

PLANNER & TRACKER FOR RECOVERY ANNUAL TEACHING PLAN (ATP)

2021 - 2023



NATURAL SCIENCES & TECHNOLOGY

GRADE 6 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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REPUBLIC OF SOUTH AFRICA



- Please note that a Natural Sciences & Technology structured learning programme that includes daily lesson plans and classroom resources is available for download from 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.

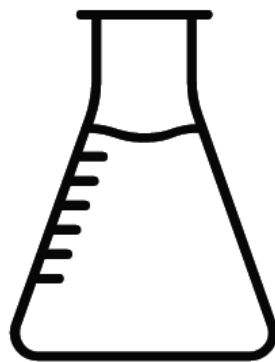


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Planner & Tracker for Recovery ATP

Natural Sciences & Technology



Grade 6 Term 2

2021 - 2023

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Introduction

Dear Natural Sciences & Technology 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 & Tech.

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,

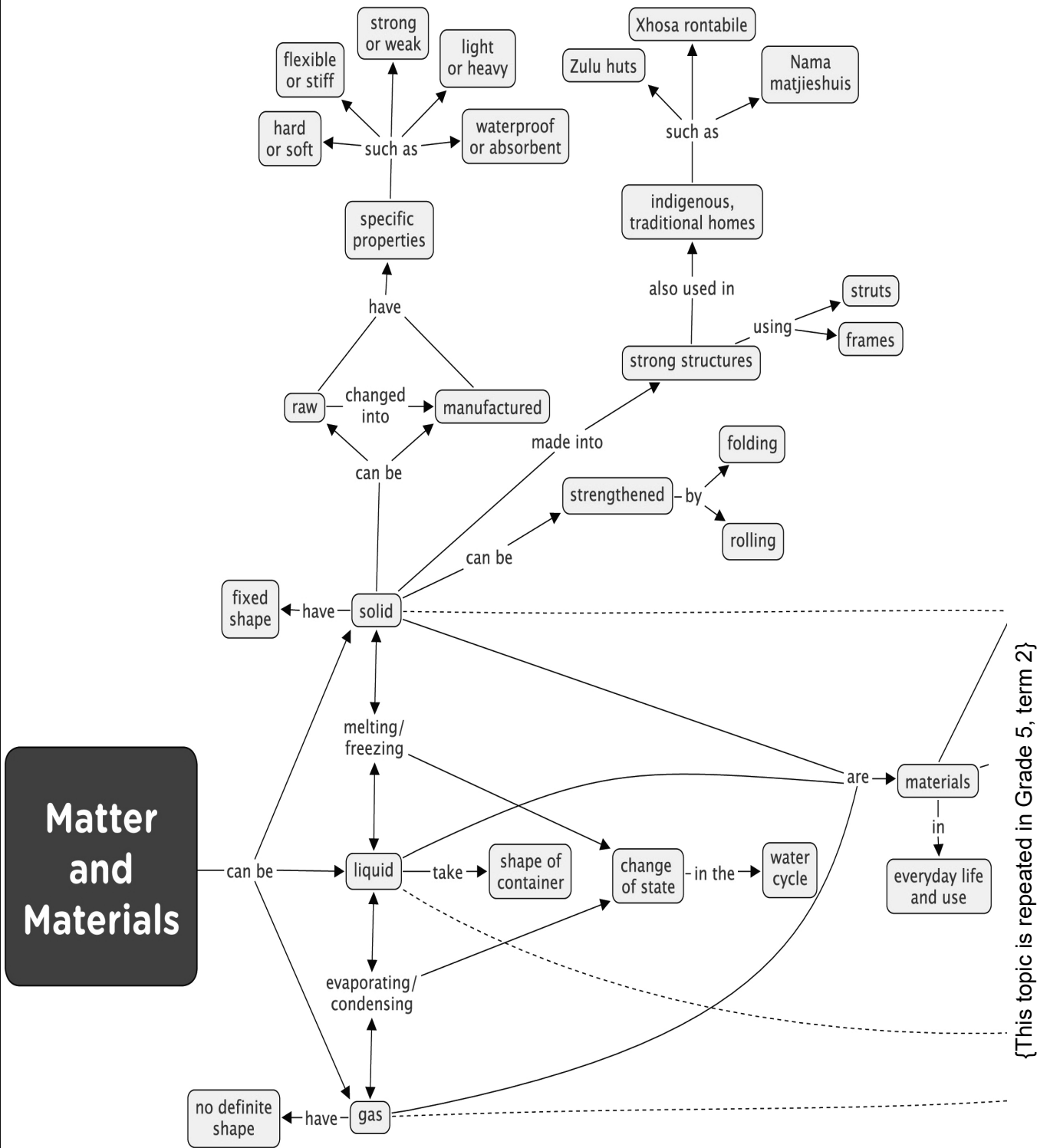
The DBE / NECT Recovery ATP Trackers Team

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 and Technology, 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 & Tech 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.

