

# PLANNER & TRACKER FOR RECOVERY ANNUAL TEACHING PLAN (ATP)

2021 - 2023



**NATURAL SCIENCES**

**GRADE 7 TERM 2**

Helping teachers and learners to catch up with learning losses, master new content and acquire skills for the future.



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- Please note that a Natural Sciences structured learning programme that includes daily lesson plans and classroom resources is available for download from [www.nect.org.za](http://www.nect.org.za)
- This is a zero-rated website, so there are no data costs for downloads.
- This document can be used independently of the structured learning programme.



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# **Planner & Tracker for Recovery ATP**

## **Natural Sciences**



**Grade 7 Term 2**

**2021 - 2023**

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## Introduction

Dear Natural Sciences Teachers,

The COVID-19 Pandemic has left us with an enormous challenge in education. As we return to 'normal schooling', we all have to work smarter and harder to ensure that our system recovers.

This document is designed to help you achieve this. By systematically working through this plan, we are confident that you can address the loss of teaching and learning time, and bring your learners to the level where they need to be in terms of NS.

We thank you in advance for the commitment, dedication and hard work that is required of you.

You are truly building our nation.

With very best wishes for the term ahead,

**The DBE / NECT Recovery ATP Trackers Team**

## Overview

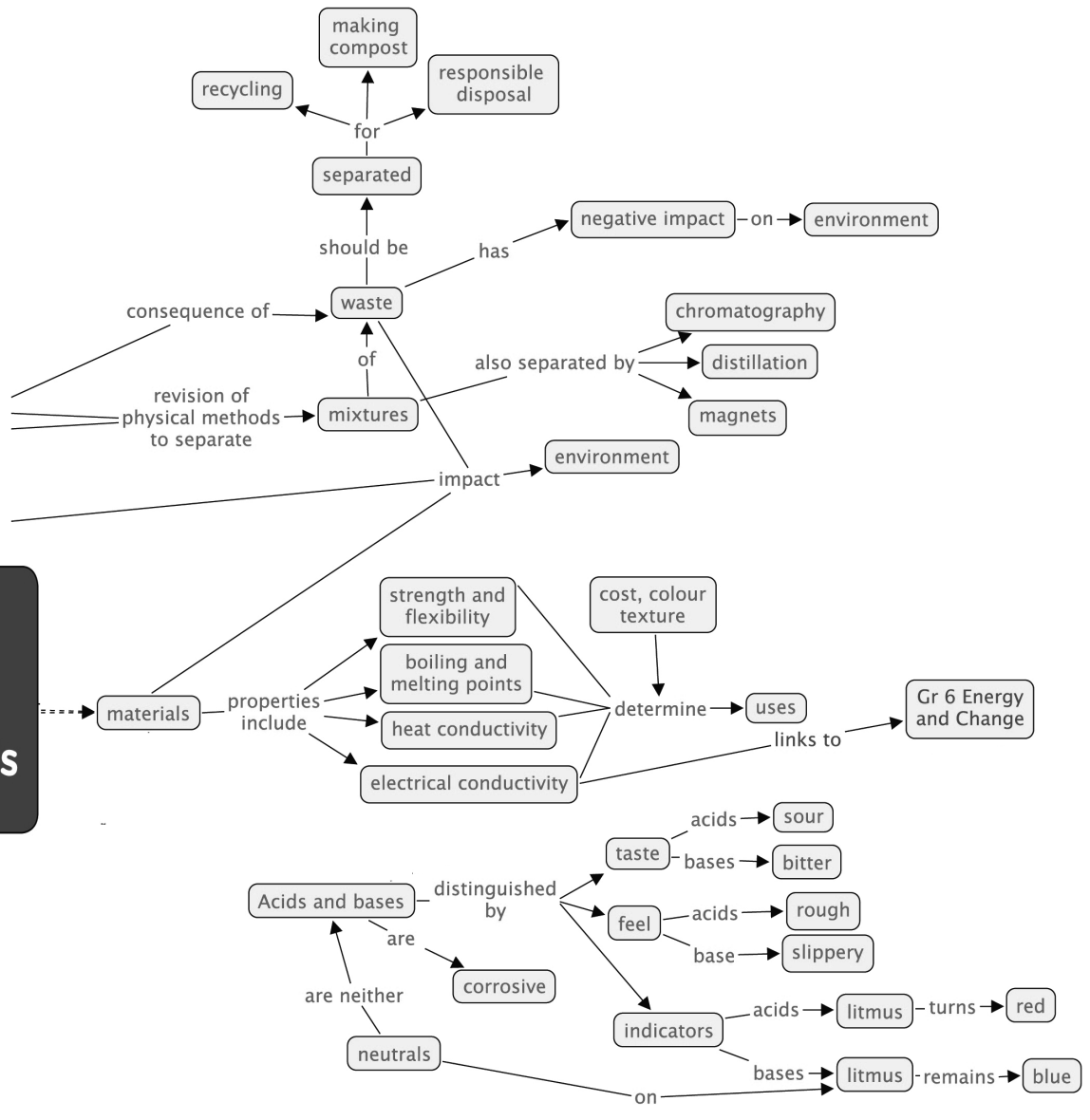
Please continue to keep the following key principles in mind throughout the recovery journey:

- The development of **Science Process Skills** is key to the teaching and learning of the subject. Focussing on these skills is critical.
- Learners should be given as many opportunities as possible to **write regularly and read for meaning**, in Natural Science, in order to develop **language skills** as well. Due to learning losses, as a result of the Covid pandemic, it is the responsibility of every educator to develop these literacy skills.
- It is very important to give learners a sense of **how science applies to their daily lives**, and of **the value that science adds to their lives**. Hold a brief discussion on this point when introducing a new topic, and invite learners to contribute their ideas on the uses and value that this topic has.
- At the end of every topic, come back to the topic overview, and **reflect on what has been learnt and taught**. In particular, it is important to note your challenges and ideas for future improvement, so that you can improve your teaching the next year.
- At the core of all scientific activities is the need to **ask questions**. These questions help us seek answers through observation and experimental design. The results of these questions should raise more questions. It is this natural curiosity that all teachers, and especially science teachers, should be encouraging in their classrooms. **Encourage curiosity and questions that investigate, inquire and probe**.
- **Build a solid conceptual foundation** for learners. A **conceptual chain** for the phase is provided at the start of this document. It is important for all NS teachers to work cohesively to ensure that learners are equipped with a solid understanding of the required concepts, by the time they leave the phase.
- Using the **CONCEPTUAL CHAIN** provided, **work together** as a department to:
  - a. Check that all **concepts for the phase are covered** in your school's recovery plan.
  - b. **Check for overlaps** across the grades.
  - c. **Identify the weak links in the conceptual chain** - points where learners struggle and may be the source of misconceptions or common errors.
  - d. Decide how to **emphasise critical concepts from previous grades** especially where topics have moved from a different grade in the revised ATP.

