LIFE SCIENCES

Dear Grade 12 Life Sciences learner

A love and aptitude for science, a curious and meticulous nature, an analytic, critical and enquiring mind, enthusiasm for solving problems, endurance, are some of the important characteristics which are needed to make a success of Life Sciences.

Subject Requirements

You will need the following:

- Textbook
- a Blue or black pen
- Pencil for drawings
- Ruler, protractor and compass to draw a pie chart
- Non-programmable calculator

Content Checklist

Below is a checklist you should use to ensure that you have covered the content of Life Sciences in full.

Paper 1

- **Reproduction in vertebrates** – diversity of reproductive strategies
- **Human reproduction** - structure of the male and female reproductive systems, puberty, gametogenesis, menstrual cycle, fertilisation, development of the zygote to blastocyst, implantation, gestation and the role of the placenta
- **Responding to the environment (humans)** – central nervous system, peripheral nervous system, autonomic nervous system, nerves, simple reflex arc, disorders of the central nervous system, receptors, human eye and human ear
- **Responding to the environment (plants)** - plant hormones and plant defence systems
- **Endocrine system and homeostasis** – including negative feedback mechanisms

Paper 2

- **DNA: The code of life** - Location, structure, functions, DNA replication, DNA profiling, RNA location, structure and functions, protein synthesis
- **Meiosis** – process, importance, abnormal meiosis, comparison of mitosis and meiosis
- **Genetics and inheritance** – concepts in inheritance, monohybrid crosses, sex determination, sex-linked inheritance, blood grouping, dihybrid crosses, genetic lineages/pedigrees, mutations, genetic engineering, paternity testing, genetic links
- **Evolution** - evidence for evolution, variation, theories (Charles Darwin, Lamarck, Punctuated equilibrium), artificial selection, speciation, mechanisms of reproductive isolation, evolution in present times, human evolution, "Out of Africa" hypothesis

Assessment

During the year you will complete different formal assessment tasks. All assessment tasks are extremely important and you need to complete them to the best of your ability in order to ensure a good year mark.

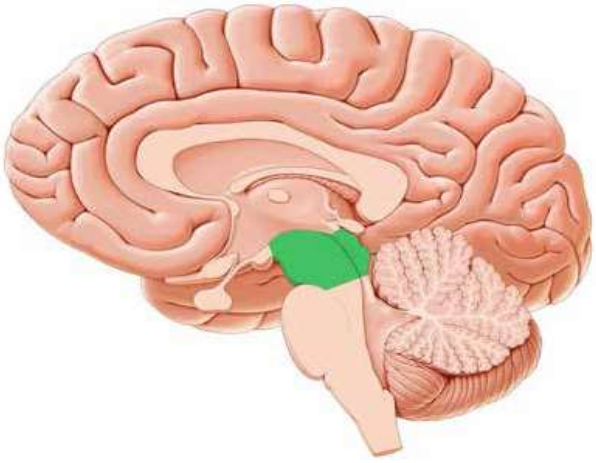
- Formal assessment tasks 25% **100 marks**
- Final external examination 75% **300 marks**

The following formal assessment tasks are compulsory:

- **Term 1**: Practical task (minimum 30 marks) and formal test (minimum 50 marks)
- **Term 2**: Practical task (minimum 30 marks) and June examination (150 marks, one paper)
- **Term 3**: Assignment (minimum 50 marks) and trial examination (two papers – 150 marks each)
- **Term 4**: Final external examination (two papers – 150 marks each)

Tips for Success

- Ask your teacher for the National Examination Guideline for Grade 12. This will give you the detailed content of Life Sciences to be studied. Paste it in your exercise book. Tick off every topic as it is taught in class, and write the relevant textbook page number next to the topic.
- Use previous and exemplar question papers throughout the year to assess your understanding of the concepts/ processes and your ability to apply the acquired knowledge in new situations.
- You are expected to design your own investigations. You need to know and understand what independent, dependent and control variables are before you apply them. You also need to know and understand what an investigative question and a hypothesis are before you can formulate them yourself.



https://www.kenhub.com/en/library/anatomy/coronal-sections-of-the-brain

SCAN ME!
Life Sciences Overview

Life Sciences WCED ePortal resources:

https://wcedeportal.co.za/resources-to-support-grade-12-learning-and-teaching

Life Sciences Telematics videos:

https://bit.ly/31Wk7Xf