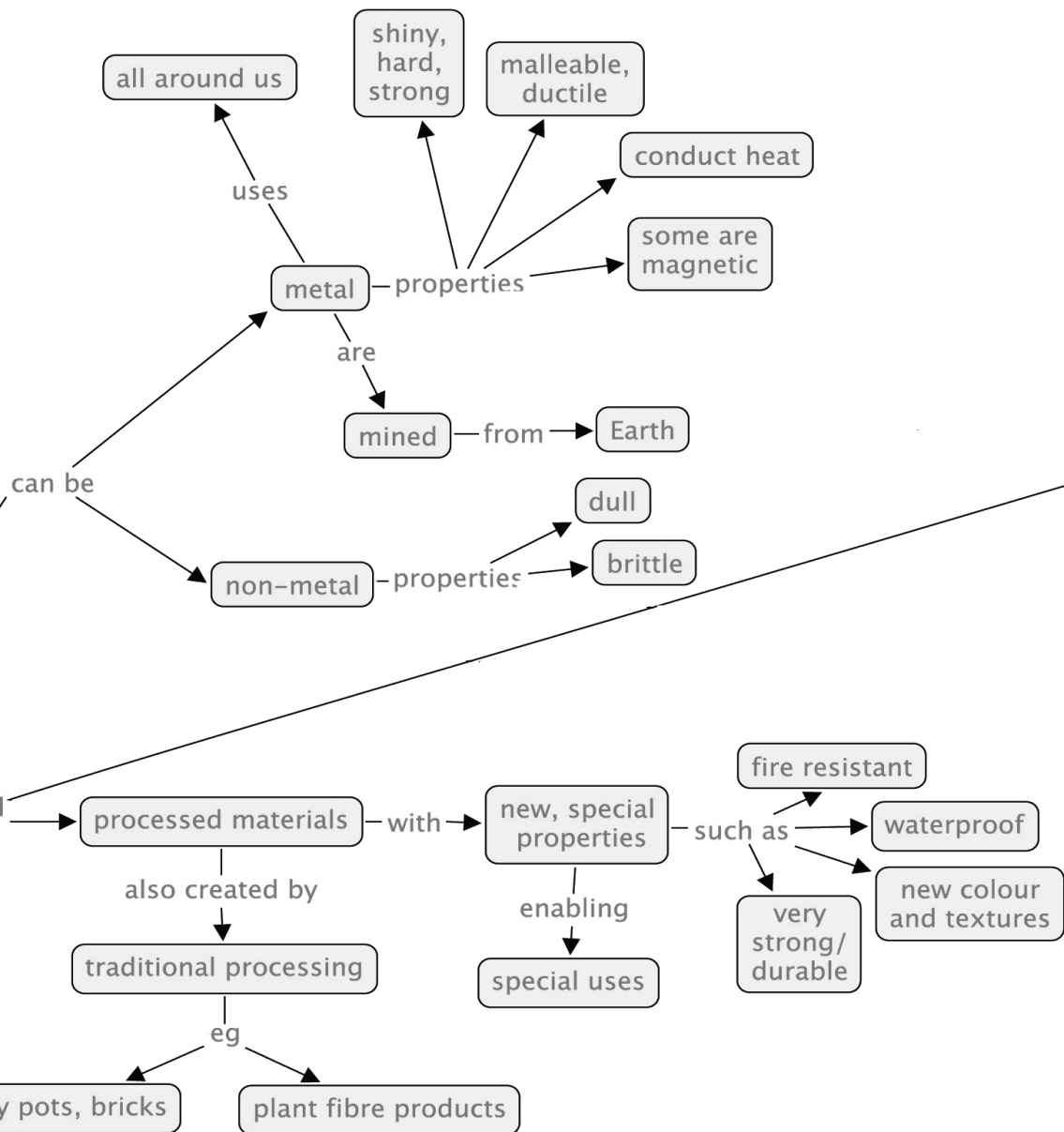
Gr 4



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

Gr 5

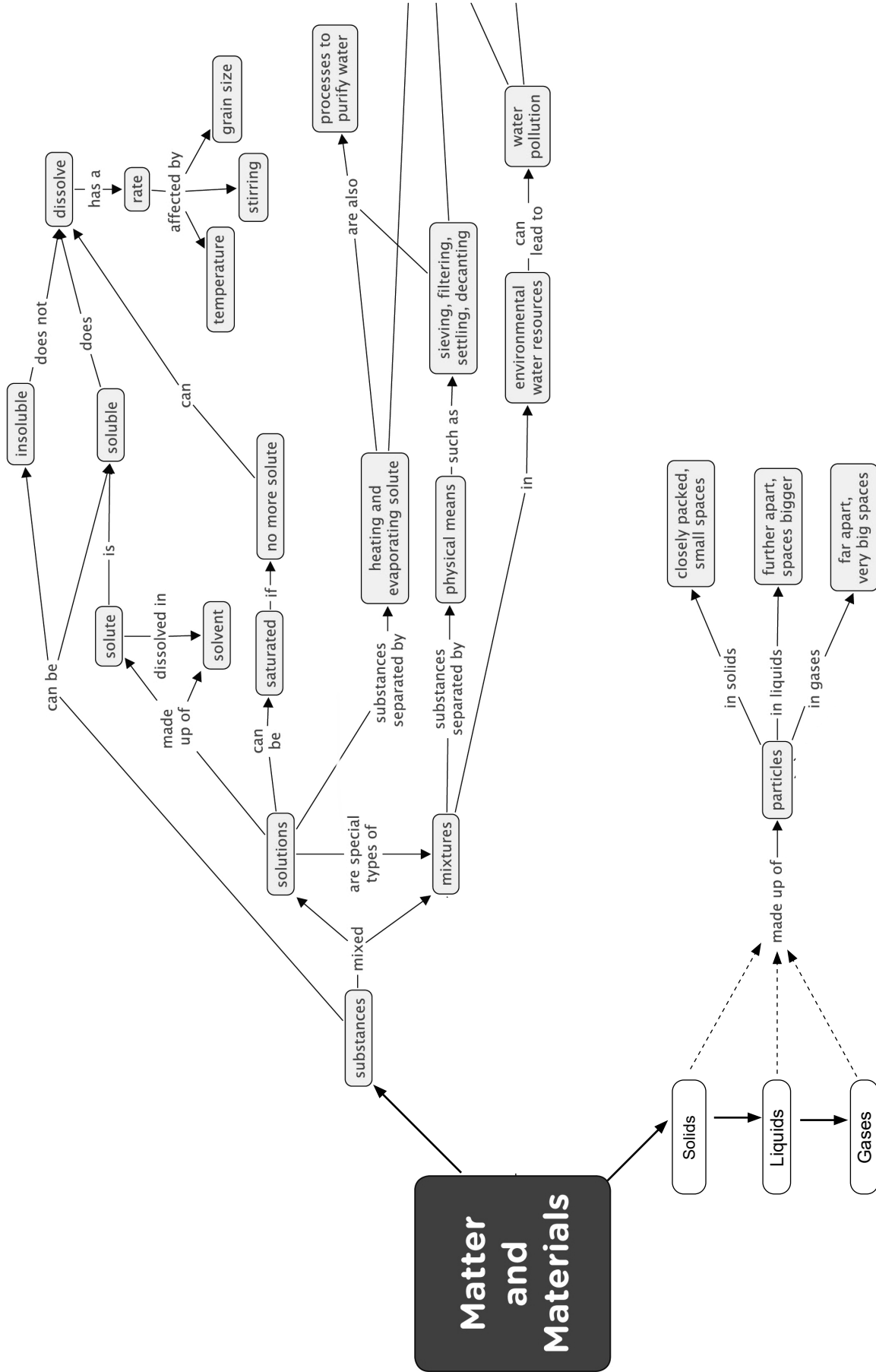
Matter and Materials



{Topic is recovered from Grade 4 term 2}

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

Gr 6



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 & Technology has the same content as in CAPS, however, this content has been arranged as follows for Term 2:

All topics have been retained.

However, one topic has been increased in time and one topic has been reduced in time.

1. Solids, liquids and gases 1 week (increased from half a week)
2. Mixtures 1 week
3. Solutions as special mixtures 2,5 weeks
4. Dissolving 1 week
5. Mixtures and water resources 2,5 weeks
6. Processes to purify water 2 weeks (reduced from 2,5 weeks)

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 6 are as follows:

	TERM 1	TERM 2	TERM 3	TERM 4
Practical Task/Investigation	20 marks	20 marks	20 marks	-
Test	40 marks	60 marks	40 marks	60 marks

Sample Assessment Tasks and Memoranda / Rubrics for Grade 6 Term 2 are included in this document.

Notes:

- **Column 1** shows the **time allocation** per topic.
- **Column 2** shows the **Recovery ATP requirements** for Grade 6 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 & Tech **is reduced**, please ensure that the **KEY CONCEPTS** listed below each table are thoroughly covered.

Key To Approved Textbook Abbreviations:

S&M	Study & Master Natural Science and Technology Grade 6 Cambridge University Press
VIVA	Viva Natural Sciences and Technology Grade 6 Vivlia
PLAT	Platinum Natural Sciences and Technology Grade 6 Maskew Miller Longman
SFA	Solutions for All Natural Sciences and Technology Grade 6 MacMillan
DbD	Day by Day Natural Sciences and Technology Grade 6 Maskew Miller Longman
OX	Oxford Successful Natural Sciences and Technology Grade 6 Oxford University Press
SO	Spot On Natural Sciences and Technology Grade 6 Pearson
TC	Top Class Natural Sciences and Technology Grade 6 Shuter and Shooter
SIBB	Sasol Inzalo Bk B Natural Sciences and Technology Grade 6 Sasol

