



مركز القياس والتقويم التربوي

The Center for Educational Assessment  
and Measurement (CEAM)



سلطنة عُمان  
وزارة التربية والتعليم

# Student Assessment Handbook for Science Grades (5-9) for Private Schools (Bilingual)



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## A. INTRODUCTION

Assessment is an essential element of the educational process, by which the effectiveness of the educational process is evaluated, and the desired educational goals are achieved accordingly. As well as through which the elements of the different educational process are improved and developed due to the important information and data on the strengths and weaknesses of these elements.

Despite the multiplicity of patterns of educational assessment, continuous assessment is one of the most prominent of these patterns. This is due to the great importance it poses to help students know how much they have improved and inform parents about their children's performance levels. In addition, continuous assessment provides the teachers with important information about the level of achievement of educational goals/outcomes and helps them improve teaching methods and activates the real partnership between all related parties concerned with student education and learning through the integration of roles and responsibilities to assure quality in education.

This document is your guide to apply the continuous assessment. It provides a brief theoretical framework for the concept of continuous assessment and associated concepts and provides you with a frame of reference for how to implement continuous assessment tools by clarifying the mechanisms for implementing these tools and technical specifications.

For teachers to effectively apply the Continuous Assessment (CA) tools, teachers need to refer to the following documents:

1. Student Assessment Handbook for Science Grades (5-9) for Private Schools (Version 2018/ 2019).
2. The General Operational Framework for Private Schools in Oman for the academic year (Version 2021/2022).



## B. CONTINUOUS ASSESSMENT

*Continuous Assessment (CA)* includes a range of different assessment techniques which can be used in the classroom to gather information about student's learning.

This covers a wide range of activities depending on the assessment's purpose: formative and summative.

*Summative assessment* is assessment of student's learning, with the aim of providing evidence for reporting to parents and others. Its purpose is to measure standards.

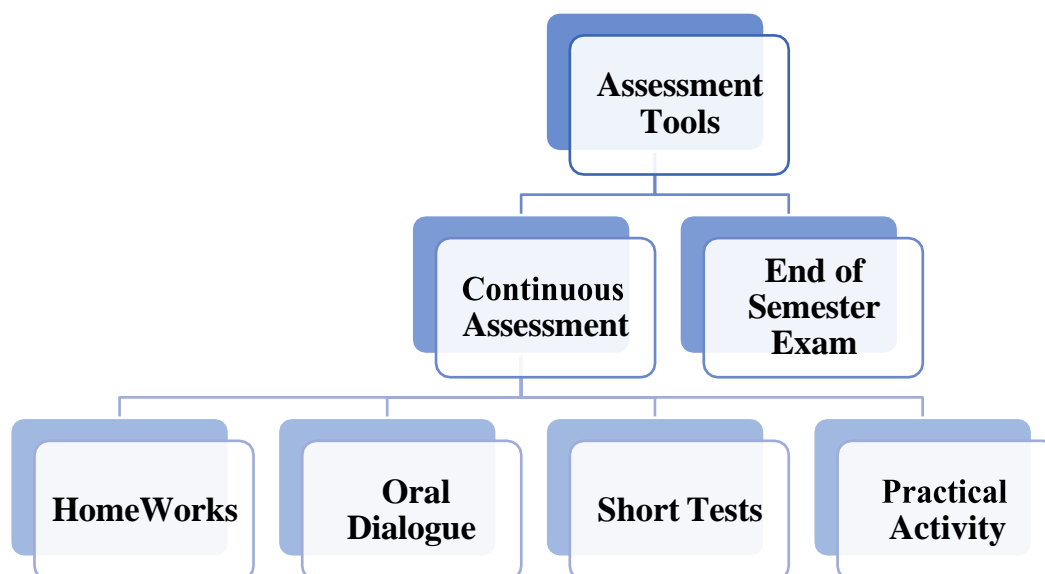
*Formative assessment* is assessment for learning, with the aim of helping students to achieve the relevant learning outcomes. Its purpose is to improve standards.

