سلطنة عمان
وزارة التربية والتعليم

مركز القياس والتقويم التربوي
The Center for Educational Assessment and Measurement (CEAM)

رؤية عمان 2040
نتقدم بثقة
Moving Forward with Confidence

Student Assessment Handbook for Science

(Grades 5 –10)

Private Schools (Bilingual)

September 2025

Introduction:

Educational assessment is one of the fundamental processes that accompanies the teaching and learning process. It aims to improve and develop its various elements by providing essential information and data on strengths and areas for improvement, thereby supporting informed judgments about the effectiveness of the educational process.

Although there are various types of educational assessment, continuous assessment, including both formative and summative approaches, is considered one of the most prominent types. It helps students identify their progress, informs parents about their children's performance levels, and provides teachers with valuable insights into the extent to which their students are achieving the intended learning objectives in science subjects. It also supports teachers in improving instructional methods and fosters genuine partnership among all stakeholders in the teaching and learning process through shared roles and responsibilities aimed at achieving quality education.

This document, dear teacher, serves as your guide for implementing the continuous assessment system for the subject you teach. It outlines a concise theoretical framework explaining the concept of continuous assessment, along with its principles, stages, and procedures. It also provides a practical reference that supports the effective use of assessment tools by clarifying implementation steps, the technical specifications required for each tool, and the methods for recording and reporting grades. Therefore, this document serves as an essential reference to help ensure the effective implementation of classroom assessment and the success of the teaching and learning process.

We direct you, dear teacher, to read and reflect on this document thoroughly in order to benefit fully from it, developing your skills and enhancing the quality of assessment. We also encourage you to contribute your expertise and creativity to support the smooth and effective implementation of continuous assessment for your students, helping to achieve the intended educational goals within the parameters and guidelines set out in the General Document for Student Learning Assessment.

Future skills assessment

In today's rapidly evolving world, equipping students with future skills is crucial for their success in education, life, and the job market. These skills, including adaptability, effective communication, technological proficiency, critical thinking, and problem solving, are vital for navigating constant change.

The National Framework for Future Skills stresses the need to embed these crucial skills into education. This means creating an assessment system that can precisely measure student skill acquisition. It requires specific assessment tools with clear indicators and the use of **E-assessment** for accurate and effective measurement.

The framework categorises these skills into three main areas:

- **Core Skills:** Reading and writing in Arabic and English, and numeracy.
- **Applied Skills:** Creativity, innovation, critical thinking, problem-solving, effective communication, teamwork, leadership, initiative, flexibility, and adaptability.
- **Technical Skills:** Information and communication technology, data handling, and media literacy.

To ensure students truly acquire these skills, some are implicitly integrated into current assessment tools, while others are explicitly stated in student assessment handbooks across subjects. This approach aims to unify assessment practices among teachers and foster a shared understanding. By building precise indicators within continuous assessment tools, teachers can identify student strengths and areas for development, ultimately enhancing their abilities.

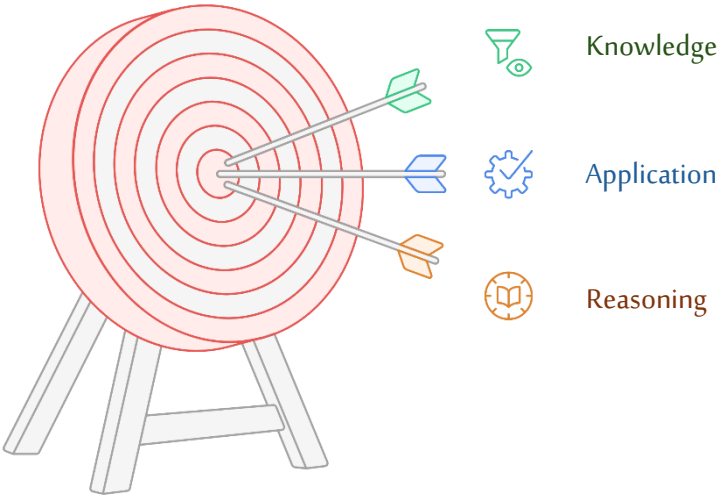
Electronic assessment

Effective **E-assessment** plays a crucial role in improving educational quality and student outcomes. Educators, supervisors, and assessment specialists, use digital tools, software, and diverse learning materials to gather and analyse student responses. This allows for data-driven, objective judgments about academic achievement using both quantitative and qualitative insights.

It is essential to implement student learning assessments electronically through approved platforms, according to the summative assessment standards outlined in the official document. While some tools, like short test, cannot be administered electronically, others like homework and projects can be completed remotely. If electronic submission is not possible, students can submit paper copies to their teachers.

Assessment Objectives (AOs)

The assessment objectives include the following:



A detailed explanation of these assessment objectives is provided below:

Knowledge

This assessment objective assesses the ability to recall and retain information. It includes straightforward items that require retrieving previously learned facts or providing simple explanations or understanding of phenomena.

This assessment objective may include:

- Describing the properties of materials and processes.
- Recognising and using scientific terms, symbols, formulae, and units.
- Identifying instruments used for measurement and selecting appropriate units.
- Recalling information, phenomena, facts, constants, definitions, concepts, and scientific theories.
- Recognising the appropriate use of tools, devices, and scientific methods, including safety equipment, and describing them.
- Demonstrating understanding of the social, economic, and scientific implications of scientific and technological applications.