Gr 7

Topics recovered from Grade 6, Term 2

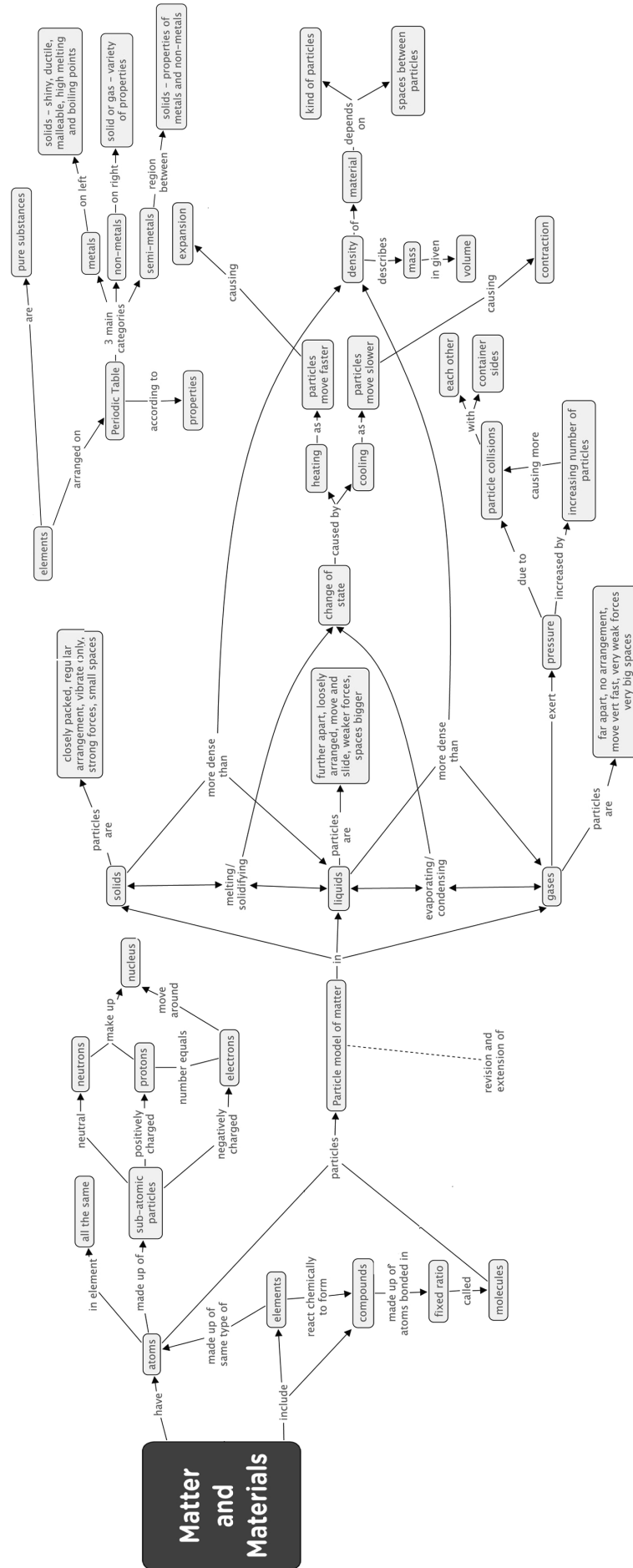
**Matter and Materials**



The concept maps in this section have been adapted from **Thunderbolt Kids resources** published by **Siyavula**.

Gr 8

Topic recovered from Grade 7, Term 2



The concept maps in this section have been adapted from **Thunderbolt Kids** resources published by **Siyavula**.