Recently digital tools are increasingly being adopted by schools to measure student's skills and knowledge and to determine that the learning objectives have been met. Both summative and formative assessments are important and valuable; neither should be neglected.

### *The most important ways in which Continuous Assessment (CA) can be beneficial are:*

- It is based on a positive view of assessment as a natural part of the teaching and learning process.
- It allows assessment of learning outcomes which are, for practical reasons, difficult to assess by means of formal testing.
- It can provide a fairer, more balanced picture of a student's achievement, especially for those who become nervous during formal tests.
- It provides information about student's learning at an early stage, making it possible for action to be taken promptly, while the academic year is still in progress.
- It encourages teachers to have good ideas about the performance of all their students and to closely observe individual student's on-going progress and development.
- It (possibly) motivates students to work hard consistently, if they know that their everyday work in class contributes to their report card assessment.

## C. ASSESSMENT TOOLS



### Relative weight for Assessment Tools

Grade	Assessment Tools	
	Continuous Assessment	End-of-Semester Exam
5-9	60%	40%

### Assessment Summary Chart

#### Marks Distribution for Grades (5-9)

Grades 5-9						
Continuous Assessment				Total	End-of-semester Exam	Total Marks
HomeWorks	Oral Dialogue	Practical Activity	Short Tests			
Twice a semester	Twice a semester	Once a semester	Twice a semester			
5 marks each (Total =10 marks)	5 marks each (Total = 10 marks)	(10 marks)	15 marks each (Total=30 marks)	60 marks	40 marks	<b>100 marks</b>

## D. TOOLS & TECHNIQUES FOR CONTINUOUS ASSESSMENT

This Section provides further information and explanation regarding the various tools and techniques, which can be used either in the classroom or electronically for assessment purposes in science during the academic year.

### 1. HomeWorks

An assessment tool used during the academic year to ensure that the student has acquired information, knowledge and skills.

It consists of one or two questions with three or five items in total that measure a specific learning outcome.

#### ➤ HomeWorks MUST:

- Be related to the curriculum outcomes.
- Be assessed *twice* during the semester each with (5) marks and the total (10 marks) is calculated.
- Prepared by the teacher or taken from the workbook for the student.
  - It can contain multiple choice or extended questions that vary between knowledge, application, and reasoning questions.
  - Cater for the different needs and different levels of the students.
- ❖ The teacher should take the following into account:
  - Follow up homework regularly and give feedback on time.
  - It is advisable to include homework in the scheme of the work.
  - Gives students a specific time to hand over the homework.

### 2. Oral Dialogue

- Be assessed *twice* a semester, each with 5 marks and the total is calculated.
- Teaching practices are conducted between two or more (Teacher and student, student and student).
- The teacher should prepare a set of questions (in the paper) before the lesson to assess students' understanding of what they have learned during the lesson or the previous lessons.

- Questions directed to a group of students and not for all the students at the same time (initial assessment). Then repeat this step after a period to be verified from the level (final assessment) and so on for the rest of the students.
- These questions should show different levels of learning.

### **3. Practical Activity:**

Practical activity refers to any teaching and learning activity which at some point involves the students in observing or manipulating the objects and materials they are studying. Such activities can help improve the development of students' practical laboratory skills and help them comprehend key scientific concepts and phenomena.

- ❖ The teacher should take the following into account:
  - Assess the student's performance during the practical performance either in pairs or among group. The groups and the students' roles in the experiment should be changed during the semester.
  - Teachers should use the following practical activity chart to assess each student in the group once a semester with 10 marks.
  - The teacher should provide the students with the criteria of the practical evaluation.

