Proposed Marking and Commentary

Computer Science Assessment 3 Set S of 2026

Staff only | proposed marks for synthetic responses

The materials accompany the EcoQuest Learning sample coursework brief and staff mark scheme, revised on 14 October 2026. All three tasks are addressed: Python game 70 marks, database 15 marks and spreadsheet 15 marks.

The examples are synthetic materials for teaching and standardisation. Test records describe execution of the supplied generated examples; they do not represent observed learner activity. No learner signature or supervision record is supplied.

Marks are proposed against the revised sample staff mark scheme. Each criterion is considered independently. An implementation defect does not automatically remove credit for a valid design, an informative test or an accurate evaluation. Uncorrected errors do not earn correction or retest credit. No mark is added for a graphical interface, inheritance, integration, an extra database table or an extra record.

Response	A /10	D /15	I /25	T /10	E /10	DB /15	SS /15	Total /100
SYN01	10	15	25	10	10	15	15	100
SYN02	10	15	24	8	10	14	14	95
SYN03	6	6	22	8	10	8	6	66

The totals are evidence-based examples for standardisation. No grade boundaries or attainment claims are assigned. The native files and full reports should be available when these judgments are discussed.

Response SYN01: 100/100

Analysis: 10/10

Criterion	Mark	Evidence and rationale
A1	2/2	Identifies EcoQuest Learning, the educational purpose and GCSE pupils with relevant readability/feedback needs.
A2	2/2	Defines checkable game, database and workbook outcomes rather than a general claim that the product works.
A3	2/2	Analyses the inputs, state processing, outputs and validation for the three products.
A4	2/2	Identifies console, supplied data and supervised time constraints and proposes staged development.
A5	2/2	Explains a revision benefit and access limitation in context.

Design: 15/15

Criterion	Mark	Evidence and rationale
D1	2/2	Decomposes data, round, session and output responsibilities and explains their interaction.
D2	3/3	Pseudocode provides a coherent loop, complete-word win condition and zero-attempt loss.
D3	3/3	Plans normalisation, invalid-input rejection, repeat handling, all-match reveal and attempt rules.
D4	2/2	Plans random selection from unused pairs and explicit replay/exit and exhaustion behaviour.
D5	3/3	Defines class state, constructor, method responsibilities and paired data.
D6	2/2	Plans normal, boundary and invalid tests with expected outcomes.

Implementation: 25/25

Criterion	Mark	Evidence and rationale
I1	5/5	All 12 pairs are preserved, random selection is from unused pairs, and input normalisation/invalid rejection pass.
I2	8/8	Correct and repeated guesses preserve state; new errors alone reduce attempts; the UI state is accurate.
I3	6/6	Win, loss, outcome, replay and non-reuse behaviour pass.
I8	3/3	GameRound and EcoQuestGame contain relevant state, constructors and actions.
I9	3/3	Readable standard-library code has separated data, round and session logic with meaningful names.

Testing: 10/10

Criterion	Mark	Evidence and rationale
T1	8/8	The recorded suite covers the required normal, repeat, invalid, win/loss and session cases with expected/actual results.
T2	2/2	Comprehensive synthetic checks found no defect in the tested boundary set; both marks are limited to this record.

Evaluation: 10/10

Criterion	Mark	Evidence and rationale
E1	3/3	Judgements are tied to specified criteria and actual test outputs.
E2	3/3	Discusses GCSE usability, access limits and their consequences without claiming user trials.
E3	4/4	Two realistic changes include implementation and concrete regression checks.

Database: 15/15

Criterion	Mark	Evidence and rationale
B1	3/3	Clues has all five required names, suitable types and text lengths.
B2	2/2	All 12 supplied rows and associations are preserved.
B3	2/2	ClueID uniquely identifies a clue and remains stable as a foreign-key target.
B4	4/4	Allowed Subjects, integer difficulty boundaries and required fields are enforced; named constraints produce understandable SQLite rejection messages and tests confirm each boundary.
B5	4/4	Games has exactly GameID and ClueID, a GameID key, working ClueID link and relationship rationale.

Spreadsheet: 15/15

Criterion	Mark	Evidence and rationale
S1	6/6	All 12 formulas and one-decimal display work; totals reconcile and unweighted mean is correct.
S4	3/3	Win-rate order is ascending and every complete row remains together.
S5	4/4	Review suggestions cite rates, counts and difficulty and do not claim causation.
S6	2/2	Explains how aggregation omits learner context and why that limits interpretation.

Response SYN02: 95/100

Analysis: 10/10

Criterion	Mark	Evidence and rationale
A1	2/2	Identifies the client, users and need, but contextual detail is brief.
A2	2/2	Specific game functions and measurable six-attempt, input, repeated-guess and outcome conditions are stated.
A3	2/2	Identifies major data and interactions, with incomplete validation analysis.
A4	2/2	A console constraint is identified and the work is organised into game, database and workbook stages suitable for the three-product project.
A5	2/2	States a practice benefit and text-access limitation, with limited consequence detail.

Design: 15/15

Criterion	Mark	Evidence and rationale
D1	2/2	Separates round/session and data tasks and describes their main sequence.
D2	3/3	Plans a loop, win and loss conditions clearly.
D3	3/3	Plans input normalisation and no-penalty repeats, although implementation conflicts with the plan.
D4	2/2	Random selection from unused pairs and removal of the selected pair support another round without reuse; exhaustion is not a separate marking requirement.
D5	3/3	Purposeful class state and responsibilities are identified.
D6	2/2	The normal, boundary and invalid planned cases specify expected display or attempt outcomes.