TIME ALLOCATION	DBE RECOVERY ATP REQUIREMENTS	NOTES	NECT LESSON PLANS: LESSONS	APPROVED TEXTBOOKS	DATE COMPLETED
Weeks 1 1 week	Solids, liquids and gases 1. Solids, liquids and gases 2. Arrangement of particles	This topic has been increased in time to 1 week. Refer to Grade 4 Term 2, Lesson 1A for additional, pre-requisite knowledge.	Grade 4 Term 2 Lesson Plans Lesson 1A: Solids, liquids and gases Grade 6 Term 2 Lesson Plans 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
Week 2 1 week	Mixtures 1. Mixtures of materials		Gr6 Term 2 Lesson Plans Lesson 1B: A mixture of 2 solids Lesson 1C: Mixtures of materials Lesson 2A: Separating mixtures	S&M Gr 6 62 – 64 VIVA Gr 6 58 – 61 PLAT Gr 6 62 – 67 SFA Gr 6 95 – 104 DbD Gr 6 64 – 72 OX Gr 6 51 – 55 SO Gr 6 34 - 35 TC Gr 6 54 – 57 SIBB Gr 6 119 - 130	

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

Mixtures

- A mixture consists of two or more different substances mixed together.
- Sometimes when 2 substances are mixed it looks like 1 substance – the 2 different substances are no longer visible (usually liquids). Sometimes we can clearly see and identify the different substances – (usually solids).
- But we can also mix substances in different states (solids, liquids, gases).
- Substances can be separated by using physical methods - sieving, filtering, hand sorting, settling or decanting.

TIME ALLOCATION	DBE RECOVERY ATP REQUIREMENTS	NOTES	NECT LESSON PLANS: LESSONS	APPROVED TEXTBOOKS	DATE COMPLETED
Weeks 3 - 5 2,5 weeks	Solutions as special mixtures 1. Solutions 2. Soluble substances 3. Saturated solutions 4. Insoluble substances		Grade 6 Term 2 Lesson Plans Lesson 2B: Mixtures Lesson 3A: Solutions with uniform appearance Lesson 3B: Separating solutions Lesson 3C: Crystallisation Lesson 4A: Rates of dissolving Lesson 4B: Saturated solutions Lesson 4C: Insoluble substances	S&M Gr 6 VIVA Gr 6 PLAT Gr 6 SFA Gr 6 DbD Gr 6 OX Gr 6 SO Gr 6 TC Gr 6 SIBB Gr 6	65 – 74 63 – 72 70 – 80 107 – 119 74 – 83 56 – 65 36 – 39 58 – 64 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.
- Saturated solutions: when no more solute can dissolve. There is no more space in the solvent for any more particles of the solute.
- 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
Weeks 5 - 6 1 week	Dissolving 1. Rates of dissolving		Grade 6 Term 2 Lesson Plans Lesson 5A: Factors that affect dissolving Lesson 5B: Investigating rates of dissolving	S&M Gr 6 75 – 80 VIVA Gr 6 73 – 80 PLAT Gr 6 81 – 87 SFA Gr 6 127 – 143 DbD Gr 6 86 – 90 OX Gr 6 66 – 69 SO Gr 6 40 – 41 TC Gr 6 66 – 73 SIBB Gr 6 156 - 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
Weeks 6 - 8 2,5 weeks	Mixtures and water resources 1. Water pollution 2. Importance of wetlands		Grade 6 Term 2 Lesson Plans Lesson 5C: Water pollution Lesson 6A: Water pollution: insoluble substances Lesson 6B: Water pollution: soluble substances and germs Lesson 6C: Wetlands: removing substances from water Lesson 7A: Wetlands: regulating the flow of water	S&M Gr 6 81 – 84 VIVA Gr 6 82 – 91 PLAT Gr 6 91 – 99 SFA Gr 6 145 – 154 DbD Gr 6 94 – 99 OX Gr 6 70 – 75 SO Gr 6 42 – 45 TC Gr 6 74 – 80 SIBB Gr 6 174 - 185	

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

Mixtures and water resources

- We need water to survive. There are many water habitats and eco systems. We need to look after our water resources.
- Water pollution is when water is made dirty. Polluted water is unhealthy and cannot be used by living things.
- Insoluble substances do not dissolve in water – they make water dirty and smell bad. E.g. plastic bags, old tyres, broken bottles, tin cans and oil.
- Plastic waste kills many animals every year. Oil spills from ships pollute the sea and harm sea life. We can see insoluble waste substances.
- Soluble substances and living germs pollute our water. E.g. washing powder and dish liquid, fertilisers, insecticides, waste from factories. These soluble substances contain acid and other poisons that are washed into rivers and the sea and kill many animals that live in water habitats.
- Wetlands are flat pieces of land covered in shallow pools of water for most of the year, e.g. swamps, shallow lakes. They can be large or small.
- Wetlands help to clean our water by stopping the soluble substances when the water flow slows down. The plants in wetlands act as filters to clean dirty water.
- Wetlands are habitats for many animals and plants and are important centres of biodiversity. They can be fresh or salt water.
- Importance of wetlands: natural wetlands remove soluble and insoluble substances.
- Wetlands also regulate the flow of water and help control floods and soil erosion, by soaking up water and holding flood water.
- The Okavango Delta in Botswana is an example of a very big and important wetland in southern Africa.