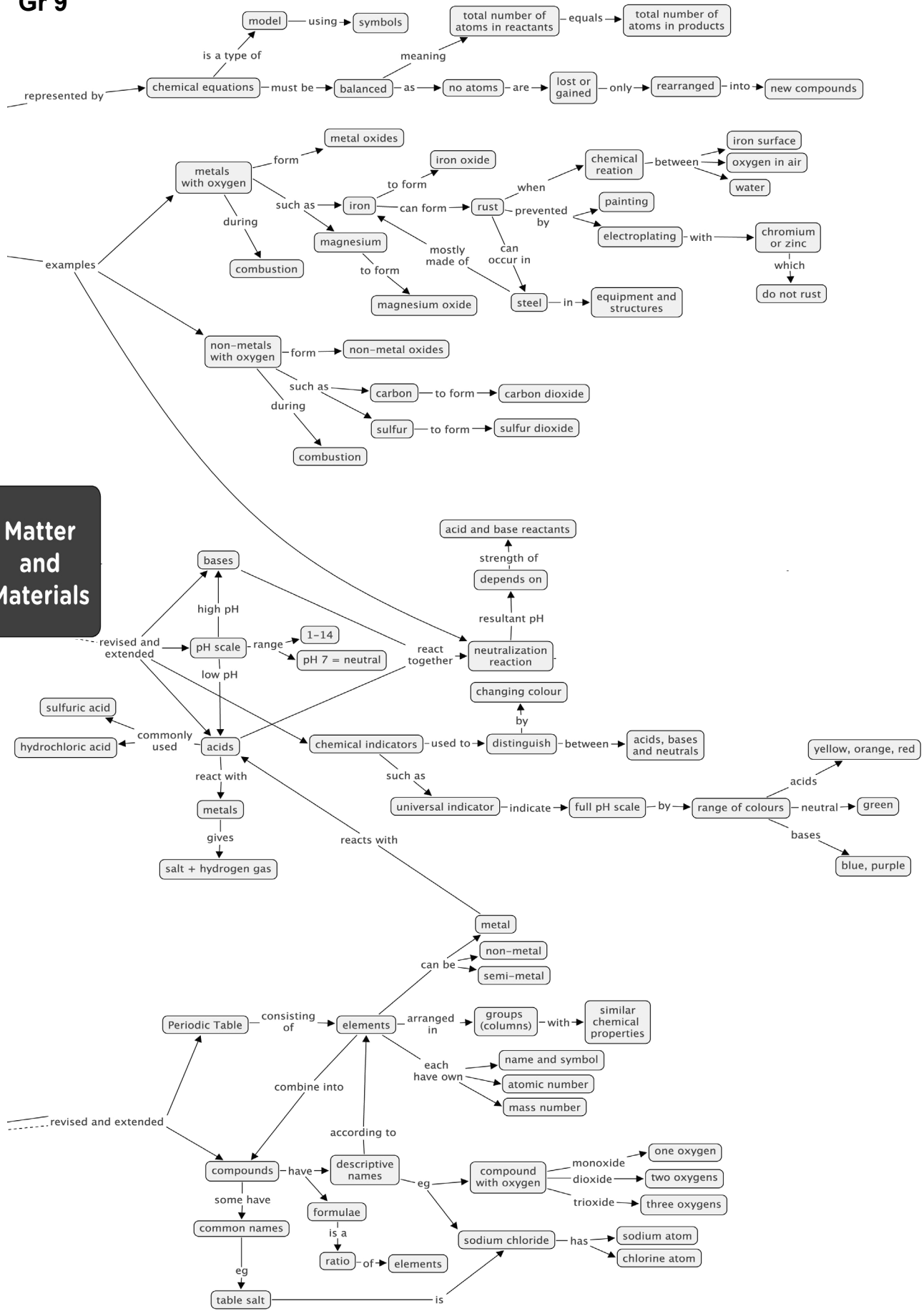


# Senior Phase Conceptual Chain: Grade 9

Gr 9

Topic recovered from Grade 8, Term 2

## Matter and Materials



The concept maps in this section have been adapted from **Thunderbolt Kids** resources published by **Siyavula**.

## Amendments to the Annual Teaching Plan

The Recovery ATP for Natural Sciences has the **same content as in CAPS**, however, this content has been arranged as follows for Term 2:

Some **topics from Grade 6** have been **included/recovered**:

1. **Solids, liquids and gases** (0,5 weeks)
2. **Solutions as a special mixture** (1 week)
3. **Dissolving** (1 week)

Some topics **remain**:

1. **Properties of Materials** (reduced in time to 1,5 weeks)
2. **Separating mixtures** (2 weeks)
3. **Acids, bases and neutrals** (2 weeks)

Some topics have been **removed completely**:

1. **Introduction to the Periodic Table of Elements**

Directions on how to cover all required topics are provided in the Tracker that follows.

## Amendments To The Programme Of Assessment

- The Programme of Assessment is aligned to the *Revised Section 4 of CAPS*.
- Both formal and informal assessment should continue as normal.
- Recording of the informal assessment is left to the discretion of the teacher.
- The 2022 formal assessment tasks for Grade 7 are as follows:

	TERM 1	TERM 2	Term 4	TERM 4
<b>Practical Task/Investigation/Projects</b>	20 marks	20 marks	30 marks	-
<b>Test</b>	60 marks	80 marks	60 marks	80 marks

A sample Assessment Test and Memorandum for Grade 7 Term 2 is included in this document.

**Notes:**

- **Column 1** shows the **time allocation** per topic.
- **Column 2** shows the **Recovery ATP requirements** for Grade 7 Term 2.
- **Column 3** explains any **changes** that have been made to the teaching plan.
- **Column 4** shows **where in the NECT lesson plans** this is covered.
- **Column 5** shows **where in the approved textbooks** this is covered.
- Finally, if, for any reason, the **Term 2 teaching time** for NS is **reduced**, please ensure that the **KEY CONCEPTS** listed below each table are thoroughly covered.

**Key To Approved Textbook Abbreviations:**

<b>PLAT</b>	Platinum Natural Sciences Grade 7 Maskew Miller Longman
<b>SFA</b>	Solutions for All Natural Sciences Grade 7 MacMillan
<b>OX</b>	Oxford Successful Natural Sciences Grade 7 Oxford University Press
<b>SO</b>	Spot On Natural Sciences Grade 7 Pearson
<b>TC</b>	Top Class Natural Sciences Grade 7 Shuter and Shooter
<b>SIBB</b>	Sasol Inzalo Bk B Natural Sciences Grade 7 Sasol
<b>SbS</b>	Step-by-Step Natural Sciences Grade 7 Van Schaik
<b>VA</b>	Via Afrika Natural Sciences Grade 7 Via Afrika
<b>PEL</b>	Pelican Natural Sciences Grade 7 Global MBD Africa

TIME ALLOCATION	DBE RECOVERY ATP REQUIREMENTS	NOTES	NECT LESSON PLANS: LESSONS	APPROVED TEXTBOOKS	DATE COMPLETED
Week 1 0,5 weeks	Solids, liquids and gases 1. Arrangement of particles	This topic has been recovered from Grade 6 Term 2	<b>Gr6 Term 2 Lesson Plans</b> Lesson 1A: Arrangement of particles	S&M Gr6 VIVA Gr6 PLAT Gr6 SFA Gr6 DbD Gr6 OX Gr6 SO Gr6 TC Gr6 SIBB Gr6	59 – 61 54 - 57 56 - 60 89 - 93 58 - 63 48 - 49 32 51 - 53 104 - 117

**Scaling down**

If the Term 2 teaching time is reduced, ensure that learners have a thorough understanding of the following key content and concepts:

**Solids, liquids and gases**

- Identify the 3 states of matter in everyday life.
- Explain how the distance between molecules helps identify what state the matter is in.
- Describe the different arrangements of particles in solids, liquids and gases.
- Illustrate the arrangement of particles in solids, liquids and gases.

TIME ALLOCATION	DBE RECOVERY ATP REQUIREMENTS	NOTES	NECT LESSON PLANS: LESSONS	APPROVED TEXTBOOKS	DATE COMPLETED
Weeks 1 – 2 1,5 weeks	Properties of materials 1. Boiling and melting points 2. Electrical conductivity 3. Heat conductivity	This topic has been reduced to 1,5 weeks	<b>Gr 7 Term 2 Lesson Plans</b> Lesson 1A: Physical properties of materials Lesson 1B: Boiling and melting points Lesson 1C: Heat and electrical conductivity Lesson 2A: Factors to consider when choosing materials	OX Gr7 VA Gr7 PLAT Gr7 SO Gr7 SbS Gr7 PEL Gr7 SFA Gr7 TC Gr7 SIBB Gr7	57 – 61 58 – 65 65 - 70 57 – 63 72 – 79 81 – 88 101 – 119 70 – 78 147 - 167

If the Term 2 teaching time is reduced, ensure that learners have a thorough understanding of the following key concepts:

**Properties of materials**

- Material has physical properties like strength, flexibility, melting and boiling points, electrical and heat conductivity.
- Suitability of material for use depends on their physical properties.
- Water can be a solid (ice), a liquid or a gas (water vapour).
- Melting occurs when a solid substance changes into a liquid state. Melting point is the temperature at which a solid becomes a liquid.
- Different substances have different melting points. Ice melts at about 0°C, Iron melts at 1538°C.
- If you heat a liquid, it will eventually boil. This is called the boiling point.
- Different substances boil at different temperatures. Ice boils at about 100°C, Iron boils at 2862°C.
- Boiling and melting points can vary slightly depending on air pressure or impurities in the liquid.
- Electricity moves as an electrical current. Materials that allow electricity to move through them are called electrical conductors. E.g. metals like copper and steel.
- Materials that do not allow electricity to move through them are called insulators. E.g. plastic
- Electrical wiring is made up of copper as it conducts electricity, covered with an insulator like plastic to protect from electrical shocks.