Implementation: 24/25

Criterion	Mark	Evidence and rationale
I1	5/5	Uses the supplied data, matching clue and input normalisation; invalid input is handled.
I2	7/8	Most guess rules work, but repeated incorrect guess incorrectly reduces the counter.
I3	6/6	Win/loss and replay work; session non-reuse works in the bounded tests.
I8	3/3	The class and session manager contain relevant state and actions.
I9	3/3	The modules, class names and method responsibilities are readable and maintainable; the repeat-penalty behaviour is scored under I2.

Testing: 8/10

Criterion	Mark	Evidence and rationale
T1	8/8	All required behavioural areas, CSV consistency and console replay/exit are covered by expected and actual results; G05 is honestly recorded as failing.
T2	0/2	The recorded failure was not corrected or retested.

Evaluation: 10/10

Criterion	Mark	Evidence and rationale
E1	3/3	The evaluation judges the game against its requirements, cites G05 and passing checks, and explains the consequence of the unresolved repeat-penalty defect.
E2	3/3	The clue, mask and feedback are considered for pupils; the text-only limitation and its effect on users requiring speech or alternative input are explained.
E3	4/4	Two realistic changes include specific implementation steps and regression tests; neither is falsely described as completed.

Database: 14/15

Criterion	Mark	Evidence and rationale
B1	3/3	Clues field names, types and text capacity are appropriate.
B2	2/2	All 12 supplied clue rows and pairings are preserved.
B3	2/2	ClueID and GameID are unique identifiers with a stated role.
B4	3/4	Named required-field and Difficulty checks reject blank Word and invalid integer/range values with identifiable messages; unlisted Subject Air is accepted.
B5	4/4	Games has the two required fields, key and enforced ClueID relationship.

Spreadsheet: 14/15

Criterion	Mark	Evidence and rationale
S1	5/6	Row formulas, formatting and totals work, but the mean uses a weighted ratio.
S4	3/3	Rows are sorted ascending without separating their fields.
S5	4/4	Recommendations cite rates and difficulty and use review language.
S6	2/2	A contextual limitation is stated, though its consequence is brief.

Response SYN03: 66/100

Analysis: 6/10

Criterion	Mark	Evidence and rationale
A1	2/2	EcoQuest, its educational purpose, GCSE pupils and the need for quick revision practice are identified.
A2	1/2	Lists broad aims without measurable behaviour criteria.
A3	1/2	Names some inputs and outputs but omits key validation/state rules.
A4	1/2	The console and time constraints are identified. A suitable development approach is not explained.
A5	1/2	Mentions a practice benefit and text-only limitation without full access analysis.

Design: 6/15

Criterion	Mark	Evidence and rationale
D1	2/2	Round, session and console responsibilities are separated and their interaction through selection, guessing, outcome and replay is described.
D2	3/3	The basic pseudocode includes a repeated guessing loop, a completed-word win and a zero-attempt loss.
D3	0/3	The design does not specify normalisation/validation, penalty-free repeat handling or the all-match/new-incorrect-letter rule.
D4	0/2	The design selects a term and offers replay, but does not specify random selection from unused pairs or a process that prevents reuse.
D5	1/3	A class is present, but its state ownership and methods are only partly defined.
D6	0/2	Correct, incorrect and replay cases are named, but planned expected outcomes are not supplied.

Implementation: 22/25

Criterion	Mark	Evidence and rationale
I1	5/5	All supplied term/clue pairs, random selection, clue display, normalised input and invalid-entry handling are implemented.
I2	7/8	Attempt, invalid-input and repeat rules work; only all-occurrence reveal fails for repeated letters.
I3	4/6	Loss, outcome/correct-term display, replay/exit and resetting the round are evidenced. G13 shows a repeated-letter term does not end as a win; G09 shows term reuse. Those two required behaviours are absent.

Criterion	Mark	Evidence and rationale
I8	3/3	GameRound and EcoQuestGame are purposeful classes with relevant state, constructors and actions.
I9	3/3	Readable names and separated round/session responsibilities are present; behaviour defects are scored under I2 and I3.

Testing: 8/10

Criterion	Mark	Evidence and rationale
T1	8/8	Expected and actual results cover normal input, invalid input, repeats, win/loss, replay/exit, pair consistency and the failed session cases.
T2	0/2	No corrections or retests are documented after failures.

Evaluation: 10/10

Criterion	Mark	Evidence and rationale
E1	3/3	The evaluation makes explicit judgments, uses G02/G09/G10/G13 results and explains why reveal and session-selection criteria are unmet.
E2	3/3	The console feedback is considered; specific speech, larger-text and alternative-input limitations and the consequences for users are explained.
E3	4/4	Two realistic code changes include implementation steps and specific regression checks, although they remain proposals.

Database: 8/15

Criterion	Mark	Evidence and rationale
B1	3/3	All five field names and suitable TEXT/INTEGER types are present. SQLite TEXT has sufficient capacity and all supplied values are preserved without truncation.
B2	2/2	All 12 source rows and their five values are preserved.
B3	1/2	ClueID is set as primary key. The report does not explain clearly why its unique value identifies each clue record.
B4	0/4	Subject, integer/range and required-field rules are absent. Recorded invalid values are accepted, so the required rejection-and-message evidence is not demonstrated.
B5	2/4	Games contains the exact two required fields and GameID primary key; no enforced ClueID relationship is present.

Spreadsheet: 6/15

Criterion	Mark	Evidence and rationale
S1	1/6	The displayed percentages are typed rather than formula-driven; the one-decimal display criterion is met.
S4	0/3	Source order is retained; no ascending sort is performed.
S5	3/4	Habitat and turbine are relevant review cases; their percentages and ratings support the selections, and clue/rating changes are proposed. The recommendations lack a developed explanation that treats the data as evidence for review rather than proof.
S6	2/2	The workbook explains that combined user results cannot show why an individual word is difficult; this is a contextual limitation of the model.