TIME ALLOCATION	DBE RECOVERY ATP REQUIREMENTS	NOTES	NECT LESSON PLANS: LESSONS	APPROVED TEXTBOOKS	DATE COMPLETED
Weeks 9 - 10 2 weeks	Processes to purify water 1. Clean water	This topic has been reduced in time to 2 weeks	Grade 6 Term 2 Lesson Plans Lesson 7B: The importance of clean water Lesson 7C: Investigating filtering, settling and decanting Lesson 8A: Municipal water Lesson 8B: Investigate how to purify water Lesson 8C: Design, make and evaluate a simple system	S&M Gr 6 88 – 93 VIVA Gr 6 92 – 102 PLAT Gr 6 102 – 109 SFA Gr 6 165 – 184 DbD Gr 6 104 – 111 OX Gr 6 76 – 78 SO Gr 6 46 – 49 TC Gr 6 86 – 90 SIBB Gr 6 188 - 201	

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

Processes to purify water

- The importance of a clean water supply for people, animals and plants to survive.
- The diseases and illnesses associated with unclean water.
- Methods of cleaning water: sieving, filtering, settling, decanting, boiling, adding chemicals. Explain each of these methods and give examples.
- Municipal water is cleaned before and after use in water treatment plants. Know the process of cleaning water in these plants.
- Describe different ways to purify water. Draw a diagram of a simple water filter.

Grade 6 Natural Sciences & Technology Term 2 Assessment

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 & Technology

Grade 6

Term 2

Practical Task

Marks: 20

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

NOTE TO THE TEACHER:

1. This practical activity will be completed as part of Section E of lesson 2B.
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. The memorandum for assessing the practical task is provided.
7. This practical will be done in groups of 6.
8. Each group will need the following equipment and materials to complete the practical task:
 - 4 glasses or glass jars
 - a container of water
 - a stick or spoon for stirring
 - a tablespoon of salt
 - a tablespoon of sugar
 - a tablespoon of sand
 - a tablespoon of cooking oil
9. The learners should complete the drawings with a sharp pencil if possible and the written answers should be completed in pen.

Grade 6 Natural Sciences & Technology Term 2 Assessment

1. This activity will be done in groups.
2. To do this activity, each group will need the following:
 - 4 glasses or glass jars
 - a container of water
 - a stick or spoon for stirring
 - a tablespoon of salt
 - a tablespoon of sugar
 - a tablespoon of cooking oil
 - a tablespoon of sand
3. Ensure you have these materials prepared for each group before the lesson starts.
4. Tell the learners that they are going to be doing an investigation where they will be looking at solutions.
5. They will be looking at four different substances and will be investigating whether they dissolve in water.
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 explore the solubility of 4 different substances.
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:
 - 4 glasses or glass jars
 - a container of water
 - a stick or spoon for stirring
 - a tablespoon of salt
 - a tablespoon of sugar
 - a tablespoon of cooking oil
 - a tablespoon of sand
8. Read through the practical task with the learners.
9. Remind the learners that earlier in the lesson they learnt that solutions are special mixtures.
10. When a solid or another liquid (called the solute) looks like it has disappeared into the liquid (called the solvent), this mixture is called a solution. The solute has dissolved into the liquid or solvent.
11. Tell the learners that today they are going to be investigating the solubility of 4 different solutes and recording their findings for assessment.
12. Have each group collect the equipment they will need (as listed on the board) for the task.
13. The following will need to be written onto the chalkboard:

Grade 6 Natural Sciences & Technology Term 2 Assessment

Task 1:

(12 marks)

	sugar	salt	sand	oil
Prediction: Will this solute dissolve in water?				
Is the mixture a solution after stirring?				
What does the mixture look like after standing still for 5 minutes?				

14. Have the learners draw the above table into their workbooks.
15. Write the following “Investigation method” onto the chalkboard:

METHOD

- a. Three-quarters fill each glass jar with water. There should be four.
- b. Add a tablespoon of sugar to the first jar. Do not stir.
- c. Add a tablespoon of salt to the second jar. Do not stir.
- d. Add a tablespoon of sand to the third jar. Do not stir.
- e. Add a tablespoon of oil to the fourth jar. Do not stir.
- f. Predict which of these solutes will dissolve in the water.
- g. Write your answers on the table in your workbook.
- h. Now stir each jar for about a minute.
- i. Let the water become still in each jar.
- j. Look carefully at the liquid in each jar.
- k. Which one of these solutes have dissolved into the water and become a solution? Write the answers on the table in your workbook.
- l. Leave the jars to stand still for another 5 minutes. What do you notice has happened after 5 minutes? Write your answers on the table in your workbook.

16. Read through the task with the learners.
17. Tell the learners that for each jar they will need to predict what they think the outcome will be. By predicting, we mean that we think about what might happen and then make a guess.
18. Ask them if they have any questions.
19. Tell the learners they have 15 minutes to complete task 1.
20. Supervise the learners whilst they complete the task and answer any questions that they may have.
21. After 15 minutes call the learners back to attention.
22. Tell the learners that they are now going to draw a diagram of what three of the jars look like after the 5 minutes have passed.
23. They are going to draw the salt solution, the sand jar and the oil jar

24. The diagrams must be labelled.
25. The following will need to be written on the chalkboard:

Task 2:

(8 marks)

- 2a. Draw and label the jar with the salt solution. Label:
 - Jar
 - Salt solution
- 2b. Draw and label the jar with the sand mixture. Label:
 - Jar
 - Muddy water
 - Settled sand
- 2c. Draw and label the jar with the oil. Label:
 - Jar
 - Water
 - Oil

26. Read through task 2 with the learners.
27. Ask them if they have any questions.
28. Tell the learners they have 5 minutes to complete task 2.
29. Supervise the learners whilst they complete the task and answer any questions they may have.
30. After 5 minutes call the learners back to attention.
31. Have learners hand in their workbooks for assessment.
32. Learners must then tidy up investigation areas and hand back equipment.