TIME ALLOCATION	DBE RECOVERY ATP REQUIREMENTS	NOTES	NECT LESSON PLANS: LESSONS	APPROVED TEXTBOOKS	DATE COMPLETED
Week 3 1 week	Solutions as special mixtures 1. Solutions 2. Soluble substances 3. Insoluble substances	This topic has been recovered from Grade 6, Term 2.	<u>Grade 6 Term 2 Lesson Plans</u> Lesson 2B: Mixtures Lesson 3A: Solutions with uniform appearance Lesson 3B: Separating solutions Lesson 3C: Crystallisation Lesson 4C: Insoluble substances	S&M Gr6 65 – 74 VIVA Gr6 63 – 72 PLAT Gr6 70 – 80 SFA Gr6 107 – 119 DbD Gr6 74 – 83 OX Gr6 56 – 65 SO Gr6 36 – 39 TC Gr6 58 – 64 SIBB Gr6 22 – 23; 134 - 150	

If the Term 2 teaching time is reduced, ensure that learners have a thorough understanding of the following key concepts:

**Solutions as special mixtures**

- Solutions are a special type of mixture. A solution is a mixture of a solid and a liquid – when the solid looks like it has dissolved into the liquid.
- A solution is uniform when it looks the same right through – we cannot see the different parts of the mixture.
- Solids can be soluble or insoluble. Soluble – a solid that dissolves in water. Insoluble – a solid that does not dissolve in water. Give examples of each.
- The solids that dissolve are called the solutes. The liquid that the solute dissolves in is called the solvent.
- Soluble substances: some can be recovered by evaporation (heating) or dissolving. E.g. Salt separated from sea water
- Crystallisation is the process of forming crystals from a solution, through heating the liquid so that it evaporates (changes to a gas) and leaves the solute behind as crystals
- In a solution, the solute (e.g. Salt) seems to disappear into the solvent (e.g. Water). The solute particles are spread between the solvent particles. This is called dissolving.
- Insoluble substances: some substances will not form a solution in water. They do not dissolve in water. E.g. Oil and water

TIME ALLOCATION	DBE RECOVERY ATP REQUIREMENTS	NOTES	NECT LESSON PLANS: LESSONS	APPROVED TEXTBOOKS	DATE COMPLETED
Week 4 1 week	Dissolving 1. Rates of dissolving	This topic has been recovered from Grade 6, Term 2.	<b><u>Grade 6 Term 2 Lesson Plans</u></b> Lesson 5A: Factors that affect dissolving Lesson 5B: Investigating rates of dissolving	S&M Gr6 VIVA Gr6 PLAT Gr6 SFA Gr6 DbD Gr6 OX Gr6 SO Gr6 TC Gr6 SIBB Gr6	75 – 80 73 – 80 81 – 87 127 – 143 86 – 90 66 – 69 40 – 41 66 – 73 156 - 169

If the Term 2 teaching time is reduced, ensure that learners have a thorough understanding of the following key concepts:

**Dissolving**

- Temperature, stirring, shaking, and size of the solute all affect the rate of dissolving.
- Opportunities to experiment and see the effects of stirring, shaking and size of the solute on how fast the solute dissolves.

TIME ALLOCATION	DBE RECOVERY ATP REQUIREMENTS	NOTES	NECT LESSON PLANS: LESSONS	APPROVED TEXTBOOKS	DATE COMPLETED
Week 5 and 6 2 week	Separating mixtures  1. Mixtures 2. Methods of physical separation 3. Sorting and recycling materials		<b><u>Grade 7 Term 2 Lesson Plans</u></b> Lesson 3A: What are mixtures? Lesson 3B: Hand-sorting, sieving and magnets Lesson 3C: Filtration and evaporation Lesson 4A: Distillation and chromatography Lesson 4B: Practical task: Separating a mixture Lesson 4C: Sorting and recycling materials	OX Gr7 64 – 75 VA Gr7 68 – 75 PLAT Gr7 80 – 93 SO Gr7 70 – 81 SbS Gr7 82 – 96 PEL Gr7 98 – 112 SFA Gr7 130 – 163 TC Gr7 84 – 95 SIBB Gr7 175 - 199	

If the Term 2 teaching time is reduced, ensure that learners have a thorough understanding of the following key concepts:

**Separating mixtures**

- Define pure substances as being made up of only 1 type of particle. Explain that a mixture is made up two or more substances – impure substance.
- Explain the difference between mixtures that can be separated by physical means and those that cannot.
- Hand sorting can be done to separate mixtures that are made up of solids that are easy to handle. E.G. Sorting fruit by size and quality.
- Sieving is used to separate mixtures where the solids have different sizes. E.G. Separating sand and stones
- Magnets will attract metals like iron, steel and nickel. In a mixture, if one of the substances is magnetic, a magnet can be used to separate the mixture. E.G. Removing metals from waste dumps.
- Define the terms solution, solute, solvent and insoluble.
- Filtration is a method to separate an insoluble solid from a liquid. E.G. Separating sand and water through material like filter paper or cloth.
- Distillation involves evaporation of the solvent, followed by condensation and collection of the condensed liquid. The lieberg condenser is used to extract pure water from a saltwater solution.
- Chromatography is used to separate mixtures of different pigments/colours, through adding another solvent like water or alcohol.
- The importance of re-using and recycling materials to reduce waste to avoid pollution and spread of disease and to avoid waste of materials and space.



