



LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

**LIFE SCIENCES ASSIGNMENT
MARKING GUIDELINE
19 AUGUST 2026**

MARKS: 100

This marking guide consists of 10 pages including the cover page

PRINCIPLES RELATED TO MARKING LIFE SCIENCES

1. If more information than marks allocated is given Stop marking when maximum marks are reached and put a wavy line and 'max' in the right hand margin.
2. If, for example, three reasons are required and five are given Mark the first three irrespective of whether all or some are correct/incorrect.
3. If whole process is given when only part of it is required Read all and credit relevant part.
4. If comparisons are asked for and descriptions are given Accept if differences / similarities are clear.
5. If tabulation is required but paragraphs are given Candidates will lose marks for not tabulating.
6. If diagrams are given with annotations when descriptions are required, candidates will lose marks.
7. If flow charts are given instead of descriptions Candidates will lose marks.
8. If sequence is muddled and links do not make sense Where sequence and links are correct, credit. Where sequence and links are incorrect, do not credit. If sequence and links become correct again, resume credit.
9. Non-recognized abbreviations Accept if first defined in answer. If not defined, do not credit the unrecognised abbreviation but credit the rest of answer if correct.
10. Wrong numbering If answer fits into the correct sequence of questions but the wrong number is given, it is acceptable.
11. If language used changes the intended meaning Do not accept.
12. Spelling errors if recognizable accept provided it does not mean something else in Life Sciences or if it is out of context.
13. If common names given in terminology: only accept if provided as an alternative in the marking guideline.
14. If only letter is asked for and only name is given (and vice versa) No credit.
15. If units are not given in measurements: Candidates will lose marks. Memorandum will allocate marks for units separately
16. Be sensitive to the sense of an answer, which may be stated in a different way.
17. Caption: All illustrations (diagrams, drawings, graphs, tables, etc.) must have a caption.
18. Code-switching of official languages (terms and concepts) A single word or two that appears in any official language other than the learners' assessment language used to the greatest extent in his/her answer should be credited, if it is correct.
19. No changes must be made to the marking memoranda without consulting the District Curriculum Advisors.

SECTION A**QUESTION 1****1.1**

1.1.1 A group of organisms of the same species ✓ that occupies the same habitat ✓
at the same time✓ (3)

1.1.2 A group of similar organisms ✓ with the ability to interbreed ✓ and produces fertile
offsprings ✓ (3)
(3x2) **(6)**

1.2

1.2.1 Artificial Selection/ Selective Breeding ✓ (1)

1.2.2 They are able to interbreed ✓ and produces fertile offsprings✓ (2)

1.2.3 Humans chose characteristics/traits✓ that they desired and interbred dogs with this
trait✓ to produce offspring with desired traits. ✓ (3)
(3 x 1) **(6)**

1.3

1.3.1 Punctuated equilibrium ✓ (1)

1.3.2

(a) Equilibrium Phase / No evolutionary change takes place in phase A ✓ (1)

(b) Acceleration Phase / Phase B points to an accelerated evolutionary change ✓ (1)

1.3.3 - During phase B, species with favourable characteristics/ suitable to the new
environment, survive and reproduce ✓
- Species that do not have advantageous characteristics die out ✓.
- Thus, the chances of speciation during phase B are much greater than during
phase A ✓ (3)
(2x2) **(6)**

1.4.

1.4.1 Speciation ✓ (1)

1.4.2 Increases diversity of species / biodiversity ✓

Introduces reproductive isolation mechanisms ✓

Eliminates gene flow between different populations ✓

Decreases extinction rates of species ✓ (ANY TWO) (2)

1.4.3 Species B and C ✓ evolved from species A. ✓

Species A existed prior to species B ✓,

and species C evolved at the same time as species B ✓ (ANY TWO) (2)

1.4.4 Moth in species A belonged to a single population.

- The population of species A / moths was split into two groups, one on each side of the mountain range. ✓

- Gene flow / interbreeding between the two groups was completely eliminated / impossible ✓

- Each group was exposed to unique environmental factors / selection pressures ✓

- Natural selection occurred independently in each group on either side of the mountain. ✓

- Each population became genotypically and phenotypically different from the other population. ✓

- If the two groups were to mix again and attempt to interbreed, the offspring would be infertile. Thus, two new species will then have been produced. ✓ (ANY FIVE) (5)

(10)