Application

Measures the student's ability to apply their knowledge and skills in unfamiliar contexts through logical thinking and drawing inferences.

This assessment objective may include:

- Presenting data in tables or graphs.
- Explaining scientefic observations and ideas.
- Converting information from one form to another.
- Recognizing similarities and differences, materials, or processes, and classifying or describing them.
- Identifying, selecting, and organizing information from various sources such as tables, graphs, or charts.
- Applying knowledge to interpret information presented in different forms such as tables, drawings or graphs.
- Linking the understanding of specific scientific concepts to unfamiliar contexts.
- Using diagrams or models to demonstrate Knowledge.

Reasoning:

Assesses the student's ability to think logically and systematically, and to solve problems in unfamiliar contexts by applying their knowledge and skills to reach evidence-based explanations and conclusions.

This assessment objective may include:

- Justifying using evidence and scientific understanding to support explanations.
- Formulating statements that generalize observed patterns.
- Evaluating alternative explanations.
- Drawing conclusions based on given information, demonstrating understanding of cause and effect.
- Recognising, describing, and using relationships in scientific information.
- Predicting outcomes and assumptions based on conceptual understanding and knowledge.
- Planning experiments and investigations to answer scientific questions or test hypotheses, and identifying the characteristics of investigative processes.
- Interpreting and evaluating experimental methods, observations, and data, and suggesting possible improvements in any of them.

Levels of Demand

The following table outlines the three levels of demand along with the abilities associated with each level:

Level of Demand	Associated Abilities
Low	• Demonstrates some knowledge and understanding, such as simple answers, explanations, or analysis. • Uses basic technical vocabulary (scientific terms), and demonstrates communication and numerical skills. • Performs simple calculations and applies formulas. • Solves simple problems within a limited range of situations. • Demonstrates some knowledge and understanding of experimental techniques by describing methods for making observations or measurements. • Writes simple conclusions based on collected or provided evidence.
Medium	• Demonstrates good knowledge and understanding. • Uses technical vocabulary accurately, and demonstrates communication and numerical skills across a range of contexts. • Performs moderately complex calculations and manipulates formulas. • Solves moderately difficult problems across a range of situations. • Demonstrates understanding of experimental techniques by explaining methods for obtaining reliable evidence. • Links concepts when analysing information. • Writes and justifies conclusions based on collected or provided evidence.
High	• Demonstrates detailed knowledge and excellent understanding. • Uses technical vocabulary proficiently, and demonstrates communication and numerical skills across a range of contexts. • Performs multi-step calculations when instructions are unclear. • Solves complex problems in unfamiliar situations. • Demonstrates strong familiarity with experimental techniques by describing detailed methods for obtaining accurate and reliable evidence. • Links concepts when analysing and evaluating information. • Writes and justifies detailed conclusions based on collected or provided evidence.

Note: - Note: It is not necessary that the level of demand of an item is linked to the type of assessment objective (Knowledge, Application, Reasoning). For example, a high demand item may still fall under the Knowledge assessment objective.

Types of Items and Principles for Their Construction

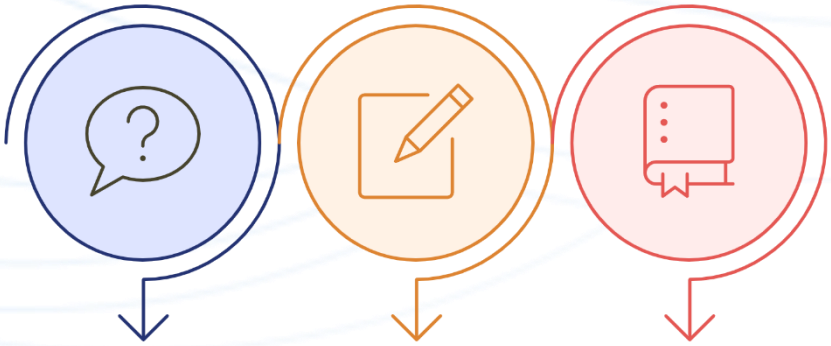
An **item** is the smallest independent assessment unit, assigned one or more marks.

A **question** is a broader construct consisting of one or more items (compound question) and is typically presented within a defined cognitive context, known as the stem.

When constructing items, consideration must be taken to ensure that the guessing rate does not exceed 25%, particularly for multiple-choice items, to maintain accuracy and fairness in assessment. Closed-ended items, such as "Is the unit of mass (kg)?", should be avoided, as they allow a 50% chance of a correct response by guessing, without demonstrating the student's understanding or their ability to accurately distinguish scientific concepts.

Assessment items—whether constructed for homework, short tests, or final examination papers—are developed to measure the achievement of curriculum-based learning outcomes. They fall into three types, none of which require separate categorisation.

Any type may appear as a stand-alone item or be integrated into a compound question alongside other types.



