

A THREE YEAR CURRICULUM RECOVERY GUIDELINE

Mediation of the National Recovery ATP LIFE SCIENCES **Grade 10-12**

Implementation date : January 2021



Presentation Outline

1. Purpose
2. Introduction
3. Vision and Rationale
4. Principles
5. Underpinning assumptions
6. Key Recovery Strategies
7. Amendment to the Grade 10-12 Content Map for Life Sciences
8. Amendments to the Annual Teaching Plan;
9. Amendments School Based Assessment (SBA)
10. Conclusion

Purpose

The Three Year Curriculum Recovery Guideline outlines the development of the three year recovery ATPs to manage learning loss over a period of three years **2021 Recovery ATPs as stipulated in Circular S13 of 2020.**



Introduction



COVID 19 led to losses in teaching and learning time due to:

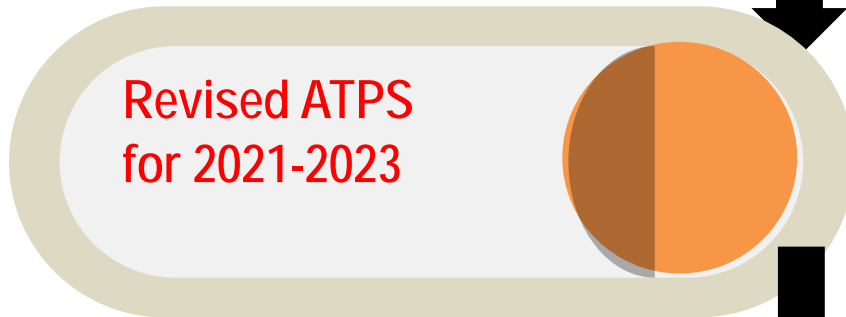
- the lockdown period and **phased reopening** of schools,
- Alternating time tabling models and
- the related health and safety **protocols**.

Furthermore, the revision of the school calendar **and** intermittent closure of many schools negatively **impacted** the **ability** of teachers to **implement** the **revised 2020 ATPs** as envisioned.

To mediate the impact and support teachers in managing teaching, assessment and learning within the reduced **time**, the DBE in 2020 implemented:

- **Circular S3** that outlined and guided teachers to conduct context specific **subject trimming**, in consultation with subject advisors.
- **National Assessment Circular 02** and **Circular E 11** to guide school-based assessment in phases and subjects

Vision 2024



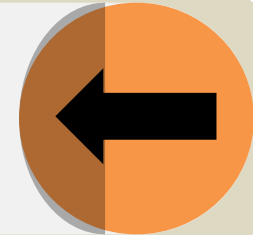
- Conceptualisation of a Curriculum Strengthening process that encompasses Competencies required for the Changing World;
- Develop Revised Modernised Curriculum Policy Statements in alignment with amended CAPS Section 4 and 2020 Assessment Circulars;
- Develop an Assessment for Learning pedagogical strategy, and
- Develop Educator Mediation Programmes.



Rationale for the Guideline

To outline the process to develop the **Three-year Recovery Plan** in managing the learning losses over a period of three years

RATIONALE FOR
THIS GUIDELINE



LEARNING LOSSES



the purpose of this exercise
are defined as:

Learning Outcomes (*content, skills & competencies, values & attitudes*) as stated in the revised ATPs not achieved during the 2020 school year.



Principles

1

Use of the 2020 Curriculum Recovery Framework as the base document

2

Learning losses inform the Three Year Recovery Plans for School –based Assessment

3

Management of the learning losses and the School Based Recovery Plans

4

Create opportunities through adjusted ATPs to strengthen pre-knowledge, consolidation, revision, and deeper learning

5

Entrench Assessment for Learning as a Pedagogical Approach to address the learning losses



Principles

6

The 2021 Recovery ATPs maintains the use of current LTSM and resources already available in the system.

7

Content topics removed in 2020 were not automatically returned in the 2021 Recovery ATPs.