TIME ALLOCATION	DBE RECOVERY ATP REQUIREMENTS	NOTES	NECT LESSON PLANS: LESSONS	APPROVED TEXTBOOKS	DATE COMPLETED
Week 7 and 8 2 weeks	Acids, bases and neutrals 1. Tastes of substances 2. Properties of acids, bases and neutrals 3. Acid-base indicators		<b><u>Grade 7 Term 2 Lesson Plans</u></b> Lesson 5A: What does it taste like? Lesson 5B: Identifying acids Lesson 5C: Identifying bases Lesson 6A: Identifying neutrals Lesson 6B: Litmus paper tests	OX Gr7 VA Gr7 PLAT Gr7 SO Gr7 SbS Gr7 PEL Gr7 SFA Gr7 TC Gr7 SIBB Gr7	76 – 81 76 – 81 95 – 108 83 – 90 97 – 104 118 – 129 168 – 177 96 – 102 206 - 231

If the Term 2 teaching time is reduced, ensure that learners have a thorough understanding of the following key concepts:

**Acids, bases and neutrals**

- The human tongue has taste buds that allow us to identify the 4 different tastes – salty, sweet, sour and bitter.
- Acids taste sour, they feel rough on the skin. Many acids are strong, corrosive and dangerous to taste and feel. E.g. household cleaning products.
- Some foods contain acids, like lemons.
- Bases taste bitter and feel slippery on the skin. Many bases are caustic and dangerous to taste and feel. Bases are the opposite of acids. If the base is soluble in water it is known as an alkali. Bicarbonate of soda is an example of a base.
- Neutral substances are neither bases nor acids. They are not dangerous. Water, cooking oil, sugar solutions and salt solutions are examples of neutrals.
- A neutral substance can be made by reacting an acid with a base. pH scale is used to measure the strength of acids (pH0 to just under pH7) or a base (just above pH7 to pH14). A neutral is in the middle and has a pH of 7.
- Litmus paper is an indicator that changes colour when it comes into contact with an acid, base or a neutral. The substance that is being tested must be in liquid form.

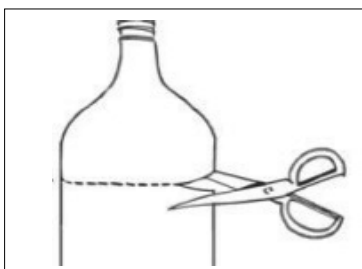
Below is a sample assessment test and memorandum. Please feel free to use this task as is, or to adapt for your context. It is important to ensure that learners are only assessed on work that has been taught.

### Natural Sciences Grade 7 Term 2 Practical Task 20 Marks

**Time allocation: 60 minutes (20 minutes preparation, 40 minutes task time)**

#### NOTES TO THE TEACHER

1. This practical activity will be completed as part of Section E of lesson 4B.
2. This practical will take place during the lesson after the teaching component in Section D, "Accessing Information".
3. The first 20 minutes will be used to teach Section D and prepare learners for the practical task.
4. The next 40 minutes will be used to complete the practical activity as outlined in Section E.
5. The instructions and content of the practical task should be written on the chalkboard for the learners.
6. This task will be done in groups of 6.
7. Each group will need the following in order to complete the investigation:
  - Two glass jars
  - a container of water
  - a tablespoon of sand
  - a teaspoon of salt
  - a tablespoon of a mixture of sump and beans (or a few small stones and leaves)
  - a piece of filter paper, cloth or paper towel
  - a spoon or stick for stirring
  - a plate, polystyrene tray or piece of newspaper to work on
  - a funnel (this can be constructed out of a few sheets of paper or the top of a coke bottle can be cut off)

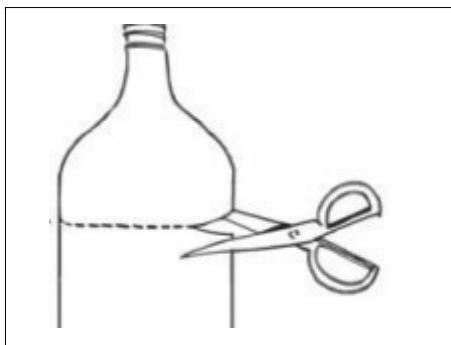


8. Ensure that you have all the materials ready and prepared for the learners before the lesson begins.
9. The memorandum for assessing the practical task is provided.
10. The learners should complete the drawings with a sharp pencil and the written answers should be completed in pen.

## Grade 7 Natural Sciences Term 2 Assessment

This activity will be done in groups.

1. To do this activity, each group will need the following:
  - Two glass jars
  - a container of water
  - a tablespoon of sand
  - a teaspoon of salt
  - a tablespoon of a mixture of sump and beans (or a few small stones and leaves)
  - a piece of filter paper, cloth or paper towel
  - A spoon or stick for stirring
  - a plate, polystyrene tray or piece of newspaper to work on
  - a funnel (this can be constructed out of a few sheets of paper or the top of a coke bottle can be cut off)



2. Ensure you have these materials prepared for each group before the lesson starts.
3. Tell the learners that they are going to be doing an investigation where they will be looking at separating mixtures.
4. They will be looking at a mixture made up of 4 solids and a liquid.
5. They will be planning and conducting an investigation on how to separate this mixture
6. Divide the learners into groups of six.
7. Write the following onto the chalkboard (always try to do this before the lesson starts):

### **PRACTICAL TASK**

1. This practical task will be done in groups of 6.
2. Each group will be doing tasks to separate a mixture.
3. Each person in the group must participate in the investigation and complete the answers to the written activities in their workbooks.
4. Each group will need the following materials and equipment to do the investigation:
  - Two glass jars
  - a container of water
  - a tablespoon of sand
  - a teaspoon of salt
  - a tablespoon of a mixture of sump and beans (or a few small stones and leaves)
  - a piece of filter paper, cloth or paper towel
  - a spoon or stick for stirring
  - a plate, polystyrene tray or piece of newspaper to work on
  - a funnel

8. Read through the practical task with the learners.
9. Remind the learners that in previous lessons they learnt about a number of different ways to separate mixtures.
10. Remind them that they have looked at hand-sorting, filtration, evaporation, sieving and using magnets.
11. Tell the learners that today they are going to be conducting a practical task where they are going to be separating a mixture.
12. Have each group collect the equipment they will need (as listed on the board) for the task.
13. Write the following 'Investigation method' onto the chalkboard:

### **METHOD**

- 1a. Mix the sand, salt, sump and beans (or leaves and stones) together in one of the glass jars.
- 1b. Now pour enough water into the same jar to almost fill it.
- 1c. Give the mixture a good stir.

15. Read through the task with the learners.
16. Ask them if they have any questions.
17. Tell the learners they have 5 minutes to complete this task.
18. Supervise the learners whilst they complete the task and answer any questions that they may have.
19. After 5 minutes call the learners back to attention.
20. Tell the learners that they are now going to work together as a group to separate the mixture into water, salt, sand and sump and beans (or leaves and stones).
21. The following will need to be written on the chalkboard:

## Grade 7 Natural Sciences Term 2 Assessment

### **Task 1:**

**(13 marks)**

- 1a. Choose a name for this practical task.
- 1b. Describe how you would separate the solids from the liquids.
- 1c. What is this separation method called?