Multiple Choice Items Short Answer Items Long Answer Items

The following table outlines these three types:

Multiple Choice Items	Short Answer Items	Long Answer Items **(For Grades 9 –10 Only)**
▪ Each item is assigned one mark only. ▪ Each item measures one learning outcomes only. ▪ Each item requires choosing one correct option from four alternatives. ▪ Distractor (alternative option) must be appealing and topic related. ▪ Incorrect alternatives (distractors) must be plausible, yet completely wrong. ▪ All options must be independent and clear; avoid choices such as "all of the above," "none of the above," only options A and B,". ▪ The stem may present information in text, diagrams, charts, graphs, tables, or pose the question directly. ▪ Direct questions may be used instead of command words, e.g., "What...?" ▪ Options should be arranged in a clear and logical order (alphabetically, chronologically, numerically, or by option length). Similar items may be grouped in pairs.	▪ Each item is assigned one or two marks only. ▪ For grades (5–8), includes: one-word or short-sentence answers, fill-in-the-blank, true or false, yes or no with explanation, ordering and sequencing, matching, adding information to a network, table, or figure, and interpretation. ▪ For grades (9–10), includes: one-word or short-sentence answers, completing equations or tables, adding information to a network, table, or figure, interpretation, or yes/no with explanation.	▪ Each item is assigned three or four marks only. ▪ Each item requires a long answer involving explanation, analysis, presentation of facts, evidence, data, or problem-solving steps. ▪ Each item may use no more two than command words, ensuring they are interconnected and serve one integrated request measuring higher-order or interconnected skills. Each command word should begin on a new line as a separate sentence, yet the item is still considered one unit. ▪ Each item requires deep thinking and analysis, not just listing or recalling facts. Use command words such as explain, analyse, discuss, interpret, rather than list, name, identify.

There are several general principles that should be observed when drafting the items:

Language:

- All items should be based on the curriculum for the relevant grade.
- Only scientific, technical, and mathematical terms included in the curriculum should be used.
- Avoid negation where possible; if necessary, highlight the negation word or particle, such as "not" or "no."
- The command verb should align with the learning objective, assessment objective, and difficulty level.
- Avoid double negation; items should not contain two negation words.
- Use bold for keywords, e.g., "Provide one example...," "Describe two steps...," "Present two pieces of evidence..."
- Items should be presented clearly using concise and short sentences, with simple language and correct grammar.
- Items should be formulated using a command word unless the nature of the item requires a direct interrogative style.

Diagrams:

- Diagrams and their data should be presented clearly.
- They should include only the necessary information for answering the items.
- They should be used only if they contribute to answering the question or to clarifying the question or part of it.
- A key may be added to the diagram to clarify the meaning of symbols or data, especially if they are new to the student.
- For Grades 9 and 10: diagrams and tables should be labelled clearly and consistently, and should be referenced accurately in the questions.

Graphs:

- Axes should be defined and labelled, where appropriate, with correct scales and origins.
- Any labelling should be added as needed, e.g., equations of lines/curves or specific points.
- Table titles and graph axis labels should include units so that numbers in the table or on the graph are dimensionless.

Units:

- All data should be rounded to the appropriate number of significant figures.
- Measurement units should be appropriate and specified in relevance to the curriculum.
- Units should be included in the answer space unless a separate mark is allocated for them.

Item Formatting:

- For all types of items the mark should be written at the end of the answer space, in square brackets [ ].
- The mark awarded to the item should reflect the required answer including the steps or explanations.

Marking Scheme:

- Marks must be integer numbers (0, 1, 2,...), not fractions or half marks.
- The mark awarded should reflect the level of effort, steps taken, and skills demonstrated.
- Use the suggested answer scheme on page no 39.
- Acceptable correct scientific responses not explicitly listed in the curriculum should be included in the additional information column.
- The answer scheme should be accurate, complete, clear, and free from ambiguity.
- The answer scheme may include additional valid content beyond what is required, provided this is indicated in the additional information section.
- The additional information section is essential to ensure that markers apply a clear and consistent marking approach.

Continuous Assessment Tools

1. Continuous Assessment Tools for Grades (5-9):

Assessment Tool	Marks	Evaluation During the Semester
Homework	10	Twice (5 marks each)
Dialogue	10	Twice (5 marks each)
Practical Activity	10	Once
Short tests	30	Twice (15 marks each)
End-of-Semester Exam	40	Once
Total	**100**	

2.Continuous Assessment Tools for Grade (10):