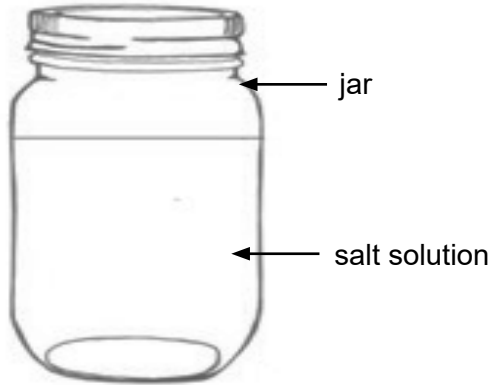
PRACTICAL – MEMORANDUM

Grade 6

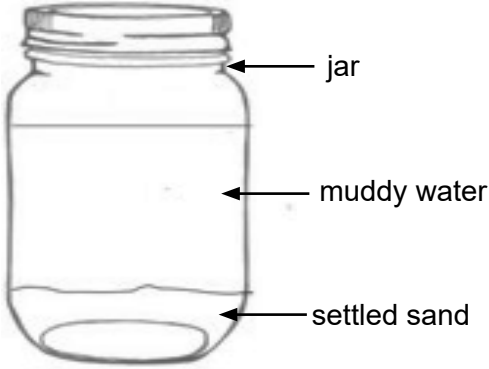
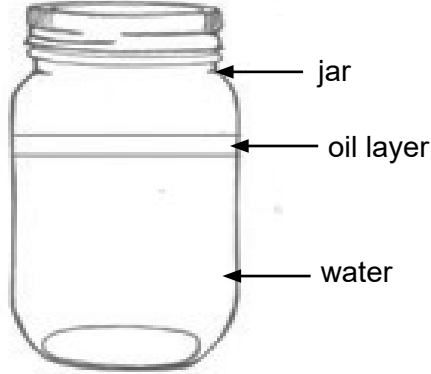
Term 2

Practical Task

Marks: 20

Topic	Task	Expected answer/outcome	Marks																				
	1																						
Solutions as special mixtures	1a		12																				
		<table border="1"> <thead> <tr> <th></th> <th>sugar</th> <th>salt</th> <th>sand</th> <th>oil</th> </tr> </thead> <tbody> <tr> <td>Prediction: Will this solute dissolve in water?</td> <td>Will vary</td> <td>Will vary</td> <td>Will vary</td> <td>Will vary</td> </tr> <tr> <td>Is the mixture a solution after stirring?</td> <td>Yes</td> <td>Yes</td> <td>No</td> <td>No</td> </tr> <tr> <td>What does the mixture look like after standing still for 5 minutes?</td> <td>Sugar has dissolved and can't be seen</td> <td>Salt has dissolved and can't be seen</td> <td>Water is muddy, and sand has settled on the bottom</td> <td>Oil has risen to the top.</td> </tr> </tbody> </table>		sugar	salt	sand	oil	Prediction: Will this solute dissolve in water?	Will vary	Will vary	Will vary	Will vary	Is the mixture a solution after stirring?	Yes	Yes	No	No	What does the mixture look like after standing still for 5 minutes?	Sugar has dissolved and can't be seen	Salt has dissolved and can't be seen	Water is muddy, and sand has settled on the bottom	Oil has risen to the top.	
	sugar	salt	sand	oil																			
Prediction: Will this solute dissolve in water?	Will vary	Will vary	Will vary	Will vary																			
Is the mixture a solution after stirring?	Yes	Yes	No	No																			
What does the mixture look like after standing still for 5 minutes?	Sugar has dissolved and can't be seen	Salt has dissolved and can't be seen	Water is muddy, and sand has settled on the bottom	Oil has risen to the top.																			
	2																						
Solutions as special mixtures	2a		2																				

Grade 6 Natural Sciences & Technology Term 2 Assessment

Photosynthesis	2b.		3
Photosynthesis	2c.		3
TOTAL			20

Grade 6 Natural Sciences & Technology Term 2 Assessment

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 & Technology Grade 6 Test Term 2 60 Marks - 60 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.

e.g. Which of the following is not a carbohydrate?

- a. bread
- b. eggs
- c. rice
- d. mielie meal

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

Ns & Tech Grade 6
Term 2
Test

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 needed for photosynthesis to take place? (1)

- a. Sunlight
- b. Water
- c. Oxygen
- d. Carbon dioxide

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

- a. Animals use carbon dioxide from the air and release oxygen.
- b. Plants use oxygen from the air and release carbon dioxide.
- c. Animals are producers.
- d. Animals depend on plants for food and oxygen.