## Practical activity assessment form

School's name:		Grade	
Experiment's number:		Date	
Experiment's Title:			
No.	Student's Name		
1			
2			
3			
4			

Abilities	Skills	Mark	Stu.1	Stu.2	Stu.3	Stu.4
Initiating & planning	Understand the meaning of the aim or the scientific question	1				
	Predict the results of the practical work	1				
Exploring & recording	Consideration of the safety precautions when dealing with the tools and laboratory materials	1				
	Follow the steps of the practical activity step by step	1				
	Observe and record variations that occur during the practical work	1				
Analyzing & interpreting	Analyze the results that collected during the practical work	1				
	Interpretation of the results of the practical work in a scientific way	1				
	To solve a problem or to find a relationships, conclusions, and generalizations	1				
Communicating & Teamwork	Communicate with colleagues during implementation of the practical work	1				
	Providing solutions and proposals to overcome the difficulties	1				
<b>Total</b>		<b>10</b>				



#### **4. Short Tests**

*The following criteria must be taken into consideration while preparing the short tests:*

- There will be two short tests during the semester; each one is worth 15marks and the sum is counted to be 30 marks.
- The short test must be short, lasting no more than 30 minutes.
- The teacher should inform the students about the date of the test.
- The test must be set according to the approved curriculum outcomes.
- Learning outcomes which are included in the short tests will be included at the end-of-semester exam.
- Each short test must consist of two parts: (20% Multiple-choice items and 80% Extended response items).
- All short tests must reflect different learning levels (40% Knowledge, 40% application, 20% reasoning) and these level domains will be in details in the following tables.

<b>Learning Levels</b>	<b>Knowing</b>	<b>Applying</b>	<b>Reasoning</b>
Multiple-choice (Numberof items)	1	1	1
Extended response(Marks)	5	5	2
Weight of LearningLevels	40%	40%	20%

## Cognitive levels:



**Knowledge**



**Applying**



**Reasoning**

### Note the following instructions carefully:

- It is prohibited to repeat any test to any students without an official excuse (the form enclosed in the appendix 1)
  - The questions must not be repeated literally in any other written assignment tools.
- Prepare at least one sample of the test, if the number of students in the class is  $\leq 10$ .
- Prepare at least two samples of tests, if the number of students in the class is between 11 and 20.
- Prepare at least three samples of tests, if the number of students in the class is  $> 20$ .
- The questions should not be copied from exam past papers (unless modified).

- The answer key must be prepared for each test as follows:

Question	Item	Answer	Learning Levels			Objective Number
			Knowing	Applying	Reasoning	
<b>First Question</b> Multiple choices <b>(Total 3 marks)</b>	1					
	2					
	3					
<b>Second Question</b> Extended response <b>(12 marks)</b>	Q A	1				
		2				
		...				
	Q B	1				
		2				
		...				
	Q C	1				
		2				
		...				
<b>Total (15 marks)</b>			<b>6</b>	<b>6</b>	<b>3</b>	

## END-OF-SEMESTER EXAMINATION (2023/ 2024)

### **General Exam specifications for Grades (5-9)**

- Time: One and half hours for grades (5-8) and two and half hours for grade 9.
- The exam will be decentralized (prepare by teachers in private schools).
- Match with learning taxonomy – cognitive domain (knowing, applying, reasoning).

### **End-of-Semester Examination format (40 marks) For Grades (5-9)**

#### **1- Question Type:**

<b>Question Type</b>	<b>Percentage</b>	<b>Marks</b>
Multiple-Choice	20 %	8
Extended Response	80 %	32
Total	100 %	40

#### **2- Taxonomy (Cognitive Domain):**

<b>Level</b>	<b>Knowledge</b>	<b>Application</b>	<b>Reasoning</b>
Weighting	40 %	40 %	20 %

## End of Semester One Exam Specification for Science (Grade 5 - Bilingual) (2023/2024)

Topic of the Units	Weighting %	Multiple Choice (20%)					Extended Response (80%)					Total Mark	
		No. of Questions	Marks	Cognitive Levels			No. of Questions	Marks	Cognitive Levels				
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)		
Life cycles of flowering plants	30%	<b>8</b>	2	1	1	-	<b>12</b>	10	4	4	2	<b>12</b>	
Soud	15%		1	-	1	-		5	2	2	1		<b>6</b>
States and properties of matter	55%		5	2	1	2		17	7	7	3		<b>22</b>
<b>Total</b>	<b>100%</b>		<b>8</b>	<b>3</b>	<b>3</b>	<b>2</b>		<b>12</b>	<b>32</b>	<b>13</b>	<b>13</b>		<b>6</b>