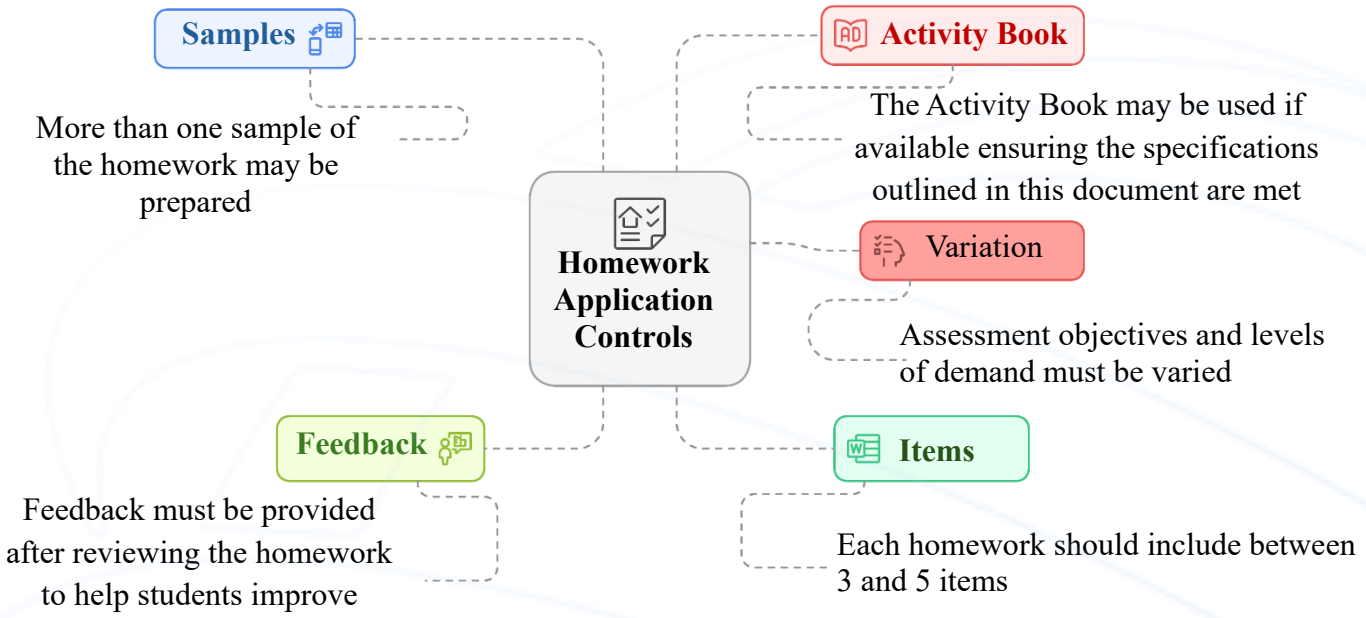
Assessment Tool	Marks	Evaluation During the Semester
Homework	5	Once
Dialogue	5	Once
Practical Activity	10	Once
Short tests	20	Twice (10 marks each)
End-of-Semester Exam	60	Once
Total	**100**	

Specifications for Continuous Assessment Tools

1- Homework

A planned assessment tool designed to achieve specific learning outcomes from the curriculum. It is assigned by the teacher for students to complete at home, taking into account their individual differences and ensuring appropriateness for each learner. Homework must be marked accurately, and timely feedback must be provided to students. It serves as an opportunity for students to practise answering various item types that reflect different assessment objectives and levels of demand. Therefore, the teacher is advised to assign a series of formative tasks before using homework as a summative assessment tool.

The following must be considered when implementing homework:



2- Dialogue

Dialogue is a tool used to promote interaction between the teacher and students, among peers, or within small groups. It assesses students' understanding of lesson content, forms part of regular formative assessment, and offers opportunities to address misconceptions and consolidate learning.

The following guidelines should be considered when implementing oral assessment:

Implementation Procedure

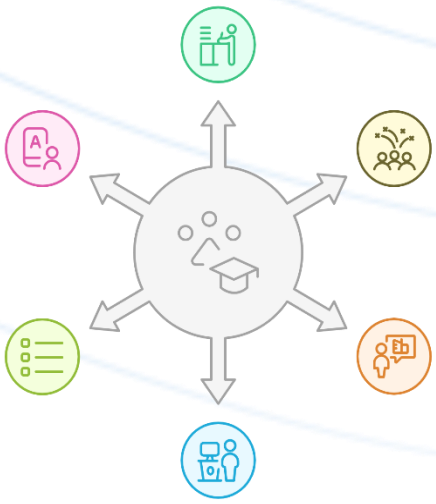
Oral dialogue may be conducted with the student standing in the front of classmate and teacher to engage in a discussion on a specific topic. It may also be conducted between the teacher and the student, or between one student and a peer.

Short oral questions

Oral dialogue may include short questions requiring precise and quick responses

Targeted students

Each session may focus on a specific group of students within the class



learning outcomes

Oral assessment is used to evaluate learning outcomes, taking into account various assessment goals and individual differences

Feedback

The teacher provides immediate feedback to support learning

Performance Assessment

The oral dialogue mark is awarded based on the criteria listed in the form on page (40), and is not determined by the student's behaviour, attendance, preparation of resources, written work, notebook organization, submission of a PowerPoint

3- Practical Activity

It is an assessment tool that engages students in activities related to what they have learned, with the aim of reinforcing scientific understanding, encouraging students to apply their knowledge in new contexts, promoting the use of scientific language, and developing a range of scientific inquiry skills. It may be conducted within the school setting—either in the laboratory or the classroom—or outside the school during a scientific visit or field trip.

