Biology extension review: mechanisms

Student activity • observation and reasoning

YEAR 11 / LESSON 115 / BIOLOGY ONLY

The question

Can you explain extension mechanisms without mixing up their stages?

Use the supplied examples, record your reasoning and correct it using evidence.

Equipment

- Student booklet, pencil and ruler
- Previous extension worksheets and mechanism diagrams

Paper, modelling and written reasoning only. No chemicals or biological samples are handled.

Course coverage: Biology-only consolidation of extension content.

Plan, model or apparatus sketch

Draw and label the apparatus or biological model; identify one limitation.

Method and reasoning

Read the whole sequence before starting

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1. Choose three extension topics from enzyme pH investigations, transpiration, kidney regulation, immune memory and protein synthesis.

2. Draw a stepwise mechanism for each, including the relevant location, molecule or structure.

3. For kidney regulation distinguish pressure filtration, solute reabsorption and water osmosis.

4. For protein synthesis distinguish transcription from translation and codons from anticodons.

5. For a practical distinguish the measured variable from the biological process inferred.

6. Use the six prompts to diagnose errors, then correct them with reasons and identify one remaining revision priority.

Cleanup

- Return models and keep the corrected work.

Record your evidence

Blank spaces are for your own work

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Reference and task data

This additional lesson is for separate Biology consolidation. Use previous worksheets and actual practical records. It introduces no new laboratory procedure and no claimed exam-board questions.

Example / trial	Observation / evidence	Explanation / limit
Evidence / comparison		
Explanation		
Limit / correction		

Show your calculations, labelled model or correction here.

Explain and evaluate

Use evidence and show calculation steps where relevant

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1. Does ADH directly pump water?

2. Does a potometer directly measure all water lost?

3. What crosses a chemical synapse?

4. What is the role of a codon?

5. Why can a secondary immune response be faster?

6. Why is a pH comparison not controlled if temperature also differs?