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## **Design and Technology**

## Grades 1-8

Term 1 Practical Summative Assessment Specifications

2019 / 2020 Academic Year

-It is prohibited to circulate this document before / during / after the assessment through e-mail, social media or any other means. -Anybody who violates this will be subject to legal proceedings. School Administrations and Exam Committees shall take this into account, monitor violations and take necessary measures

	Grade 1						
Marks	Time	Task Description	Domain/Skills				
20 marks	90 mins	<ul> <li>Teachers should prepare required materials during week 9.</li> <li>UNIT 5 STREAM Project in the Activity Book:</li> <li>Students must build a basic car that moves forward when pushed.</li> <li>Students should consider the shape of the car, its' weight, the shape of the tyres etc. to make sure the car travels as far as possible.</li> <li>Students may use a balloon, rubber band or any other suitable method to propel the car forward.</li> </ul>	<ul> <li>This task will ask students to demonstrate:</li> <li>An understanding of the project requirements</li> <li>Awareness of material properties</li> <li>Awareness of shapes</li> <li>Their ability to create a model</li> <li>An understanding of how to measure distance</li> <li>An understanding of how to test a model</li> <li>Knowledge of how to improve a model.</li> </ul>				

	Grade 2						
Marks	Time	Task Description	Domain/Skills				
20 marks	90 mins	<ul> <li>Teachers should prepare required materials during week 9. UNIT 5 STREAM Project in the Activity Book:</li> <li>Students must build a basic car that moves forward when pushed.</li> <li>Students should consider the shape of the car, its' weight, the shape of the tyres etc. to make sure the car travels as far as possible.</li> <li>Students may use a balloon, rubber band or any other suitable method to propel the car forward.</li> </ul>	<ul> <li>This task will ask students to demonstrate:</li> <li>An understanding of the project requirements.</li> <li>Awareness of material properties.</li> <li>Awareness of shapes.</li> <li>Their ability to create a model.</li> <li>An understanding of how to measure distance.</li> <li>An understanding of how to test a model.</li> <li>Knowledge of how to improve a model.</li> </ul>				

		Grade 3	
Marks	Time	Task Description	Domain/Skills
50 marks	90 mins	<ul> <li>Task based on Activity 5 in the Activity Book</li> <li>Theoretical &amp; Planning (20 marks):</li> <li>Students should choose/specify a functional item to design.</li> <li>Students will plan the features of their design.</li> <li>Students will answer questions about the 3D printing process.</li> <li>Students will sketch 3 different ideas.</li> </ul> Practical & Evaluation (30 marks): <ul> <li>Students will create their design using 3D modelling software.</li> <li>Students will evaluate their design.</li> </ul>	<ul> <li>This task will ask students to demonstrate:</li> <li>Awareness of the design process.</li> <li>Knowledge of different product features.</li> <li>Awareness of 3D printing and size restrictions.</li> <li>Knowledge of 3D modelling software.</li> <li>Awareness of how to evaluate a design.</li> </ul>

	Grade 4					
Marks	Time	Unit	Task Description	Domain/Skills		
50 marks	90 mins		<ul> <li>Practical (30 marks):</li> <li>Students will use block-based programming to create an animation to include at least 2 objects and a backdrop.</li> <li>Theoretical (20 marks):</li> <li>Students will answer 5 fill in the blank and 5 matching about variables, conditional statements, animation, message and sensing blocks.</li> <li>Students will read a given code and answer 5 true/false questions related to it.</li> </ul>	<ul> <li>This task will ask students to demonstrate:</li> <li>Ability to use and understand 'Loops.'</li> <li>Ability to use and understand 'sensing blocks'.</li> <li>Ability to use and understand sounds.</li> <li>Ability to use and understand 'motion blocks'.</li> <li>Ability to use and understand 'message blocks'.</li> <li>Ability to use and understand 'conditional statements.'</li> <li>Ability to understand 'variables'.</li> </ul>		

	Grade 5				
Marks	Time	Unit	Task Description	Domain/Skills	
50 marks	90 mins	3 & 4	<ul> <li>Practical (30 marks): Students will design and make a 3D game with a scoring system.</li> <li>Theoretical (20 marks): Students will answer 5 questions identifying characters and actions. Students have to understand and identify programming commands.</li> </ul>	<ul> <li>This task will ask students to demonstrate:</li> <li>How to create a new world with a terrain.</li> <li>Modify and enhance the terrain to make it interesting.</li> <li>Program a character to move, jump, bump and inspect objects in this terrain.</li> <li>Allocate points for completing certain actions.</li> <li>The game should display a message when a certain number of points are scored.</li> </ul>	

	Grade 6					
Marks	Time	Unit	Task Description	Domain/Skills		
50 marks	90 mins	4	<ul> <li>Practical (30 marks):</li> <li>Students will create a block-based program to display numbers and letters on the LED grid.</li> <li>Students will change the colours of the NeoPixels lights.</li> <li>Add suitable comments to the program</li> <li>Theoretical (20 marks):</li> <li>Students will complete a flowchart for the program</li> <li>Students will select and write the answers to the question about the block-based program they have used .</li> </ul>	<ul> <li>This task will ask students to program the microcontroller to:</li> <li>Run loops.</li> <li>Counting.</li> <li>Change colours of NeoPixels lights.</li> <li>Apply flowchart skills.</li> </ul>		

	Grade 7					
Marks	Time	Unit	Task Description	Domain/Skills		
50 marks	90 mins	3 & 4	<ul> <li>Practical (30 marks): Students will complete 2 programming tasks incorporating 'if' and 'for' commands. Students should be able to output a range of numbers.</li> <li>Theoretical (20 marks):</li> <li>Students will complete a flowchart for the program.</li> <li>Students will identify errors in given code.</li> </ul>	<ul> <li>This task will ask students to demonstrate:</li> <li>Use of 'if' and 'for'.</li> <li>Output a range of numbers.</li> <li>Flowchart skills.</li> <li>Identifying errors in code.</li> </ul>		

	Grade 8 & Grade 8 ASP				
Marks	Time	Units	Task Description	Domain/Skills	
50 marks	135 mins	Unit 1 (pages 34-53 only) & Unit 2	<ul> <li>Practical – 90 mins (30 marks): Students will design a functional product. They will draw isometric and orthographic views. Then, they will use a 3D modelling tool to create their design.</li> <li>Theoretical – 45 mins (20 marks):</li> <li>Students will answer 10 multiple choice questions (MCQs) about a technical drawing.</li> <li>Students will evaluate a design based on SWOT analysis.</li> </ul>	<ul> <li>This task will ask students to demonstrate:</li> <li>Ability to sketch isometric view.</li> <li>Ability to Sketch orthographic projections.</li> <li>Use 3D modelling tool to create design.</li> <li>Entrepreneurship.</li> <li>Ability to extract information and answer question about a technical drawing.</li> <li>Ability to evaluate a design based on SWOT analysis.</li> </ul>	