8

Fundamental and core topics were retained in the Recovery ATPs

9

To guide and support effective teaching and learning



Underpinning Assumptions



1

1

ASSUMPTION 1

All learners will return to school from day 1 of the 2021 academic year and norm-times as stipulated in the CAPS will be adhered to for the entire school year;

2

2

ASSUMPTION 2

Learning losses due to COVID-19 across grades and subjects will vary from school to school, class to class and even within classes.

3

3

ASSUMPTION 3

Each Teacher will have a record of learning losses and Departmental Heads and Subject Advisors will monitor progress in learning loss recovery;



Underpinning Assumptions



4

4

ASSUMPTION 4

All schools will develop & implement school-based support programmes for all grades/years with particular focus on all the exit grades/years (3, 6, 9 and 12) throughout the three-year period.

5

5

ASSUMPTION 5

All Circulars related to the 2020 ATPs including SBA to be withdrawn and revised to align to the 2021 ATPs.

6

6

ASSUMPTION 6

Schools have systems in place to manage the possibility of a second wave of the pandemic in Q1 and Q3 of the 2021



The Development of the 2021 Recovery ATPs

The Recovery ATPs are aligned to the:

- 2021 School calendar
- Abridged Section 4 of CAPS
- Curriculum and assessment principles as prescribed in the CAPS policy for Life Sciences.



Summary: Amendments to the Content Overview for the Phase

Strand	Grade 10 (if started with strand: Life at molecular level)	Grade 10 (if started with strand: Environmental studies)	Grade 11	Grade 12
<div> <div>*Trimmed</div> <div>* Reorganised</div> <div>*No amendment</div> </div>				
Life at molecular, cellular and tissue level	<p>The chemistry of life:</p> <p>The need for fertilisers in over-utilised soils, eutrophication</p> <p>Cancer (Only brief description required)</p>	<p>The chemistry of life:</p> <p>The need for fertilisers in over-utilised soils, eutrophication</p> <p>Cancer (Only brief description required)</p>	This strand is not covered in Grade 11	No amendments



Summary: Amendments to the Content Overview for the Phase

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<div> <div>*Trimmed</div> <div>* Reorganised</div> <div>*No amendment</div> </div>				
Life at molecular, cellular and tissue level	Organs: Leaf structure - reorganised (will be taught when transpiration is taught)	Organs: Leaf structure - reorganised (will be taught when transpiration is taught)	This strand is not covered in Grade 11	No amendments



Summary: Amendments to the Content Overview for the Phase

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<div> <div>*Trimmed</div> <div>* Reorganised</div> <div>*No amendment</div> </div>				
Life at molecular, cellular and tissue level	Plant tissues: Re-organised (Change the sequence- start with animal tissues, then go to anatomy of dicotyledonous plants- where plant tissues will be covered in context)	Plant tissues: Re-organised (Change the sequence- start with animal tissues, then go to anatomy of dicotyledonous plants- where plant tissues will be covered in context)	This strand is not covered in Grade 11	No amendments



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<div> <div>*Trimmed</div> <div>* Reorganised</div> <div>*No amendment</div> </div>				
Life at molecular, cellular and tissue level	Animal tissues: Removed application of IKS and Biotechnology Medical biotechnology Cloning Stem cell research Secondary growth	Animal tissues: Removed application of IKS and Biotechnology Medical biotechnology Cloning Stem cell research Secondary growth	This strand is not covered in Grade 11	No amendments



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<div> <div>*Trimmed</div> <div>* Reorganised</div> <div>*No amendment</div> </div>				
Life processes in plants and animals	Support and transport systems in plants: Wilting and guttation	Support and transport systems in plants: Wilting and guttation	Photosynthesis: Topic time reduced to 2 weeks Removed all practical experiments except ONE basic experiment i.e. to show that light is necessary for photosynthesis	Responding to the environment (humans): Topic time reduced from 4 weeks to 3 weeks Human endocrine system: moved from term 3 to term 2