## End of Semester Two Exam Specification for Science (Grade 5 - Bilingual) (2023/2024)

Topic of the Units	Weighting %	Multiple Choice (20%)					Extended Response (80%)					Total Mark
		No. of Questions	Marks	Cognitive Levels			No. of Questions	Marks	Cognitive Levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
The digestive system	21%	8	2	1	1	-	12	6	2	3	1	8
Forces and magnetism	50%		4	1	2	1		16	6	6	4	20
Seasons and adaptation of plants and animals	29%		2	1	-	1		10	5	4	1	12
Total	100%		8	3	3	2		32	13	13	6	40

## End of Semester One Exam Specification for Science (Grade 6 - Bilingual) (2023/2024)

Topic of the Units	Weighting %	Multiple Choice (20%)					Extended Response (80%)					Total Mark
		No. of Questions	Marks	Cognitive Levels			No. of Questions	Marks	Cognitive Levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
The human body	28%	<b>8</b>	2	1	1	-	<b>12</b>	9	4	3	2	<b>11</b>
Material properties and changes	44%		4	1	2	1		14	6	5	3	<b>18</b>
Rocks, the rock cycle and soil	28%		2	1	-	1		9	3	5	1	<b>11</b>
<b>Total</b>	<b>100%</b>		<b>8</b>	<b>3</b>	<b>3</b>	<b>2</b>		<b>32</b>	<b>13</b>	<b>13</b>	<b>6</b>	<b>40</b>

## End of Semester Two Exam Specification for Science (Grade 6 - Bilingual) (2023/2024)

Topic of the Units	Weighting %	Multiple Choice (20%)					Extended Response (80%)					Total Mark
		No. of Questions	Marks	Cognitive Levels			No. of Questions	Marks	Cognitive Levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
<b>Food chains and food webs</b>	<b>21%</b>	<b>8</b>	2	1	1	-	<b>12</b>	6	2	3	1	<b>8</b>
<b>Forces and electricity</b>	<b>50%</b>		4	1	2	1		16	7	6	3	<b>20</b>
<b>Light and solar system</b>	<b>29%</b>		2	1	-	1		10	4	4	2	<b>12</b>
<b>Total</b>	<b>100%</b>		<b>8</b>	<b>3</b>	<b>3</b>	<b>2</b>		<b>32</b>	<b>13</b>	<b>13</b>	<b>6</b>	<b>40</b>

## End of Semester One Exam Specification for Science (Grade 7 - Bilingual) (2023/2024)

Topic of the units	weighting %	Multiple choice (20%)					Extended response (80%)					Total marks
		No. of questions	Marks	Cognitive levels			No. of questions	Marks	Cognitive levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
Cells and organisms	15%	8	1	1	0	0	12	5	2	2	1	6
Classification	15%		1	0	1	0		5	2	2	1	6
Structure and properties of materials	33%		3	1	1	1		10	4	4	2	13
Forces and energy	15%		1	0	1	0		5	2	2	1	6
The Earth and its climate	22%		2	1	1	0		7	3	3	1	9
Total	100%		8	3	4	1		32	13	13	6	40

## End of Semester Two Exam Specification for Science (Grade 7 - Bilingual) (2023/2024)

Topic of the units	weighting %	Multiple choice (20%)				Extended response (80%)				Total marks		
		No. of questions	Marks	Cognitive levels			No. of questions	Marks	Cognitive levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)		Applying (40%)	Reasoning (20%)
Diet and growth	11%	8	1	1	0	0	12	3	1	1	1	4
Respiration	7%		1	0	1	0		2	1	1	0	3
Ecosystems	19%		1	1	0	0		6	3	2	1	7
Chemical changes and reactions	15%		1	0	0	1		5	2	2	1	6
Electricity and magnetism	33%		3	1	1	1		11	4	5	2	14
The Earth in space	15%		1	0	1	0		5	2	2	1	6
Total	100%		8	3	3	2		32	13	13	6	40



