



**education**

Department of  
Education  
FREE STATE PROVINCE

# **LEARNER Support to improve PERFORMANCE in LIFE SCIENCES**

## **Grade 12**

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# 1. SCOPE OF THE CURRICULUM:

## 1.1 Sequence of Topics for Grade 12 (CAPS)

The following sequence of topics is recommended for Grade 12 based on the progressive development of concepts through the different topics:

1. DNA: Code of Life
2. Meiosis
3. Reproduction in Vertebrates
4. Human Reproduction
5. Genetics and Inheritance
6. Responding to the Environment (Humans)
7. Human Endocrine System
8. Homeostasis in Humans
9. Responding to the Environment (Plants)
10. Evolution
11. Human Impact (From Grade 11)

**This content can be assessed at all 4 cognitive levels.**

## 1.2 Topics and weightings of topics for each question paper

PAPER 1		
	%	Marks
Meiosis	7	11
Reproduction in Vertebrates	4	6
Human Reproduction	21	31
Responding to the Environment (Humans)	27	40
Human Endocrine System	10	15
Homeostasis in Humans	7	11
Responding to the Environment (Plants)	7	11
Human Impact on the Environment	17	25
	<b>100%</b>	<b>150</b>

PAPER 2		
	Weighting	
	%	Marks
DNA: Code of Life	19	27
Meiosis	7	12
Genetics and Inheritance	30	45
Evolution	44	66
	<b>100%</b>	<b>150</b>

### 1.3 Format of the question papers

The examination will consist of two question papers of 2½ hours and 150 marks each. Each question paper will have the following format:

Section	Types of Questions	Marks
A	Short answers, objective questions such as multiple-choice questions, terminology, matching	50
B	A variety of questions types: 2 questions of 40 marks each, divided into 3 to 4 subsections	2 x 40 = 80
C	A mini-essay	20

### 1.4 Weighting of cognitive levels for Life Sciences

The following weightings apply for assessment tasks set for Grade 12 from 2014:

Category	Cognitive Levels	Percentage
A	Knowledge	40
B	Comprehension	25
C	Application	20
D	Analysis, Synthesis and Evaluation	15

## 2. Question Types and Study Tips provided by the Mind the Gap Study Guide

**NB. Please discuss it with learners before every examination!**

### 2.1 QUESTION WORDS TO HELP YOU ANSWER QUESTIONS

It is important to look for the question words (the words that tell you what to do) to correctly understand what the examiner is asking. Use the words in the table below as a guide when answering questions.

Keyword	What is required of you
Analyse	Separate, examine and interpret
Calculate	Used when a numerical answer is required. In general, you should show your working, especially where two or more steps are involved
Classify	Group things based on common characteristics
Compare	Point out or show both similarities and differences between things, concepts or phenomena

Define	Give a clear meaning
Describe	State in words (using diagrams where appropriate) the main points of a structure / process / phenomenon / investigation
Determine	To calculate something, or to discover the answer by examining evidence
Differentiate	Use differences to qualify categories
Discuss	Consider all information and reach a conclusion
Explain	Make clear; interpret and spell out
Identify	Name the essential characteristics
Label	Identify on a diagram or drawing
List	Write a list of items, with no elaboration
Mention	Refer to relevant points
Name	State something; alternative keywords: give, identify, mention
State	Write down information without discussion
Suggest	Offer an explanation or a solution
Tabulate	Draw a table and indicate the answers as direct pairs

## 2.2 How to deal with each Section in the Exam Paper

### SECTION A:

#### How to answer multiple choice questions

- Try to work out the answer without looking at the possibilities.
- Read through the statement and all the options.
- Underline the key words in the statement.
- Cross out the options that are definitely wrong.
- Read through the statement again and select the most appropriate option from the options remaining.

- Write down your answer and move to the next question
- Don't guess your answers, go back to the questions you were not sure of at the end of the paper if there is time left.

### **How to answer match columns questions**

- Read through the entire list of statements in Column A and all the descriptions in Column B.
- Read through each statement in Column A and find the best match in Column B.
- Tick off the answers in Column B in pencil so that you know that one has already been chosen
- Cross out the options that are definitely wrong.
- First do the ones you are sure of then go back to the ones that you are not sure of and choose an answer from the remaining options
- Don't guess your answers, go back to the questions you were not sure of at the end of the paper if there is time left.

## **SECTION B**

### **How to answer longer questions**

- Read through the question:
- Underline the verb
- Use the Fact, Explanation and Example Formula
  - Fact- write down the fact
  - Explanation- explain the fact in your own words
  - Example- give your own practical example
- Look at the mark allocation as a guide of how many facts should be included in your answer. Two marks are allocated per fact and one mark per example

### **How to answer case studies**

- Look at the heading and the pictures to get an idea of what the case study is about.
- Read through the case study carefully and slowly with understanding.
- Read each question and underline the keyword/ verb
- Read the case study again and underline each of the keywords in the case study.
- Now answer the questions , pay special attention to action verbs

- Look at the mark allocation as a guide of how many facts should be included in your answer.

### **How to answer data response questions**

- Look at the whole picture, graph or diagram. What do you see?
- Look at the heading and the pictures to get an idea of the topic
- Look at any other symbols that may be important
- Read any text that is provided
- Read each question and underline the keyword/ verb
- Read the graphs/diagram again and select the needed information.
- Write down the answer and provide reasons for your answer
- Look at the mark allocation as a guide of how many facts should be included in your answer.

### **SECTION C: Essay questions**

- Unpack the question by underlining the different instructions and encircle the key facts
- Plan your essay first – draw a mind map from key facts (NOT ON YOUR ANSWER SCRIPT!! but on a rough piece of paper)
- The essay consists of 3 parts:
- Introduction, body and conclusion

#### Body of the essay

#### Hints and tips:

- Don't repeat facts
- Get to the point
- Don't use unnecessarily long sentences
- Put your statements in context
- Break up the information into logical parts as given in the question and discuss each part in its own paragraph
- The maximum marks obtained for the essay = 17marks + 3 for synthesis

### **3. Top 10 Study Tips**

1. Have all your materials ready before you begin studying –pencils, pens, highlighters, paper, etc.
2. Be positive. Make sure your brain holds on to the information you are learning by reminding yourself how important it is to remember the work and get the marks.
3. Take a walk outside. A change of scenery will stimulate your learning. You'll be surprised at how much more you take in after being outside in the fresh air.
4. Break up your learning sections into manageable parts. Trying to learn too much at one time will only result in a tired, unfocused and anxious brain.
5. Keep your study sessions short but effective and reward yourself with short, constructive breaks.
6. Teach your concepts to anyone who will listen. It might feel strange at first, but it is definitely worth reading your revision notes aloud.
7. Your brain learns well with colours and pictures. Try to use them whenever you can.
8. Be confident with the learning areas you know well and focus your brain energy on the sections that you find more difficult to take in.
9. Repetition is the key to retaining information you have to learn. Keep going – don't give up!
10. Sleeping at least 8 hours every night, eating properly and drinking plenty of water are all important things you need to do for your brain. Studying for exams is like strenuous exercise, so you must be physically prepared.

***STAY CALM!!***

***ENJOY LIFE SCIENCES!!***