Summary: Amendments to the Content Overview for the Phase

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<div>*Trimmed</div> <div>* Reorganised</div> <div>*No amendment</div>				
Life processes in plants and animals	Support systems in animals: Voluntary skeletal muscles (structure) – reduced. Only cover briefly that together with tendons and bones, brings about movement – no need for actual mode of contraction relaxation etc.	Support systems in animals: Voluntary skeletal muscles (structure) – reduced. Only cover briefly that together with tendons and bones, brings about movement – no need for actual mode of contraction relaxation etc.	Animal nutrition: Topic time reduced to 2 weeks. Removed different diets, dietary supplements, malnutrition. tooth decay, effects of alcohol and drug abuse	



Summary: Amendments to the Content Overview for the Phase

Strand	Grade 10 (if started with strand: Life at molecular level)	Grade 10 (if started with strand: Environmental studies)	Grade 11	Grade 12
<p>*Trimmed * Reorganised *No amendment</p>				
Life processes in plants and animals	<p>Skeletons: types, disadvantages and advantages.</p> <p>Tissues: bone, cartilage, tendons' ligaments.</p> <p>Joints</p>	<p>Skeletons: types, disadvantages and advantages.</p> <p>Tissues: bone, cartilage, tendons' ligaments.</p> <p>Joints</p>	<p>Cellular respiration: Topic time reduced to 1 week.</p> <p>Removed all practical experiments except ONE basic experiment i.e. to show that carbon dioxide is produced by living organisms during respiration</p>	



Summary: Amendments to the Content Overview for the Phase

Strand	Grade 10 (if started with strand: Life at molecular level)	Grade 10 (if started with strand: Environmental studies)	Grade 11	Grade 12
<div>*Trimmed</div> <div>* Reorganised</div> <div>*No amendment</div>				
Life processes in plants and animals	Transport systems in mammals: Mechanisms for controlling cardiac cycle and heart rate(pulse). Removed lymph and diseases of heart and circulatory system	Transport systems in mammals: Mechanisms for controlling cardiac cycle and heart rate(pulse). Removed lymph and diseases of heart and circulatory system	Gaseous exchange: Removed gaseous exchange requirements, respiratory diseases, effects of smoking and altitude on gaseous exchange, artificial respiration and practical work	



Summary: Amendments to the Content Overview for the Phase

Strand	Grade 10 (if started with strand: Life at molecular level)	Grade 10 (if started with strand: Environmental studies)	Grade 11	Grade 12
<div>*Trimmed</div> <div>* Reorganised</div> <div>*No amendment</div>				
Life processes in plants and animals			Excretion: Removed diseases affecting kidney function and practical work	

Summary: Amendments to the Content Overview for the Phase

Strand	Grade 10 (if started with strand: Life at molecular level)	Grade 10 (if started with strand: Environmental studies)	Grade 11	Grade 12
<div> <div>*Trimmed</div> <div>* Reorganised</div> <div>*No amendment</div> </div>				
Diversity, change and continuity	History of life on earth: Diagnostic features of : Bacteria, Protista, Fungi, Plants, Animals	History of life on earth: Diagnostic features of : Bacteria, Protista, Fungi, Plants, Animals	No amendments	Human evolution: Term 3
	Fossil tourism and key events in life's history	Fossil tourism and key events in life's history		



Summary: Amendments to the Content Overview for the Phase

Strand	Grade 10 (if started with strand: Life at molecular level)	Grade 10 (if started with strand: Environmental studies)	Grade 11	Grade 12
<div> <div>*Trimmed</div> <div>* Reorganised</div> <div>*No amendment</div> </div>				
Environmental studies	Biosphere to ecosystems: Detail on biomes removed Ecotourism: Economics, ethics and opportunities	Biosphere to ecosystems: Detail on biomes removed Ecotourism: Economics, ethics and opportunities	Population ecology: Topic time can be reduced to 3 weeks. Removed social organisation and succession	Human Impact on the Environment: Remove from assessment
			Human impact on the environment: Topic time reduced to 5 weeks	