## End of Semester One Exam Specification for Science (Grade 8 - Bilingual) (2023/2024)

Topic of the units	weighting %	Multiple choice (20%)				Extended response (80%)				Total marks		
		No. of questions	Marks	Cognitive levels			No. of questions	Marks	Cognitive levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)		Applying (40%)	Reasoning (20%)
Gas exchange and respiration	16%	8	1	1	0	0	12	5	2	2	1	6
Diet and Growth	9%		1	1	0	0		3	2	1	0	4
The structure of atoms	9%		1	1	0	0		3	1	1	1	4
Forces and motion	21%		2	0	1	1		6	2	3	1	8
Light and sound	18%		1	0	1	0		6	2	3	1	7
The Earth and its resources	15%		1	1	0	0		5	2	2	1	6
The Earth in space	12%		1	0	1	0		4	2	1	1	5
<b>Total</b>	<b>100%</b>		<b>8</b>	<b>4</b>	<b>3</b>	<b>1</b>		<b>32</b>	<b>13</b>	<b>13</b>	<b>6</b>	<b>40</b>

## End of Semester Two Exam Specification for Science (Grade 8- Bilingual) (2023/2024)

Topic of the units	weighting %	Multiple choice (20%)					Extended response (80%)					Total marks
		No. of questions	Marks	Cognitive levels			No. of questions	Marks	cognitive levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
Genetics	11%	8	1	1	0	0	12	4	1	2	1	5
Photosynthesis	10%		1	0	1	0		3	1	1	1	4
Chemical reactions	28%		2	1	1	0		9	3	4	2	11
Energy	17%		1	0	1	1		5	2	2	1	6
Magnetism	10%		1	0	1	1		3	1	2	0	4
Cycles on Earth	10%		1	1	0	0		3	2	1	0	4
Inside a galaxy	14%		1	1	0	0		5	3	1	1	6
<b>Total</b>	<b>100%</b>		<b>8</b>	<b>4</b>	<b>4</b>	<b>2</b>		<b>32</b>	<b>13</b>	<b>13</b>	<b>6</b>	<b>40</b>

### End of Semester One Exam Specification for Biology (Grade 9- Bilingual) (2023/2024)

Topic of the Units	Weighting %	Multiple Choice (20%)					Extended Response (80%)					Total Mark
		No. of Questions	Marks	Cognitive Levels			No. of Questions	Marks	Cognitive Levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
Characteristics of living organisms and classification	21%	8	2	1	-	1	12	6	2	3	1	8
Organization of the organisms	12%		1	1	-	-		4	2	1	1	5
Movement in and out of cells.	12%		1	-	-	1		4	2	2	-	5
Biological molecules	12%		1	-	1	-		4	1	2	1	5
Enzymes	12%		1	-	1	-		4	1	2	1	5
Diseases and immunity	12%		1	1	-	-		4	2	1	1	5
Plant nutrition	19%		1	-	1	-		6	3	2	1	7
<b>Total</b>	<b>100%</b>			<b>8</b>	<b>3</b>	<b>3</b>		<b>2</b>		<b>32</b>	<b>13</b>	<b>13</b>

## End of Semester Two Exam Specification for Biology (Grade 9- Bilingual) (2023/2024)

Topic of the Units	Weighting %	Multiple Choice (20%)					Extended Response (80%)					Total Mark
		No. of Questions	Marks	Cognitive Levels			No. of Questions	Marks	Cognitive Levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
Human nutrition	19%	<b>8</b>	1	1	-	-	<b>12</b>	7	3	3	1	<b>8</b>
Transport in plants	19%		2	-	1	1		6	3	2	1	<b>8</b>
Transport in animals	19%		1	1	-	-		7	3	3	1	<b>8</b>
Gas exchange	21%		2	1	1			6	2	2	2	<b>8</b>
Respiration	22%		2	-	1	1		6	2	3	1	<b>8</b>
<b>Total</b>	<b>100%</b>		<b>8</b>	<b>3</b>	<b>3</b>	<b>2</b>		<b>32</b>	<b>13</b>	<b>13</b>	<b>6</b>	<b>40</b>