1.5

1.5.1

(a) Tortoise 2 ✓ (1)

(b) Tortoise 1 ✓ (1)

1.5.2 Crossing over during Prophase I of meiosis ✓

The random arrangement of maternal and paternal chromosomes ✓

Random fertilisation of egg cells ✓

Random mating ✓ (ANY TWO) (2)

(4)

TOTAL SECTION A: [34]**SECTION B****QUESTION 2**

2.1

- 2.1.1
- Decide on the sample size ✓
 - Decide on the method for recording results ✓
 - Decide on time✓/ date to collect data from the Island
 - Decide on the equipment to use ✓
- (ANY THREE) (3)

- 2.1.2 By ensuring that both ponds in an experiment have identical ✓ environmental conditions ✓
- by ensuring that there were equal numbers ✓ of predatory fish in both ponds ✓ (ANY TWO) (2)

2.1.3

- (a) The type of predators ✓ (1)
- (b) Average number of spots on each male guppy✓ (1)

- 2.1.4 It acts as a control ✓ to compare the results between the ponds to ensure that any changes that occurred ✓ were due to the presence of predators ✓ and not other environmental factors. (3)

- 2.1.5 - There is variation ✓ amongst the male guppies
- Some have more spots ✓ while others have fewer spots ✓
 - The ones that have more spots attract predators ✓
 - and are eaten ✓ by the predators.
 - The ones with fewer spots survived ✓
 - and reproduced to pass the gene for fewer spots on to the next generation ✓ (5)
- (ANY FIVE) (15)

- 2.2
- (a) Smaller limbs than the ancestor compared to no limbs of modern snakes ✓ (1)
- (b) - Lizards crawled into burrows to find food / escape from predators ✓
- They did not use their limbs anymore ✓
 - The limbs became smaller and eventually disappeared ✓
 - They passed on this characteristic to their offspring ✓ (4)
- (5)
- TOTAL QUESTION 2 [20]**

QUESTION 3

3.1

3.1.1 *Australopithecine* → Chimpanzee → Human ✓✓**MARK ALLOCATION:**

- 1 marks if a candidate gets ANY two correct.
- 2 marks if a candidate gets them all correct.

(2)

3.1.2

CHIMPANZEE	HUMAN
More prognathous✓/slanting face	Less prognathous✓/flatter face
Heavy / larger brow ridges✓	Smaller brow ridges✓
Smaller cranium✓	Larger cranium✓

(5)

(Table 1 + 4)

3.1.3

- Olfactory brain centres reduced✓/ reduced sense of smell✓
- Eyes in front✓/Binocular vision/ stereoscopic vision
- Eyes with cones✓/ colour vision
- Freely rotating arms✓
- Elbow joints allowing rotation of forearm✓
- Flat nails instead of claws✓/ bare, sensitive finger tips✓
- Opposable thumbs✓/ precision grip
- Bipedal✓/ upright/ foramen magnum in a more forward position
- Sexual dimorphism✓/distinct differences between males and females
- Two teats ✓
- Parts of the brain that process information from the hands and eyes are enlarged✓
- Long upper arms✓
- Large brains✓/skulls compared to their body mass
- Five digits per limb✓

(ANY THREE)

(3)

(10)

3.2

3.2.1 Hominidae ✓ (1)

3.2.2 A - Australopithecus✓

B - H. habilis✓

C - H. erectus✓

D - H. neanderthal ensis✓

E - Homo sapiens (5)

3.2.3 **Position of the foramen magnum** ✓

- The foramen magnum is located more forward position✓, so that

- the vertebral column extends beneath✓ the skull.

Shape of the spine✓

- The spine is S-shaped ✓to

- support an upright posture✓

Shape of the pelvis ✓

- The pelvis is shorter and wider✓

- to support the weight of body ✓

(9)

(15)

3.3

3.3.1 It refers to total dying out and disappearing of a certain species ✓✓ (2)

3.3.2 Intelligence is related to brain size.

It is also related to the complexity and structure of the brain. ✓

The structure of the Homo sapiens brain probably allowed the species to adapt

better than the H. neanderthalensis. ✓ (2)

(7)

TOTAL QUESTION 3: [32]

QUESTION 4**4.1**

4.1.1 Phylogenetic tree ✓ (1)

4.1.2 (a) Homo ✓ (1)

(b) Ardipithecus✓ (1)