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

- a. Animals need food to give their bodies energy.
- b. Everything animals eat contains nutrients.
- c. Carbohydrates build and protect our bodies.
- d. Proteins help repair and grow our body.

1d. Which one of these is a complete food chain? (1)

- a. locust→lizard→eagle
- b. lizard→cat
- c. grass→mouse→snake
- d. mouse→snake→mongoose→leopard

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	
example	mielies
2a.	lettuce
2b.	banana
2c.	sugar cane
2d.	carrot

COLUMN B
A. Fruit
B. Leaf
C. Root
D. Stem
E. Seed

QUESTION 3

[5]

This is what Zanele and Thumi have in their school bags for lunch today:

Brown bread with margarine and polony.
 A packet of peanuts.
 A fatcake (vetkoek).
 An orange.
 An amasi drink.
 A bottle of coke.

Answer these questions:

3a. Name two starch carbohydrates from this lunch.

3b. Name two proteins from this lunch.

3c. Name two sources of fats and oils from this lunch

3d. What food group is there too little of in this lunch?

3e. What do you think is the most unhealthy thing in these lunches?
 Give a reason for your answer.

QUESTION 4

[5]

Write the word that is being described in the sentence.
Only write the answer.

4a. When the sea is at its highest level on the beach.

4b. Process whereby plants make their own food.

4c. Part of the plant that adsorbs nutrients and water from the soil.

4d. The system of the body that fights disease.

4e. Something that is added to processed food to stop it from rotting.

Question 5

[6]

Use the words in the block below to complete the sentence:

webs, energy, carnivores, feeding relationships, producers, herbivores, consumers, omnivores

5a. In an ecosystem, plants and animals are connected by their

_____.

5b. A food chain shows the movement of _____ from one living thing to another.

5c. Food _____ are made up of many food chains.

5d. Plants are called _____ as they make their own food.

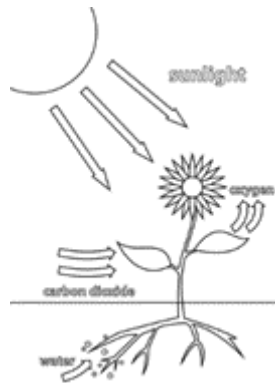
5e. Animals are called _____ as they must eat plants or other animals.

5f. Animals that only eat plants are called _____

QUESTION 6

[5]

Look at the diagram below:



(Note to teacher: Copy this picture or use Term 1 Resource 1)

Using what you know and the words in the box below to explain the process of photosynthesis.

sunlight, energy, water, minerals, soil, glucose, oxygen, carbon dioxide

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PART 2: Matter and Materials

QUESTION 7: MULTIPLE CHOICE

[4]

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

7a. Which one of these is NOT a solution? (1)

- a. Sand mixed into a glass of water.
- b. Sugar dissolved in a glass of water.
- c. Salt dissolved in a glass of water.
- d. A mixture of vinegar and water.

7b. Which of these statements is TRUE? (1)

- a. Water is an example of a solute.
- b. Salt is an example of a solvent.
- c. Salt is insoluble in water.
- d. Salt is soluble in water.

7c. Which of these statements is FALSE? (1)

- a. All matter is made of particles.
- b. Matter can change from one state to another.
- c. Particles are arranged the same in solids, liquids and gases.
- d. Particles of matter move.

7d. Which one of these will NOT dissolve in water? (1)

- a. Sugar.
- b. Oil.
- c. Salt.
- d. Powdered milk.

QUESTION 8: 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	A suitable way to separate samp and beans	A. Decanting
8a.	Particles are closely packed together in a regular pattern and vibrate a little	B. Solid
8b.	Particles are far apart and can move in all directions	C. Sieving
8c.	A suitable way to separate oil and water	D. Gas
8d.	A suitable way to separate sand and salt	E. Hand sorting

QUESTION 9

[6]

Complete the following sentences using words in the block below:

soluble, solvent, solute, solution, insoluble, dissolve

Rewrite the sentences and underline your answers.

- 9a. A _____ is a solid or liquid that dissolves in a liquid.
- 9b. A _____ is the liquid in which the solid dissolves.
- 9c. The mixture of a solute and a solvent is called a _____.
- 9d. A soluble solid will _____ in water.
- 9e. A solid is _____ if it can dissolve in a liquid.
- 9f. A solid is _____ if it cannot dissolve in a liquid.

QUESTION 10

[6]

Read the following statement:

“The loss of small, seemingly unimportant wetlands will have long lasting effects on the environment. Wetlands need to be protected and conserved.”

Using what you have learnt, and the words in the box below, write 5-7 sentences about what you understand is the importance of a wetland.

mud, plants, water, soak, flood, droughts, erosion, animals, filtering, settling, biodiversity

QUESTION 11

[6]

Say whether the following sentences are TRUE or FALSE.