The following guidelines should be considered when implementing practical activity:

Setting Objective

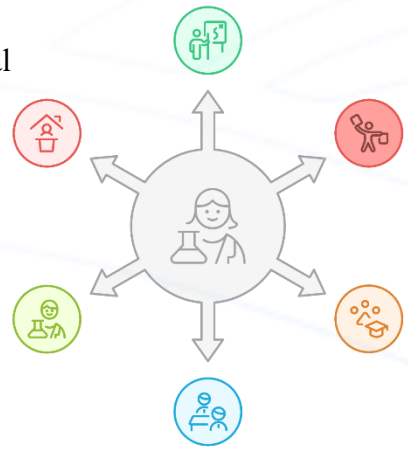
The teacher should determine the scientific inquiry objectives and practical skills outlined in the teacher's guide, based on the requirements of the experiment

Restrictions

Students must not be assigned practical activities to complete at home

Worksheets

The teacher may use the worksheets provided in the students' activity book when available, ensuring adherence to these guidelines



Practical lesson

It is recommended to conduct the practical lesson individually or in small groups when sufficient tools are available. If the tools are insufficient, the practical lesson may be delivered as a demonstration

Student Distribution

The teacher may use the table on page (37) to assign students to practical activity groups

Student evaluation

Practical work is assessed through observation and discussion during the activity, with a focus on scientific inquiry objectives and practical skills, using the assessment forms provided on pages (35)

4- Short tests

A short test is an assessment tool prepared and administered by the teacher at the end of a section of the curriculum, a specific topic, a chapter, or a unit during the semester.

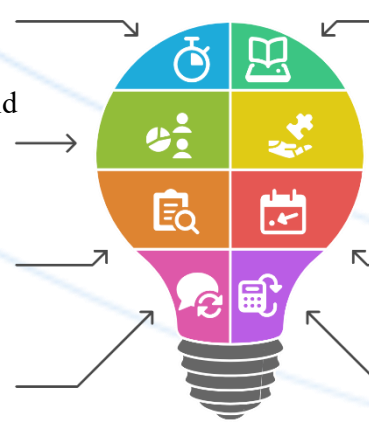
The following guidelines should be considered when preparing and administering short tests:

Test time: one class.

Diagrams and illustrations should be integrated appropriately within questions and answers.

Marking scheme should be prepared using the proposed format found on page (39).

Students must be given immediate feedback after the test is marked.



The short test covers content from 2 to 5 specific topics.

Outcomes should be varied, and repetition of the same objective within a single test should be avoided.

If a student is absent, the reason for absence must be verified, and an alternative version of the test should be scheduled.

Calculators are not permitted in Grades (5–6). In Grades (7–10), calculators may be used as long as they are not programmable, do not store information (PRGM), and do not support graphing or equation solving functions.

- Repetition of the short test is only allowed in special cases and with approval from school administration and the senior teacher. Special cases include:
  - A sudden emergency that prevents a student from completing the test (e.g. illness or urgent situation), in which case a different version of the test must be administered.
  - Organisational or technical issues that compromise the test's credibility. In such cases, the test should be repeated for all students.
  - Serious scientific or technical errors due to lack of proper review, requiring the test to be repeated for all students.

Short Test Specifications for Science Subjects (Grades 5–10)

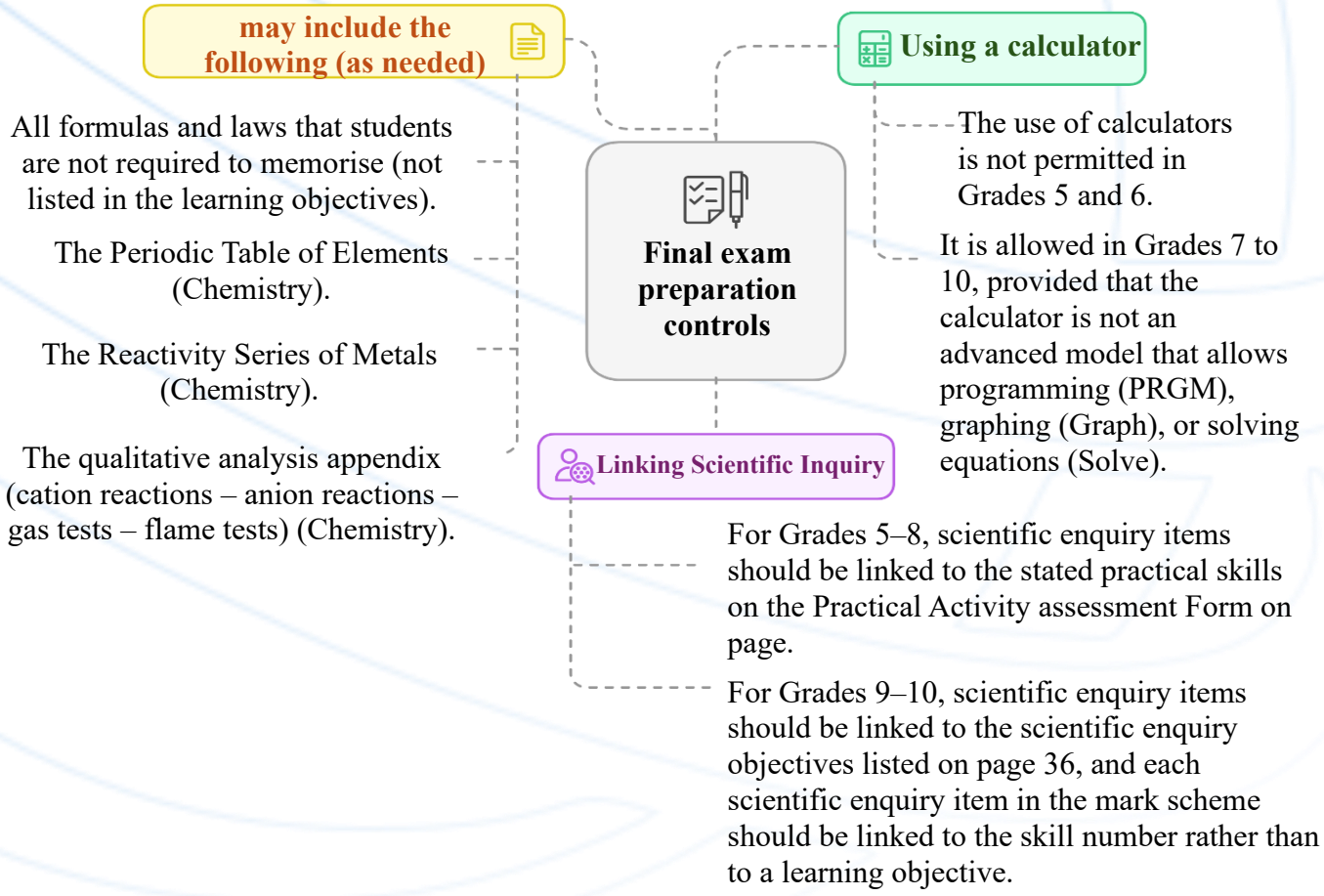
Short Test Specifications for Grades (5–9)	
Number of items	8 - 12 items.
Total marks	15 marks.
Marks According to the Assessment Objectives	Knowledge: 6 marks (40%) Application: 6 marks (40%) Reasoning: 3 marks (20%)
Types of items	**Grades (5-8):** - Three multiple choice items covering at least two different assessment objectives. - Five to nine short answer items. **Grade (9):** - Three multiple choice items covering at least two different assessment objectives. - One long answer item. - The remaining marks are distributed across short answer items, ensuring the total number of items falls within the specified range.