*As a group, do the actual task of separation using your chosen method.*

- 1d. Were you able to separate all of the solids from the liquid?
- 1e. What solids were you able to separate from the liquid?
- 1f. Which solids were you unable to separate from the liquid using this method?
- 1g. Why were you unable to separate the salt from the water using this method?
- 1h. What method could you use to separate the salt and dissolved sand from the water?
- 1i. Explain how you would carry out this method of separation.
- 1j. Once you are left with the sand and salt, what method could you use to separate them?

22. Read through task 1 with the learners.
23. Ask them if they have any questions.
24. Tell the learners they have 10 minutes to complete task 1 and to answer the questions in their workbooks.
25. Supervise the learners whilst they complete the task and answer any questions they may have.
26. After 15 minutes call the learners back to attention.
27. Tell the learners that they are now going to work together, as a group, to separate the solids that have been separated from the liquid.
28. The following will need to be written on the chalkboard:

### **Task 2:**

**(7 marks)**

*Pour the solids that you were able to separate from the liquid onto the plate or piece of newspaper.*

- 2a. What method can you use to you separate the samp and beans (or stones and leaves) from the wet sand?
- 2b. What method can you use to separate the samp and beans (or stones and leaves) from each other?

*Try and separate the larger solids (samp and beans or stones and leaves) from the wet sand.*

- 2c. Are the larger solids (samp, beans, stones, leaves) completely free of the sand?
- 2d. Why are the larger particles not completely free from the sand?
- 2e. How can this sand be removed from the larger solids (samp, beans, stones, leaves)?

## Grade 7 Natural Sciences Term 2 Assessment

29. Read through task 2 with the learners.
30. Ask them if they have any questions.
31. Tell the learners they have 10 minutes to complete task 2 and to answer the questions.
32. Supervise the learners whilst they complete the task and answer any questions they may have.
33. After 10 minutes call the learners back to attention.
34. Have learners hand in their workbooks for assessment.
35. Learners must then tidy up investigation areas and hand back equipment.

## Grade 7 Natural Sciences Term 2 Assessment

### Natural Sciences Grade 7 Term 2 Practical task Memorandum 20 Marks

Topic	Activity	Expected answer/outcome	Marks
	<b>1</b>		
Separating mixtures	1a.	Separating a mixture of solids and liquids✓	1
Separating mixtures	1b.	The funnel was lined with a filter paper (or paper towel) and the mixture is poured through the filter allowing the solids to collect in the top and the liquid to pour through.✓✓	2
Separating mixtures	1c.	Filtration✓	1
Separating mixtures	1d.	No✓	1
Separating mixtures	1e.	The samp and beans (stones and leaves)✓ Some of the sand✓	2
Separating mixtures	1f.	The salt✓ Some of the sand✓	2
Separating mixtures	1g.	The salt has dissolved into the water✓	1
Separating mixtures	1h.	Evaporation✓	1
Separating mixtures	1i.	Place the jar in the sun and wait for the water to evaporate off✓	1
Separating mixtures	1j.	Sieving✓	1
	<b>2</b>		
Separating mixtures	2a.	Hand sorting✓✓	2
Separating mixtures	2b.	Hand sorting✓✓	2
Separating mixtures	2c.	No✓	1
Separating mixtures	2d.	Wet sand is still stuck to the larger objects✓	1
Separating mixtures	2e.	Wait for the sand to dry and then dust it from the larger objects✓	1
<b>TOTAL: 20</b>			

## Grade 7 Natural Sciences Term 2 Assessment

**Natural Sciences**  
**Grade 7**  
**Term 2**  
**Test**  
**80 Marks**  
**70 Minutes**

### **NOTE TO THE TEACHER:**

If possible, photocopy this test for each learner. If this is not possible, write the test on the chalkboard.

### **INSTRUCTIONS TO THE LEARNERS**

1. Answer all questions in blue or black ink.
2. Read each question carefully before answering it.
3. Pay attention to the mark allocations.
4. Plan your time carefully.
5. Write your answers in the spaces provided.
6. Write neatly.

### **Practice Question**

Read the question and circle the letter that shows the correct answer.

What do we call the process when plants make their own food ?

- A. hydrosphere
- B. lithosphere
- C. atmosphere
- D. nanosphere

You have answered correctly if you have circled **B**



**Natural Sciences**  
**Grade 7**  
**Term 2**  
**Test**  
**80 Marks**

**PART 1: Life and Living**

**Question 1: Multiple choice**

**[4]**

Read each question and circle the letter that shows the correct answer.

1a. Which one of these is NOT part of the atmosphere? (1)

- A. Nitrogen.
- B. Water vapour.
- C. Carbon dioxide.
- D. Soil

1b. Which of these statements is FALSE? (1)

- A. The hydrosphere is the parts of the Earth covered in water.
- B. Dead organic matter was once living matter.
- C. Water is essential for all life on Earth.
- D. Plants are only found on the lithosphere.

1c. Which of these statements is TRUE? (1)

- A. We call the living part of the Earth, the organic part.
- B. We call the non-living part of the Earth, the biotic part.
- C. We call the living part of the Earth, the inorganic part.
- D. We call the non-living part of the Earth, the botanical part.

1d. Which one of these is not one of the 5 classification kingdoms? (1)

- A. Bacteria.
- B. Fungi.
- C. Organisms.
- D. Protista.

## Grade 7 Natural Sciences Term 2 Assessment

### Question 2: Match the columns

[4]

Instructions:

- Match the sentences in COLUMN A with the words in COLUMN B.
- Draw a line to join the sentence in COLUMN A with the correct word in COLUMN B. Do this as shown in the example below.

COLUMN A			COLUMN B	
example	Needed by all living things to survive		A. Chlorophyll	
2a.	Used by plants to get water and nutrients from soil		B. Roots	
2b.	Allows plants to make their own food using energy from the sun		C. Carnivores	
2c.	Species: Homo sapiens		D. Humans	
2d.	Animals that eat other animals		E. Air	

### Question 3

[6]

Complete the following sentences using words in the block below:

*gills, cartilage, fins, cold-blooded, eggs, shells, scales*

Rewrite the sentences and underline your answers.

- 3a. Fish have a moist skin covered in \_\_\_\_\_.
- 3b. Fish have a skeleton that is made of hard bone or \_\_\_\_\_.
- 3c. Fish have \_\_\_\_\_ which are used for swimming.
- 3d. Fish have \_\_\_\_\_ which are used to take oxygen out of the water for breathing.
- 3e. To reproduce, fish lay \_\_\_\_\_ that have no \_\_\_\_\_.
- 3f. Fish are \_\_\_\_\_ which means their body temperature changes with the temperature of the environment.

## Grade 7 Natural Sciences Term 2 Assessment

### Question 4

[5]

Write the word that is being described in the sentence.

Only write the answer.

4a. Animal with a backbone.