- 11a. A solution is saturated when no more solute can dissolve in it. _____
- 11b. Salt dissolves faster in cold water than hot water. _____
- 11c. Cholera is a disease carried in polluted water. _____
- 11d. The water in wetlands can be fresh or salty. _____
- 11e. Crystallization is the process of forming crystals from a solution. _____
- 11f. Separating a solid from a solvent can be done by hand sorting. _____

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QUESTION 12

[5]

A sugar solution can be separated so that the sugar crystals are once again separated from the water.

12a. Name the two separation methods that can be used to do this:

12b. Which of these two methods of separation would be faster in a fair test?

12c. What is the meaning of a “fair test” when doing Science?

12d. Name two methods that are not suitable for separating a solution.

12e. South Africa is bordered by two oceans. How do you think we could use the process of separating solutions to solve our water crisis?

TOTAL: 60

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Term 2 Test Memorandum			
CAPS Topic	Questions	Expected answer(s)	Marks
PART A: Life and Living			
	1		
Photosynthesis	1a	C ✓	1
Photosynthesis	1b	D ✓	1
Ecosystems and food webs	1c	C ✓	1
Ecosystems and food webs	1d.	C ✓	1
	2		
Photosynthesis	2a.	B ✓	1
Photosynthesis	2b.	A ✓	1
Photosynthesis	2c.	D ✓	1
Photosynthesis	2d.	C ✓	1
	3		
Nutrition	3a.	Bread, Fatcake (vetkoek) ✓	1
Nutrition	3b.	(Any 2) ✓ ✓ 1/2 each Polony Peanuts Amasi	1
Nutrition	3c.	(Any 2) ✓ ✓ 1/2 each Margarine Fatcake Amasi Peanuts Polony	1
Nutrition	3d.	Fruit and vegetable ✓ 1/2 each	1
Nutrition	3e.	The coke ✓ 1/2 each Very high in sugar ✓	1

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		4	
Ecosystems and food webs	4a.	high tide ✓	1
Photosynthesis	4b.	photosynthesis ✓	1
Photosynthesis	4c.	roots ✓	1
Nutrition	4d.	immune system ✓	1
Nutrition	4e.	preservatives ✓	1
		5	
Ecosystems and food webs	5a.	feeding relationships ✓	1
Ecosystems and food webs	5b.	energy ✓	1
Ecosystems and food webs	5c.	webs ✓	1
Ecosystems and food webs	5d.	producers ✓	1
Ecosystems and food webs	5e.	consumers ✓	1
Ecosystems and food webs	5f.	herbivores ✓	1
		6	
Photosynthesis	6.	(Any 5) ✓ ✓ ✓ ✓ ✓ <ul style="list-style-type: none"> • Plants need food. • Plants can make their own food. • This process is called photosynthesis • Plants change energy from sunlight into energy for food. • This food type is called glucose • Photosynthesis happens in the green parts of the plant, mainly the leaves • Plants need water, sunlight and carbon dioxide to photosynthesize • Water and nutrients are absorbed from the soil by the roots • Carbon dioxide is absorbed by the green plants of the leaves • Oxygen is given off during photosynthesis 	5

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	7		
Solutions as special mixtures	7a.	A ✓	1
Solids, liquids, gases	7b.	D ✓	1
Solids, liquids, gases	7c.	C ✓	1
Dissolving	7d.	B ✓	1
	8		
Solids, liquids, gases	8a.	B ✓	1
Solids, liquids, gases	8b.	D ✓	1
Solids, liquids, gases	8c.	A ✓	1
Solids, liquids, gases	8d.	C ✓	1
	9		
Mixtures and water resources	9a.	solute ✓	1
Mixtures and water resources	9b.	solvent ✓	1
Mixtures and water resources	9c.	solution ✓	1
Mixtures and water resources	9d.	dissolve ✓	1
Mixtures and water resources	9e.	soluble ✓	1
Mixtures and water resources	9f.	insoluble ✓	1

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	10		
Mixtures and water resources	10.	<p><i>(Any 6)</i> ✓ ✓ ✓ ✓ ✓ ✓</p> <ul style="list-style-type: none"> • A wetland is an important centre of biodiversity • They are the habitat for many plants and animals • Wetlands absorb and clean our water • They clean the water by filtration and settling of impurities • When water passes over a wetland, it slows down because the wetland holds the water • This helps to prevent flooding after heavy rains • This also helps to prevent soil erosion • The plants in a wetland act as a filter • The plants and the mud act like a sponge 	6
	11		
Dissolving	11a.	True ✓	1
Dissolving	11b.	False ✓	1
Mixtures and water resources	11c.	True ✓	1
Mixtures and water resources	11d.	True ✓	1
Solutions as special mixtures	11e.	True ✓	1
Solutions as special mixtures	11f.	False ✓	1
	12		
Solutions as special mixtures	12a.	Evaporation ✓ 1/2 each Boiling ✓	1
Solutions as special mixtures	12b.	Boiling ✓	1
Solutions as special mixtures	12c.	Only one part or factor in the investigation is changed, whilst keeping all the rest the same ✓	1

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Solutions as special mixtures	12d.	(Any 2) ✓ ✓ 1/2 each Decanting Settling Hand sorting Sieving Filtering	1
Mixtures and water resources	12e.	We can use evaporation to separate salt from sea water ✓	1
TOTAL: 60			