Short Test Specifications for Grade (10)	
Number of items	5 - 7 items.
Total mark	10 marks.
Marks according to the assessment objectives	Knowledge: 4 marks (40%) Application: 4 marks (40%) Reasoning: 2 marks (20%)
Types of items	- Two multiple choice items assessing Assessment Objective Knowledge and Assessment Objective Application - One long answer item. - The remaining marks are distributed across short answer items, ensuring the total number of items falls within the specified range.

End-of-Semester Examination

The end-of-semester examination is a summative assessment tool administered at the end of each academic semester.

The following guidelines must be considered when preparing the examination:



End-of-Semester Exam Specifications for Grades (5-9)	
Number of items	25-35 items
Total mark	40 marks
Duration of the Exam	One and a Half Hours
Marks According to Assessment Objectives	Knowledge: 16 marks (40%) Application: 16 marks (40%) Reasoning: 8 marks (20%)
Marks According to Level of Demand	Low: 16 marks (40%) Medium: 16 marks (40%) High: 8 marks (20%)
Types of Items for Grades (5–8)	- Eight multiple choice items, each worth one mark, ensuring a balance across the three assessment objectives: knowledge, application, and reasoning. - The remaining marks are allocated to short answer items, based on the total required number of items. - Between 6 to 8 marks are allocated for the scientific inquiry items.
Types of Items for Grade 9	- Eight multiple choice items, each worth one mark, ensuring a balance across the three assessment objectives: knowledge, application, and reasoning. - At least two long answer items are included. - The remaining marks are allocated to short answer items, based on the total required number of items. - Between 6 to 8 marks are allocated for the scientific inquiry items.

End-of-Semester Exam Specifications for Science Subjects (Physics, Chemistry, Biology) Grade (10)	
Number of items	30-40 items
Total mark	60 marks
Duration of the Exam	Two Hours
Marks According to Assessment Objectives	Knowledge: 24 marks (40%) Application: 24marks (40%) Reasoning: 12 marks (20%)
Marks According to Level of Demand	Low: 24 marks (40%) Medium: 24 marks (40%) High: 12 marks (20%)
Types of Items	- Ten multiple choice items, each worth one mark, ensuring a balance across the three assessment objectives: knowledge, application, and reasoning. - At least two long answer items are included. - The remaining marks are allocated to short answer items, considering the total required number of items. - Between 6 to 8 marks are allocated for the scientific inquiry items.

Weighting of the End of Semester Examination Paper

1. Weighting of the End of Semester Examination Paper for Grade 5

First Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
5	Science	First	Life cycles of flowering plants	33	16	16	8	13
			Sound	14				6
			States and properties of matter	33				13
			The atmosphere and the water cycle	20				8
			Total	100	40			40

Second Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
5	Science	Second	The digestive system	20	16	16	8	8
			Forces and magnetism	50				20
			Seasons and adaptation of plants and animals	30				12
			Total	100	40			40

2. Weighting of the End of Semester Examination Paper for Grade 6

First Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
6	Science	First	The human body	28	16	16	8	11
			Material properties and changes	44				18
			Rocks, the rock cycle and soil	28				11
			Total	100	40			40

Second Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
6	Science	Second	Food chains and food webs	20	16	16	8	8
			Forces and electricity	50				20
			Light and solar system	30				12
			Total	100	40			40

