson.com>