\_\_\_\_\_

4b. Phyla in invertebrate group with soft bodies and a shell for protection.

\_\_\_\_\_

4c. Phyla of most common animals on Earth.

\_\_\_\_\_

4d. Animals without a backbone.

\_\_\_\_\_

4e. Animal class to which snakes belong.

\_\_\_\_\_

### Question 5

[2]

“Plants with seeds are divided into Angiosperms and Gymnosperms

Explain the main differences in reproduction between angiosperms and gymnosperms.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Grade 7 Natural Sciences Term 2 Assessment

### Question 6

[4]

Complete the following table showing the differences between plants and animals:

<u>FLOWER PART</u>	<u>FUNCTION</u>
Anther	
Stigma	
Ovary	
Petals	

### Question 7

[5]

Read the following statements and say whether each one is true or false:

- 7a. Seeds can be dispersed by wind. \_\_\_\_\_
- 7b. Cross-pollination is when pollen is transferred from the anther of one flower to the stigma of another flower. \_\_\_\_\_
- 7c. HIV can be spread by kissing. \_\_\_\_\_
- 7d. If I use contraception, a pregnancy can never happen. \_\_\_\_\_
- 7e. There is no cure for HIV infection. \_\_\_\_\_

## Grade 7 Natural Sciences Term 2 Assessment

### Question 8

[10]

*"Puberty is a confusing time. Our bodies are changing and we often don't feel in control of our emotions."*

- 8a. Using what you have learnt, and the words in the box below, write 5-7 lines explaining what you understand by puberty and what happens to a girl's and a boy's body during puberty.

*ages, hair, skin, breasts, menstruation, hips, voices, penis, hormones, sweating, feelings, pregnancy, sexuality*

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- 8b. Name the hormone that causes these changes in girls. \_\_\_\_\_

- 8c. Name the hormone that causes these changes in boys. \_\_\_\_\_

## Grade 7 Natural Sciences Term 2 Assessment

### PART 2: Matter and Materials

#### Question 9: Multiple choice

[4]

Read each question and circle the letter that shows the correct answer.

9a. Which one of these is NOT a physical property of materials? (1)

- A. Strength.
- B. Flexibility.
- C. .Cost
- D. Conductivity

9b. Which of these statements is FALSE? (1)

- A. Matter takes up space and has mass.
- B. Matter can be a liquid, solid or gas.
- C. Flexible materials break easily.
- D. Materials can be natural or man-made.

9c. Which of these statements is TRUE? (1)

- A. All materials have the same boiling point.
- B. Ice melts at around 0°C.
- C. Water in Johannesburg and water in Cape Town boils at the same temperature.
- D. The boiling point is the same as the melting point of a material.

9d. Which one of these materials is a good conductor of heat? (1)

- A. Metal.
- B. Wood.
- C. Plastic.
- D. Rubber.

## Grade 7 Natural Sciences Term 2 Assessment

### Question 10: Match the columns

[4]

Instructions:

- Match the sentences in COLUMN A with the words in COLUMN B.
- Draw a line to join the sentence in COLUMN A with the correct word in COLUMN B. Do this as shown in the example below.

COLUMN A			COLUMN B
example	Related to or producing heat		A. Rigid
10a.	Unable to bend or be forced out of shape		B. Insulator
10b.	Can be broken down by bacteria		C. Biodegradable
10c.	A material that does not allow the flow of electricity		D. Tensile
10d.	The strength of an object that stops it from breaking when pulled		E. Thermal

### Question 11

[3]

Complete the following sentences using words in the block below:

*variables, fair test, constant, conclusions,*

Rewrite the sentences and underline your answers.

11a. A \_\_\_\_\_ is a scientific investigation that is carefully controlled.

*In a fair test, we compare two or more things.*

11b. The things that remain the same in a fair test are called the \_\_\_\_\_.

11c. The things we change in a fair test are called the \_\_\_\_\_.

## Grade 7 Natural Sciences Term 2 Assessment

### Question 12:

[5]

Write the word that is being described in the sentence.

Only write the answer.

12a. A mixture made up of a solid that is dissolved into a liquid.

\_\_\_\_\_

12b. The property of a solid that does not dissolve into a liquid.

\_\_\_\_\_

12c. Small, microscopic parts that make up matter.

\_\_\_\_\_

12d. The change of state from gas to liquid.

\_\_\_\_\_

12e. A method of separating two liquids that have different boiling points.

\_\_\_\_\_

### Question 13:

[2]

Solute + solvent = solution

Describe a solute and a solvent, highlighting what is different between the two.

13a. Solute:

\_\_\_\_\_

\_\_\_\_\_

13b. Solvent:

\_\_\_\_\_

\_\_\_\_\_



## Grade 7 Natural Sciences Term 2 Assessment

### Question 14

[6]

Place the following substances under the correct columns:

washing powder, oil, water, lemon, bicarbonate of soda, vinegar

<u>ACID</u>	<u>NEUTRAL</u>	<u>BASES</u>

### Question 15

[5]

Read the following statements and say whether each one is true or false:

- 15a. Indicators are dyes that change colour in acids and bases. \_\_\_\_\_
- 15b. Acids can be corrosive. \_\_\_\_\_
- 15c. Citric acid is found in stomach juices. \_\_\_\_\_
- 15d. Bases are the opposite of acids and can never be dangerous. \_\_\_\_\_
- 15e. Bases can be caustic and can burn organic tissue. \_\_\_\_\_

### Question 16

[4]

Rewrite the sentences filling in the missing words from the list below.

Underline the words you fill in.

solids, matter, regular, big, small, liquids, gases, particles, move

All matter is made up of particles.

- 16a. In \_\_\_\_\_, the particles are closely packed in a \_\_\_\_\_ pattern.
- 16b. In \_\_\_\_\_, there are spaces between the \_\_\_\_\_ so they can \_\_\_\_\_ around each other.
- 16c. In \_\_\_\_\_, the particles move in all directions.
- 16d. In \_\_\_\_\_, the particles are \_\_\_\_\_ and move around each other.

## Grade 7 Natural Sciences Term 2 Assessment

**Question 17:**

**[2]**

Three factors affect the rate of a solute dissolving in a solvent.