3. Weighting of the End of Semester Examination Paper for Grade 7

First Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
7	Science	First	Cells and organisms	15	16	16	8	6
			Diet and growth	11				4
			Structure and properties of materials	36				15
			Forces and energy	13				5
			Sound	6				3
			The earth in space	19				7
			Total	100	40			40

Second Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
7	Science	Second	Grouping and identifying species	20	16	16	8	8
			Ecosystems	8				3
			Chemical changes and reactions	14				6
			Solutions and solubility	8				3
			Electricity and circuits	14				6
			Magnetism	20				8
			The Earth and its climate	16				6
			Total	100	40			40

4. Weighting of the End of Semester Examination Paper for Grade 8

First Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
8	Science	First	Gas exchange and respiration	15	16	16	8	6
			Maintaining life	8				4
			Structure and properties of materials	16				6
			Properties of materials	18				7
			Forces and motion	18				7
			Light	15				6
			Sound	5				2
			Plate tectonics	5				2
			Total	100	40			40

Second Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
8	Science	Second	Photosynthesis and the carbon cycle	17	16	16	8	7
			Genes and inheritance	17				7
			Reactivity	26				11
			Forces and energy	23				9
			Electrical circuits	11				4
			Astronomy	6				2
			Total	100	40			40

5. Weighting of the End of Semester Examination Paper for Biology Grade 9

First Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
9	Biology	First	Characteristics of living organisms and classification	14	16	16	8	6
			Organization of the organisms	13				5
			Movement in and out of cells	21				8
			Biological molecules	5				2
			Enzymes	11				4
			Diseases and immunity	19				8
			Plant nutrition	17				7
			Total	100	40			40

Second Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
9	Biology	Second	Human nutrition	29	16	16	8	11
			Transport in plant	20				8
			Transport in animals	32				13
			Gas exchange	5				2
			Respiration	14				6
			Total	100	40			40

6. Weighting of the End of Semester Examination Paper for Chemistry Grade 9

First Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
9	Chemistry	First	The particulate nature of matter	13	16	16	8	5
			Experimental techniques	16				7
			The Periodic Table	23				9
			Atoms, elements and compounds	48				19
			Total	100	40			40

Second Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
9	Chemistry	Second	Chemical reactions	16	16	16	8	6
			Stoichiometry	34				14
			Acid, base and salts	39				16
			Identification of ions and gases	11				4
			Total	100	40			40

7. Weighting of the End of Semester Examination Paper for Physics Grade 9

First Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
9	Physics	First	Length and time	8	16	16	8	3
			Mass and Weight	11				4
			Density	8				3
			Scalars and vectors	8				3
			Motion	27				11
			Effects of forces	24				10
			Turning effect of force	14				6
			Total	100	40			40

Second Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
9	Physics	Second	Work	3	16	16	8	1
			Energy	28				11
			Kinetic particle model of matter	22				9
			Thermal properties	28				11
			Transfer of thermal energy	19				8
			Total	100	40			40

8. Weighting of the End of Semester Examination Paper for Biology Grade 10

First Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
10	Biology	First	Coordination and response	45	24	24	12	27
			Excretion in human	10				6
			Reproduction	45				27
			Total	100	60			60

Second Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
10	Biology	Second	Inheritance	37	24	24	12	22
			Variation and selection	13				8
			Organisms and their environment	29				17
			Human influence on ecosystem	21				13
			Total	100	60			60

9. Weighting of the End of Semester Examination Paper for Chemistry Grade 10

First Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
10	Chemistry	First	Chemical energetic	21	24	24	12	13
			Chemical reactions	12				7
			Redox	15				9
			Electrolysis	17				10
			Reactivity series	35				21
			Total	100	60			60

Second Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
10	Chemistry	Second	Organic Chemistry	81	24	24	12	48
			Chemistry of the environment	19				12
			Total	100	60			60

10. Weighting of the End of Semester Examination Paper for Physics Grade 10

First Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
10	Physics	First	Magnetism	12	24	24	12	7
			Static electricity	18				11
			Current	9				5
			Potential difference and electromotive force	7				4
			Resistance	7				4
			Electrical energy and power	4				3
			Electrical circuits	23				14
			Electromagnetic effects	20				12
			Total	100	60			60

Second Semester:

Grade	Subject	Semester	Topic of the Units	Weighting (%)	Marks According to Assessment Objectives			mark
					knowledge	Application	Reasoning	
10	Physics	Second	General wave properties	12	24	24	12	7
			Reflection of light	18				11
			Refraction of light	9				6
			Thin lenses	7				4
			Electromagnetic spectrum	7				4
			Sound	4				2
			Atomic mode	23				14
			Radioactivity	20				12
			Total	100	60			60

Appendices

Appendix (1): Practical Activity assessment Form for Grade 5

Activity title		Day and date	
Class		Group number	
Student names	1.	2.	3.
	4.	5.	6.