3. Amendments to the Annual Teaching Plan

2021 -2023 National Recovery Teaching Plan Grades 10-12

Summary: Reorganisation of Gr.12 content topics

- The topic **Human evolution** is in Term 3
- The teaching time of the topic **Responding to the environment (humans)** was reduced from 4 weeks to 3 weeks
- **Remove The Human Impact on the Environment from assessment**



Summary: Reorganisation of content topics

CAPS (pg.12): The **recommended** Grade 12 **teaching sequence** for the 4 Knowledge Strands:

- Life at molecular, cellular and tissue level
- Life processes in plants and animals
- Diversity, change and continuity



Summary: Amendment to the weighting of content topics

TOPIC	2020 %	2021 %
DNA: The Code of Life	9.5	9
Meiosis	7	7
Reproduction in Vertebrates	2	2.5
Human Reproduction	10.5	13.5
Genetics and Inheritance	15	16
Responding to the Environment (Humans)	13.5	18
Human Endocrine System	5	11.5
Homeostasis in Humans	3.5	
Responding to the Environment (Plants)	3.5	4.5
Evolution	22	18
Human impact on the environment	8.5	0



2021-2023 Amendment Summary

Sub-topics were trimmed in the following topics in Gr.11:

- Biodiversity of plants
- Animal nutrition
- Gaseous exchange
- Excretion in humans
- Population ecology

Practical work was trimmed in the following topics:

- Photosynthesis
- Cellular respiration

2021-2023 Amendment Summary

Sub-topics were reorganised in the following topics in Gr.11:

- Biodiversity of animals
- Photosynthesis
- Animal nutrition
- Cellular respiration
- Human impact on the environment

2021-2023 Amendment Summary

Sub-topics were trimmed in the following topics in Gr.10:

- Molecules for life: Organic molecules
- Mitosis: Cancer
- Animal tissues: IKS, Medical biotechnology
- Anatomy of dicotyledonous plants: Secondary growth
- Transpiration: Wilting and Guttation
- Skeletons: types, voluntary muscles, joints
- Transport systems in animals: Control of cardiac cycle, Lymph
- Biomes
- Classification schemes
- Life's history on Earth



2021-2023 Amendment Summary

Sub-topics were reorganised in the following topics in Gr.10:

- Organs: Leaf structure
- Plant tissues

Gr. 11 Summary:Content/Topics

Amended

Content/Topics	Term	Amendment
Biodiversity of plants	Term 1 Week 4	Removed : <ul style="list-style-type: none"> The significance of seeds
Biodiversity of animals	Term 1 Week 7	Reorganised : <ul style="list-style-type: none"> Topic time extended from 2 weeks to 3 weeks in term 1 One week allocated to relationship between body plans and modes of living for each of the 6 phyla One week allocated to role of invertebrates in agriculture and ecosystems



Gr. 11 Summary:Content/Topics

Amended

Content/Topics	Term	Amendment
Photosynthesis	Term 2 Week 1	<p>Removed :</p> <ul style="list-style-type: none"> Removed all practical experiments except ONE basic experiment i.e. to show that light is necessary for photosynthesis <p>Reorganised :</p> <ul style="list-style-type: none"> Topic time extended from 3 weeks to 4 weeks in term 2 1 week added for revision of Grade 10 topics, basic cell structure (with focus on the chloroplast), and leaf structure



Gr. 11 Summary:Content/Topics

Amended

Content/Topics	Term	Amendment
Animal nutrition	Term 2 Week 5	Reorganised : <ul style="list-style-type: none"> • Topic time extended from 3 weeks to 4 weeks in term 2 • Extended the processes involved in nutrition over 2 weeks Removed : <ul style="list-style-type: none"> • Removed different diets, dietary supplements, malnutrition. tooth decay, effects of alcohol and drug abuse
Cellular respiration	Term 2 Week 9	Reorganised : <ul style="list-style-type: none"> • Topic time extended from 1½ weeks to 2 weeks in term 2 • 1 week added for revision of the Grade 10 topic, basic cell structure, with focus on the mitochondrion