1. Stirring
2. \_\_\_\_\_
3. \_\_\_\_\_

**Question 18:**

**[5]**

Complete the table below

**TABLE OF MIXTURES**

<b>MIXTURE</b>	<b>Is the mixture a solution after stirring?</b>	<b>Which substance is the solvent?</b>	<b>Which substance is the solute?</b>
oil and water	No	N/A	N/A
vinegar and water	a)	water	vinegar
sand and water	b)	N/A	N/A
sugar and water	c)	d)	e)

**TOTAL: 80**

## Grade 7 Natural Sciences Term 2 Assessment

### Natural Sciences Grade 7 Term 2 Test Memorandum 80 Marks

#### PART 1: Life and Living

CAPS Topic	Questions	Expected answer(s)	Marks
	<b>1</b>		
The biosphere	1a.	D ✓	1
The biosphere	1b.	D ✓	1
The biosphere	1c.	A ✓	1
Biodiversity	1d.	C ✓	1
	<b>2</b>		
Biodiversity	2a.	B ✓	1
Biodiversity	2b.	A ✓	1
Biodiversity	2c.	D ✓	1
Biodiversity	2d.	C ✓	1
	<b>3</b>		
Biodiversity	3a.	Scales ✓	1
Biodiversity	3b.	Cartilage ✓	1
Biodiversity	3c.	Fins ✓	1
Biodiversity	3d.	Gills ✓	1
Biodiversity	3e.	eggs ✓ shells ✓	2
Biodiversity	3f.	cold-blooded ✓	1

## Grade 7 Natural Sciences Term 2 Assessment

		<b>4</b>													
Biodiversity	4a.	Vertebrate✓	1												
Biodiversity	4b.	Molluscs✓	1												
Biodiversity	4c.	Arthropods✓	1												
Biodiversity	4d.	Invertebrates✓	1												
Biodiversity	4e.	Reptiles✓	1												
		<b>5</b>													
Sexual reproduction	5.	Angiosperms reproduce by producing seeds in flowers. Gymnosperms produce their seeds in cones✓✓	2												
		<b>6</b>													
Biodiversity		<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">FLOWER PART</th> <th style="text-align: left;">FUNCTION</th> </tr> </thead> <tbody> <tr> <td>Anther</td> <td>Makes the pollen grains that hold the male sex cells✓</td> </tr> <tr> <td>Stigma</td> <td>The sticky tip of the female part that receives the pollen✓</td> </tr> <tr> <td>Ovary</td> <td>The ovary holds the ovules which are the female sex cells✓</td> </tr> <tr> <td>Petals</td> <td>Attract pollinators like insects and birds✓</td> </tr> </tbody> </table>		FLOWER PART	FUNCTION	Anther	Makes the pollen grains that hold the male sex cells✓	Stigma	The sticky tip of the female part that receives the pollen✓	Ovary	The ovary holds the ovules which are the female sex cells✓	Petals	Attract pollinators like insects and birds✓	4	
	FLOWER PART	FUNCTION													
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	Ovary	The ovary holds the ovules which are the female sex cells✓													
Petals	Attract pollinators like insects and birds✓														
		<b>7</b>													
Sexual reproduction	7a.	True✓	1												
Sexual reproduction	7b.	True✓	1												
Sexual reproduction	7c.	False✓	1												
Sexual reproduction	7d.	False✓	1												
Sexual reproduction	7e.	True✓	1												

## Grade 7 Natural Sciences Term 2 Assessment

	<b>8</b>		
Sexual reproduction	8a.	(Any 8 in total) ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ In girls: <ul style="list-style-type: none"> <li>• Can occur from the age of 10</li> <li>• Breasts develop</li> <li>• Hair grows on the vagina</li> <li>• Hair grows under arms</li> <li>• Skin becomes oily</li> <li>• Hips widen</li> <li>• Menstruation begins</li> <li>• Feelings can become confusing</li> </ul> In boys: <ul style="list-style-type: none"> <li>• Hair grows around penis and scrotum</li> <li>• Hair grows under arms</li> <li>• Facial hair starts to grow</li> <li>• Skin becomes oily</li> <li>• Voice becomes deeper</li> <li>• Penis becomes bigger</li> <li>• Sperm is produced</li> <li>• Increase in sweating</li> </ul>	8
Sexual reproduction	8b.	Oestrogen	1
Sexual reproduction	8c.	Testosterone	1

## Grade 7 Natural Sciences Term 2 Assessment

<b>PART 2 : Matter and Materials</b>			
	<b>9</b>		
Properties of materials	9a.	C ✓	1
Properties of materials	9b.	C ✓	1
Properties of materials	9c.	B ✓	1
Properties of materials	9d.	A ✓	1
	<b>10</b>		
Properties of materials	10a.	A ✓	1
Properties of materials	10b.	C ✓	1
Properties of materials	10c.	B ✓	1
Properties of materials	10d.	D ✓	1
	<b>11</b>		
Separating mixtures	11a.	fair test ✓	1
Separating mixtures	11b.	constant ✓	1
Separating mixtures	11c.	variables ✓	1
	<b>12</b>		
Separating mixtures	12a.	solution ✓	1
Separating mixtures	12b.	insoluble ✓	1
Separating mixtures	12c.	particles ✓	1
Separating mixtures	12d.	condensation ✓	1
Separating mixtures	12e.	distillation ✓	1
	<b>13</b>		
Separating mixtures	13a.	Solute: The substance that dissolves when making a solution e.g.: salt in a salt water solution ✓	1
Separating mixtures	13b.	Solvent: The liquid in which the solute dissolves e.g.: water in a salt water solution ✓	1

## Grade 7 Natural Sciences Term 2 Assessment

		<b>14</b>				
Acids, bases and neutrals	14	<b>ACID</b>	<b>NEUTRAL</b>	<b>BASE</b>	6	
		lemon	oil	washing powder		
		vinegar	water	bicarbonate of soda		
		<b>15</b>				
Acids, bases and neutrals	15a.	True ✓			1	
Acids, bases and neutrals	15b.	True ✓			1	
Acids, bases and neutrals	15c.	False ✓			1	
Acids, bases and neutrals	15d.	False ✓			1	
Acids, bases and neutrals	15e.	True ✓			1	
		<b>16</b>				
Solids, liquids and gases	16a.	solids ✓	regular ✓	1/2 mark each		8 x 1/2 = 4
Solids, liquids and gases	16b.	liquids ✓	particles ✓	move ✓	1/2 mark each	
Solids, liquids and gases	16c.	gases ✓		1/2 mark each		
Solids, liquids and gases	16d.	liquids ✓	small ✓	1/2 mark each		
		<b>17</b>				
Dissolving	17a.	Heating ✓			1	
Dissolving	17b.	Grain size ✓			1	
		<b>18</b>				
Solutions as special mixtures	18a.	Yes ✓			1	
Solutions as special mixtures	18b.	No ✓			1	
Solutions as special mixtures	18c.	Yes ✓			1	
Solutions as special mixtures	18e.	Water ✓			1	
Solutions as special mixtures	18f.	sugar ✓			1	
<b>TOTAL: 80</b>						







