Life Sciences
Know the method.

GRADE 12 • 2026 • DBE/CAPS

Free starter pack

3 worked methods. 3 new practice questions. Explained answers.

Read the command word. Name the structure or process precisely, then connect cause to effect. For comparisons, compare the same feature on both sides. For data questions, quote relevant values with units. A list of keywords is not a complete explanation.

Built for practice

Read the recognition cue. Try the question. Follow each operation or reasoning step. Complete the new question before opening its answer.

Paper 1 is BLUE. Paper 2 is PURPLE. Paper labels remain visible when printed in black and white. Click the method index to jump to a lesson; return using the footer.

About this edition

These are original revision questions, not official DBE questions or predicted exam content. The fuller subject pack is designed for the R99 offer. This edition is an editorial draft pending independent subject-teacher review. No purchase is required to use this copy.

Use alongside lessons, a textbook and complete official papers. The pack covers selected methods rather than every examinable question type. Explanations are in English.

Question-method index

Click a row to open its worked example. The answer link on each lesson opens the practice solution.

Paper 1

MR-LS-05 | Follow a reflex arc · p. 4

MR-LS-08 | Blood glucose negative feedback · p. 5

Paper 2

MR-LS-16 | Monohybrid cross · p. 6

Back to method index

Your paper map

Paper 1 • 150 minutes • 150 marks

Vertebrate and human reproduction; human and plant responses; endocrine control and homeostasis.

Methods included here: Human responses; Homeostasis.

Paper 2 • 150 minutes • 150 marks

DNA and protein synthesis, meiosis, genetics and inheritance, and evolution.

Methods included here: Genetics.

Read the actual paper instructions

This is a revision route, not a mock exam with official mark allocations. Read command words, units, rounding and answer-book instructions on the examination paper. Do not assume one sentence always earns one mark.

How to mark your practice

Compare your reasoning with the model answer. Mark the first place where your method differs, correct that step and retry from a blank page. An alternative scientifically or mathematically valid method can also be correct.

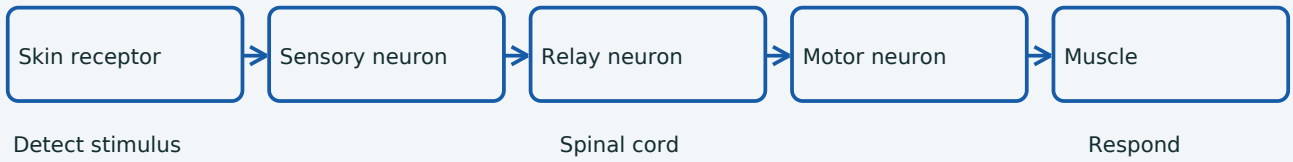
Back to method index

Follow a reflex arc

MR-LS-05 • Track the impulse from receptor to effector in the correct direction.

Worked example

A person touches a dangerously hot surface and withdraws a hand. Describe the nervous pathway that produces the withdrawal.



Simplified pathway. Arrows show the direction of information flow.

1. Receptors in the skin detect the stimulus and initiate impulses.

2. A sensory neuron carries impulses towards the spinal cord, entering through the dorsal root.

3. In the spinal cord, impulses pass through a relay neuron to a motor neuron.

4. The motor neuron carries impulses out through the ventral root to an effector muscle.

5. The muscle contracts and the hand withdraws; conscious awareness can follow the rapid spinal response.

Check the reasoning

The effector is the muscle that responds, not the receptor that detects heat.

Avoid this mistake

Do not write that the brain must first consciously decide to withdraw the hand.

Your turn

A sensory neuron in this reflex arc is damaged. Explain the effect on the reflex and distinguish a receptor from an effector.

Try it first, then click here for the explained answer.

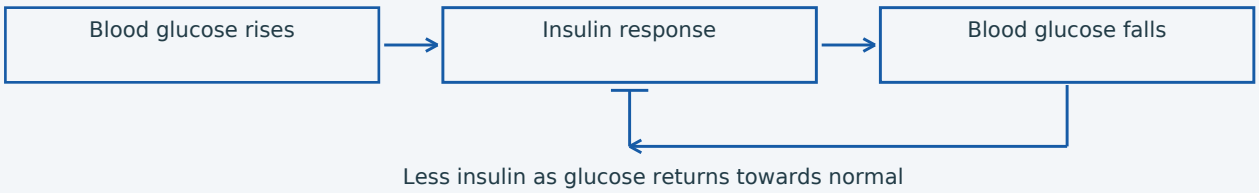
Back to method index

Blood glucose negative feedback

MR-LS-08 • Identify the deviation, corrective hormone and return towards normal.

Worked example

After a carbohydrate-rich meal, blood glucose rises. Explain the negative feedback response in a healthy person.



Question sketch - schematic; use the stated values, not measurements.

1. Beta cells in the pancreatic islets detect the increased glucose level and release more insulin.

2. Insulin promotes glucose uptake by responsive body cells.

3. It also promotes conversion of glucose to glycogen, especially in liver and muscle.

4. Blood glucose falls towards its normal range.

5. As the stimulus decreases, insulin secretion decreases: negative feedback.

Check the reasoning

The response opposes the original rise rather than amplifying it.