Practical skills	Practical Skills Assessment Criteria	Mark	Student number					
			1	2	3	4	5	6
Ideas and evidence	☐ Recognises that scientists combine evidence with creative thinking to propose new ideas and explanations for phenomena. ☐ Uses observation and measurement to test predictions and establish connections.	2						
Planning a scientific enquiry	☐ Predicts outcomes based on scientific knowledge and understanding, proposes ways to test these predictions, and communicates them effectively to others. ☐ Applies understanding and knowledge to plan a fair test. ☐ Collects sufficient evidence to investigate an idea. ☐ Identifies factors that need to be considered in different contexts.	2						
Obtaining and presenting evidence	☐ Makes relevant observations. ☐ Measures volume, temperature, time, length, and force. ☐ Discusses the importance of repeated observations and measurements. ☐ Presents results using bar charts and line graphs.	3						
Considering and Comparing Evidence	☐ Decides whether the results support the predictions. ☐ Begins to evaluate repeated results. ☐ Identifies patterns in the data and makes predictions based on them. ☐ Proposes explanations using scientific understanding and knowledge. ☐ Interprets data and judges whether it is sufficient to draw a conclusion.	3						
Total		**10**						

Scan the QR code to download the practical activity evaluation form for the different Grades.

5th Grade | 6th Grade | 7th Grade | 8th Grade | Grades 9 & 10

Appendix (2): Scientific inquiry objectives for grade (9-10)

Skill Number	Skill Name Use of scientific techniques, equipment, and tools.
1-1 1-2	Justifies the selection of equipment, materials, and tools for conducting experiments, evaluates potential hazards, and explains the safety measures implemented to ensure safe practice.
Planning	
2-1 2-2 2-3	Describes and explains the experimental procedures and techniques applied. Forms predictions and hypotheses based on a sound understanding of scientific concepts and knowledge. Identifies variables, explains how they can be measured, and justifies why certain variables need to be controlled.
Observation, Measurement, and Recording	
3-1 3-2	Draws schematic diagrams of the apparatus and labels its components accurately. Records observations systematically, applying appropriate units, numerical values, measurement ranges, and the required degree of accuracy.
Interpretation and Evaluation of observations and Data.	
4-1 4-2	Interprets and evaluates observations and experimental data, identifying unexpected results and addressing them appropriately. Processes, organises, and presents data clearly, including the use of calculators, graphical representations, and calculation of gradients.
Evaluation Methods	
5-1 5-2	Draws well-founded conclusions and justifies them by referencing data and providing appropriate scientific interpretations. Identifies potential sources of inaccuracy in data or conclusions and recommends suitable improvements to experimental procedures and techniques used.

Appendix (3): Student Group Allocation Form for Practical Activity

Student Allocation Form for Practical Activity			
Group	Practical Activity Title	Date	Names of students in the group
	Scan QR to Download		1-
			2-
			3-
			4-
			5-
			6-
			1-
			2-
			3-
			4-
			5-
			6-
			1-
			2-
			3-
			4-
			5-
			6-

Appendix (4): Proposed Template for the Short Test

Scan QR to Download

First short test for Biology, Grade 10
First semester- Academic year 2025/2026

سلطنة عمان
وزارة التربية والتعليم

Governorate.....
School.....

Student name: _____ Class:_____ Date:_____

Item number followed by a bracket (bold)

Item text in size 16 (regular)

Use the Times New Roman font.

1) _____ [1]

The mark is placed directly next to the

2)

(Shade the shape (▭) corresponding to the correct answer).

▭ ▭ ▭ ▭

Use this phrase for each multiple-choice item

In the compound questions, item letter should be in bold, followed by a dot, leaving a space from the beginning of the text.

3)

a. _____ [1]

Use lines for answers instead of dots

b. _____ [1]

No frame or page borders

End

Number the pages at the bottom

1

Appendix (5): Marking Scheme

Scan QR to Download

سلطنة عمان
وزارة التربية والتعليم

Marking Scheme for the First Short Test – Grade …

Semester One – Academic Year 2025/2026

Subject:……

Item		Answer	Mark	Additional information	Unit	Page	Outcomes	Assessment objectives
1								
2								
3	a.							
	b.							

Scan QR
to Download

Appendix (6): Proposal Dialogue Evaluation Form for Grades (5–10)

	Student Name	Date	Asks Questions or Responds Effectively	Uses Scientific Terminology	Clarity of Voice and Language	Links Responses to Previous Points and Provides Logical Answers	Accuracy of Scientific Content	Total (5 Marks)

Appendix (7): Student Performance Monitoring and Record Sheet Grades (5-9)

Scan QR to Download

Class:		Student Performance Monitoring and Record Sheet Grades (5-9)												Total	End-of-Term Examination	Overall Total
Teacher:																
Academic year:																
No.	Student Name	Homework (10 marks)			Dialogue (10 marks)			Practical Activity (marks 10)	Short tests (30) marks					60	40	100
		First	Second	Total	First	Second	Total		First	Second	Total					
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																

Appendix (8): Student Performance Monitoring and Record Sheet Grades (10)

Scan QR to Download

Class:		Student Performance Monitoring and Record Sheet Grade 10						Total	End-of-Term Examination	Overall Total
Teacher:										
Academic year:										
No.	Student name	Homework (5 marks)	Dialogue (5 marks)	Practical Activity (marks 10)	Short tests (20) marks					
					First (10)	Second (10)	Total	40	60	100
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

مركز القياس والتقويم التربوي

The Center for Educational Assessment
and Measurement (CEAM)

oman_ceam