Gr. 11 Summary:Content/Topics

Amended

Content/Topics	Term	Amendment
Cellular respiration	Term 2 Week 9	Removed : <ul style="list-style-type: none"> Removed all practical experiments except ONE basic experiment i.e. to show that carbon dioxide is produced by living organisms during respiration
Gaseous exchange	Term 3 Week 1	Removed : <ul style="list-style-type: none"> Removed requirements met in different ways in different environments e.g. compare aquatic and terrestrial animals and plants Removed respiratory diseases, effects of smoking and altitude on gaseous exchange, artificial respiration

Gr. 11 Summary:Content/Topics

Amended

Content/Topics	Term	Amendment
Excretion in humans	Term 3 Week 4	Removed : <ul style="list-style-type: none"> Removed diseases affecting kidney function
Population ecology	Term 3 Week 7	Removed : <ul style="list-style-type: none"> Removed social organisation and succession
Human impact on the environment	Term 4 Week 1	Reorganised : <ul style="list-style-type: none"> Topic time reduced from 7 weeks to 4 weeks in term 4 Water availability and water quality packaged in one week Loss of biodiversity and solid waste removal packaged in one week

Gr. 10 Summary:Content/Topics

Amended

Content/Topics	Term*	Amendment
*Starting with life at molecular, cellular and tissue level * Starting with environmental studies		
The chemistry of life:	Term 1 Week 2 Term 2 Week 5	The need for fertilisers in over-utilised soils, eutrophication Cancer (Only brief description required)
Organs:	Term 2 Week 4 Term 3 Week 4	Leaf structure - reorganised (will be taught when transpiration is taught)
Plant tissues:	Term 2 Week 3 Term 3 Week 3	Re-organised (Change the sequence- start with animal tissues, then go to anatomy of dicotyledonous plants- where plant tissues will be covered in context)

Gr. 10 Summary:Content/Topics

Amended

Content/Topics	Term	Amendment
Animal tissues:	Term 2 Week 1 Term 3 Week 3	Removed application of IKS and Biotechnology Medical biotechnology Cloning Stem cell research Secondary growth
Support and transport systems in plants:	Term 2 Week 5 Term 3 Week 7	Wilting and guttation
Support systems in animals:	Term 2 Week 8 Term 3 Week 10	Voluntary skeletal muscles (structure) – reduced. Only cover briefly that together with tendons and bones, brings about movement – no need for actual mode of contraction relaxation etc.

Gr. 10 Summary:Content/Topics

Amended

Content/Topics	Term	Amendment
Support systems in animals:	Term 2 Week 8 Term 3 Week 10	Skeletons: types, disadvantages and advantages. Tissues: bone, cartilage, tendons' ligaments. Joints
Transport systems in mammals:	Term 1 Week 10 Term 4 Week 2	Mechanisms for controlling cardiac cycle and heart rate(pulse). Removed lymph and diseases of heart and circulatory system
History of life on earth:	Term 3 Week 8 Term 1 Week 9	Diagnostic features of : Bacteria, Protista, Fungi, Plants, Animals



Gr. 10 Summary:Content/Topics

Amended

Content/Topics	Term	Amendment
History of life on earth:	Term 4 Week 2 Term 2 Week 4	Fossil tourism and key events in life's history Reorganised : Topic time extended from 5 weeks to 6 weeks
Biosphere to ecosystems:	Term 3 Week 2 Term 1 Week 2	Detail on biomes removed Ecotourism: Economics, ethics and opportunities
Cell division	Term 1 Week 9 Term 3 Week 1	Reorganised : Topic time extended from 1 week to 2 weeks



4. Amendments School Based Assessment (SBA)

Summary: Amendment to the weighting of tasks in Grade 12

- **SBA Weighting of tasks:** Amended to the ratio of **25:75**
- **Abridged amended Section 4** aligned to the 2021 School Calendar