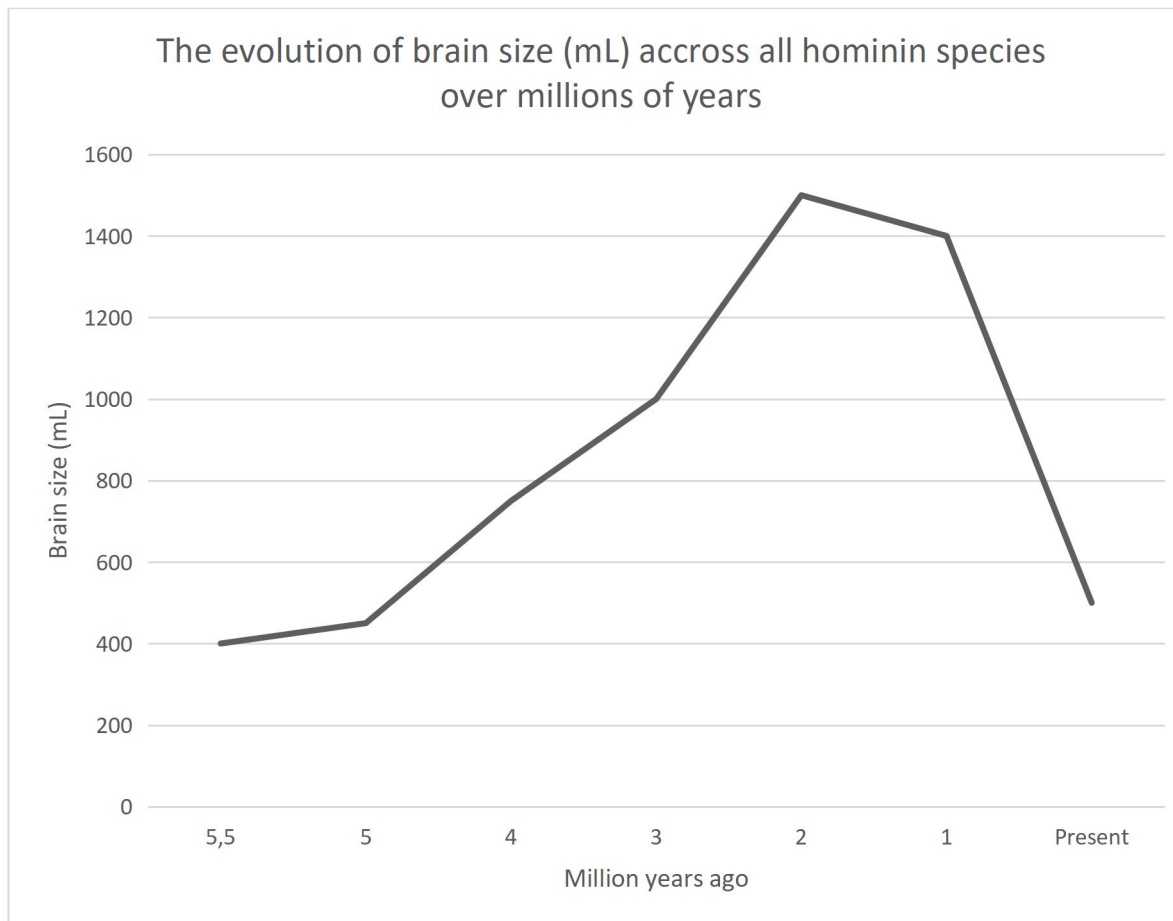
© Paranthropus robustus✓ (1)

4.1.3 - Mrs Ples✓
- Taung child✓
- Little Foot✓ (3)
(7)

4.2

4.2.1 Pick correct specimen✓ : 1400 - 500 ✓ = 900 mL ✓ (3)

4.2.2 Homo neanderthalensis ✓ (1)

4.2.3

Criteria	Elaboration	Mark(s)
Correct type of the graph (T)	Line graph drawn	1
Correct caption of the graph (C)	Both variables included	1
Correct labels for X-axis and Y-axis including units for Y-axis (L)	Y axis: Brain size (mL) X axis: Million years ago	1
Correct scales for X and Y axis (S)	Equal spacing between intervals for each axis	1
Plotting of points (P)	1 – 4 points plotted correctly	1
	All points plotted correctly	2

(6)

(10)

TOTAL QUESTION 4: (17)**TOTAL SECTION B:** 66**GRAND TOTAL:** 100