## End of Semester One Exam Specification for Chemistry (Grade 9 - Bilingual) (2023/2024)

Topic of the Units	Weighting %	Multiple Choice (20%)					Extended Response (80%)					Total Mark
		No. of Questions	Marks	Cognitive Levels			No. of Questions	Marks	Cognitive Levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
The particulate nature of matter.	17%	<b>8</b>	2	1	1	-	<b>12</b>	5	2	2	1	7
Experimental techniques	%24		2	-	1	1		8	3	3	2	10
The Periodic Table	%24		2	1	1	-		7	3	2	2	9
Atoms, elements and compounds	%35		2	1	-	1		12	5	6	1	14
<b>Total</b>	<b>100%</b>		<b>8</b>	<b>3</b>	<b>3</b>	<b>2</b>		<b>32</b>	<b>13</b>	<b>13</b>	<b>6</b>	<b>40</b>



## End of Semester Two Exam Specification for Chemistry (Grade 9 - Bilingual) (2023/2024)

Topic of the Units	Weighting %	Multiple Choice (20%)					Extended Response (80%)					Total Mark
		No. of Questions	Marks	Cognitive Levels			No. of Questions	Marks	Cognitive Levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
Chemical reactions	20%	<b>8</b>	2	1	1	-	<b>12</b>	6	3	2	1	8
Stoichiometry	30%		2	1	-	1		10	4	4	2	12
Acid, base and salts	30%		3	1	1	1		9	3	4	2	12
Identification of ions and gases	20%		1	-	1	-		7	3	3	1	8
<b>Total</b>	<b>100%</b>		<b>8</b>	<b>3</b>	<b>3</b>	<b>2</b>		<b>32</b>	<b>13</b>	<b>13</b>	<b>6</b>	<b>40</b>

## End of Semester One Exam Specification for Physics (Grade 9- Bilingual) (2023/2024)

Topic of the Units	Weighting %	Multiple Choice (20%)					Extended Response (80%)					Total Mark
		No. of Questions	Marks	Cognitive Levels			No. of Questions	Marks	Cognitive Levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
Measurements and motion	62%	8	5	2	2	1	12	20	8	8	4	25
Force	38%		3	1	1	1		12	5	5	2	15
<b>Total</b>	<b>100%</b>		<b>8</b>	<b>3</b>	<b>3</b>	<b>2</b>		<b>32</b>	<b>13</b>	<b>13</b>	<b>6</b>	<b>40</b>

## End Of Semester Two Exam Specification for Physics (Grade 9- Bilingual) (2023/2024)

Topic of the Units	Weighting %	Multiple Choice (20%)					Extended Response (80%)					Total Mark
		No. of Questions	Marks	Cognitive Levels			No. of Questions	Marks	Cognitive Levels			
				Knowing (40%)	Applying (40%)	Reasoning (20%)			Knowing (40%)	Applying (40%)	Reasoning (20%)	
Work and energy	14%	8	1	-	1	-	12	4	1	2	1	5
Thermal Physics	86%		7	3	3	1		28	11	11	6	35
<b>Total</b>	<b>100%</b>		<b>8</b>	<b>3</b>	<b>4</b>	<b>1</b>		<b>32</b>	<b>13</b>	<b>13</b>	<b>6</b>	<b>40</b>

Assessment Sheet for Science Grades (5-9)

Student's Name	Continuous assessment Tools									Total (60)	Final Exam (40)	Total (100)	
	Oral Dialogue			Practical Activity (10)	Short Tests			HomeWorks					
	(5)	(5)	Total (10)		1 <sup>st</sup> (15)	2 <sup>nd</sup> (15)	Total (30)	(5)	(5)				Total (10)

*Appendix(1)*

**Make-up Short Test Form**

School's name.....  
Science Subject.....  
Class: .....

Student's number:.....  
Teacher's name: .....

Date of the short test:.....  
Date of the make-up short test:.....

Reasons for make-up short:  
.....  
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.....

Principal's name  
Signature

Supervisor's name  
Signature