Summary: Revised Programme of Assessment in Grade 12

Term 1	Term 2	Term 3	Term 4
PRACTICAL TASK (10%) (minimum 30 marks)	PRACTICAL TASK (10%) (minimum 30 marks)	ASSIGNMENT (20%) (minimum 50 marks)	NSC Examination (2 x papers of 150 marks each; 2½ hours each)
TEST (15%) (minimum 50 marks)	TEST (15%) (minimum 50 marks)	TRIAL EXAMINATION (30%) (2 x papers of 150 marks each; 2½ hours each)	



Summary: Amendment to the weighting of tasks in Grades 10 & 11

- **SBA Weighting of tasks:** Amended to the ratio of **60:40**
- **Abridged amended Section 4** aligned to the 2021 School Calendar



2021-2023 Revised Programme of Assessment Grades 10 & 11

Term 1	Term 2	Term 3	Term 4
PRACTICAL TASK (10%) (minimum 30 marks)	ASSIGNMENT (20%) (minimum 50 marks)	PRACTICAL TASK (10%) (minimum 30 marks)	FINAL EXAMINATION Paper 1 + Paper 2 Duration: 2½ hours for each paper 150 marks for each paper
TEST (20%) (minimum 50 marks)	TEST (20%) (minimum 50 marks)	TEST (20%) (minimum 50 marks)	
TOTAL: 100%			
60%			40%



FORMAT OF GRADE 10,11 and 12 EXAMINATION

Sections	Type of questions	Marks
A	A variety of short answer questions, objective questions for example MCQ, Terminology, columns/ statement and items, data-response	50
B	A variety of questions types. 2 questions of 50 marks each divided into 2 – 4 subsections	2 x 50



Summary: Revised Trial Examination Structure

- 2 x papers (Paper 1 and Paper 2)
- 150 marks
- 2½ hours
- No section C (Essay question)



Summary: Revised Trial Examination Structure

PAPER 1	MARKS	PAPER 2	MARKS
Reproduction in vertebrates	8	DNA: Code of life	27
Human reproduction	41	Meiosis	21
Responding to the environment(humans)	54	Genetics and inheritance	48
Human endocrine system and Homeostasis	34	Evolution (Evolution through natural selection)	54
Responding to the environment (plants)	13		



Summary: Final Examination Structure

- Changes in Grade 12, Section C is trimmed
- 2 x papers (Paper 1 and Paper 2)
- 150 marks each
- 2½ hours each



GRADE 12

END-OF-YEAR EXAMINATION

PAPER 1

Topic	Time	Weighting	
		%	Marks
Term 1 and 2:			
Reproduction in Vertebrates	0,5 weeks	5	8
Human Reproduction	3 weeks	27	41
Term 2			
Responding to the Environment (Animals)	4 weeks	36	54
Term 3:			
Responding to the Environment(Plants)	1 week	9	13
Term 2 and 3			
Endocrine and Homeostasis	2,5 weeks	23	34
Totals	11 weeks	100	150



GRADE 12

END-OF-YEAR EXAMINATION

PAPER 2

Topic	Time	Weighting	
		%	Marks
Term 1:			
DNA and code of Life	2 weeks	18	27
Meiosis	1,5 weeks	14	21
Term 1 and 2			
Genetics and Inheritance	3,5 weeks	32	48
Term 3			
Evolution	4 weeks	36	54
Totals	11 weeks	100	150



5. Conclusion

Conclusion

SBA

- A uniform, standardised approach is used across Grade 10-12 in Life Sciences.
- No important aspect of the Grade 10 and 11 Life Sciences curriculum is compromised.
- The foundational principles of the National Curriculum Statement (NCS) as stated for Life Sciences are included.
- The Recovery ATP exposes learners to a variety of forms of assessment.
- The amended **School Based Assessment** (SBA) aligns to the content and time available.
- **Informal assessment** focuses on the principles of assessment for learning.
- Informal activities are compulsory in preparation of the formal assessment.

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A photograph of a wooden surface with a cream-colored card and a black pen. The card is tilted and has the words "Thank You" written in a large, bold, black serif font. A black pen with gold-colored accents is lying diagonally across the top right corner of the card.

**Thank
You**