Avoid this mistake

Insulin is a hormone, not an enzyme that digests sugar in the intestine.

Your turn

Between meals, blood glucose drops. Explain the corrective hormonal response.

Try it first, then click here for the explained answer.

Back to method index

Monohybrid cross

MR-LS-16 • Define alleles, list gametes and combine them systematically.

Worked example

In a hypothetical plant, purple flowers (P) are completely dominant over white (p). Cross two heterozygous purple plants. Give genotype and phenotype ratios and probability of white offspring.

Pp × Pp

Gametes	P	p
P	PP	Pp
p	Pp	pp

1. Parents: Pp × Pp.
2. Each parent can produce gametes P and p.
3. The Punnett grid gives PP, Pp, Pp and pp.
4. Genotype ratio: 1 PP : 2 Pp : 1 pp.
5. Phenotype ratio: 3 purple : 1 white.
6. Probability of white offspring: $\frac{1}{4}$, or 25%, for each offspring.

Check the reasoning

The four grid cells represent equally likely combinations, not a guarantee for four actual offspring.

Avoid this mistake

Use the same allele symbol in upper and lower case; do not mix unrelated letters.

Your turn

Cross a heterozygous purple plant with a white plant under the same inheritance model. Give offspring genotypes and phenotypes.

Try it first, then click here for the explained answer.

Back to method index

Follow a reflex arc

MR-LS-05 • Independent practice

A sensory neuron in this reflex arc is damaged. Explain the effect on the reflex and distinguish a receptor from an effector.

Step-by-step answer

1. The sensory impulse cannot travel normally from the receptor to the spinal cord.

2. The normal reflex response may fail because the pathway is interrupted.

3. A receptor detects a stimulus; an effector, such as a muscle, performs the response.

Make the correction useful

Write down the first step you missed and why. Close this answer, solve the question again, then explain your method in your own words.

Return to the worked method

Blood glucose negative feedback

MR-LS-08 • Independent practice

Between meals, blood glucose drops. Explain the corrective hormonal response.

Step-by-step answer

1. Alpha cells in the pancreatic islets release more glucagon.

2. Glucagon promotes breakdown of stored glycogen in the liver to glucose.

3. Glucose is released into the blood and blood glucose rises towards normal.

4. As glucose returns towards normal, glucagon secretion decreases.

Make the correction useful

Write down the first step you missed and why. Close this answer, solve the question again, then explain your method in your own words.

Return to the worked method

Monohybrid cross

MR-LS-16 • Independent practice

Cross a heterozygous purple plant with a white plant under the same inheritance model. Give offspring genotypes and phenotypes.

Step-by-step answer

1. Parents: Pp × pp.

2. Gametes: P or p from the first parent; p from the second.

3. Offspring are Pp or pp with equal probability.

4. Genotype ratio 1 Pp : 1 pp; phenotype ratio 1 purple : 1 white.

Make the correction useful

Write down the first step you missed and why. Close this answer, solve the question again, then explain your method in your own words.

Return to the worked method

Practise. Check. Retry.

1. Choose one Paper 1 method and one Paper 2 method from the index. Attempt both before reading the solutions.

2. Identify the first incorrect operation or missing causal link. Record it below.

3. Study that part of the explanation, then redo the full question without copying.

4. Complete the new practice question and compare reasoning, units, terminology and conclusion.

5. After a gap, mix question types so you must choose the method yourself.

6. Use a complete released DBE paper with its matching memo to practise unfamiliar wording and pacing.

Personal pacing

Each written paper is 150 minutes for 150 marks in the cited guideline. Reserving 15 minutes for checks leaves about 0.90 minutes per mark. This is a planning aid, not an instruction to stop midway through useful working.

Error log

Question ID: _____ Date: _____
My first incorrect step: _____
The reason it failed: _____
The corrected method: _____
Retry date and result: _____

Back to method index

Continue with official papers

Scope checked 9 October 2026. Circular E17 of 2025 retains the 2021 NSC examination guidelines for the 2026 examinations. The paper map uses the subject guideline; the questions and explanations here are newly authored.

Open this subject's DBE examination guideline

Open Circular E17: guideline extension to 2026

Open the DBE FET annual teaching plan directory

Open DBE May/June 2026 papers and marking guidelines

Open the DBE Mind the Gap study-guide directory

Choose the correct subject, paper number, language and exam session. Download its matching memo and any addendum. Resource titles above are clickable. Official resources remain freely accessible.

Coverage still to practise

Further practice: full reproductive-system and brain diagrams, ear and balance, endocrine disorders, detailed human-evolution fossils, genetic engineering, extended DNA profiling, sex-linked and blood-group inheritance, complex pedigrees and unfamiliar investigation graphs. These methods sample the scope; they do not replace the full textbook or syllabus.

Scope references support topic placement; they are not an official endorsement or a claim that these original questions appeared in an examination. Independent teacher moderation remains pending.

Back to method index