Name:_____ Date:_____

Sciences Assessment Task Sheet

SEMESTER: **1 – 2nd Quarter**

TOPIC: **Science Fair**

TASK REQUIREMENTS: **Students will design and perform a laboratory experiment or research for the Science Fair.**

LENGTH: **6 weeks**

DUE DATE: **October 23rd, 2008 – December 4th, 2008**

Criterion D	Scientific Inquiry	Maximum 6	
Criterion E	Processing Data	Maximum 6	
Criterion F	Attitudes in Science	Maximum 6	

Name:_____ Date:_____

Sciences Assessment Rubric

Student Name:		**Date:**		
Criterion & Benchmarks	**Descriptors**	**Task Indicators**	**Student**	**Teacher**
Scientific Inquiry (Criterion D) (Max 6) Students are expected to design and carry out scientific investigations independently. Students should be able to (i) state a problem that can be tested by an investigation; (ii) formulate a suitable hypothesis; (iii) identify and manipulate variables; (iv) plan an appropriate investigation including the method and materials; (v) evaluate the method. Assessment tasks for scientific inquiry should provide students with the opportunity to design, plan and carry out scientific investigations independently. Suitable assessment tasks to assess this criterion include laboratory experiments and field studies.	0: The student does not reach a standard described by any of the descriptors given below.			
	1-2: The student **attempts to define** the purpose of the investigation and makes references to variables but these are **incomplete** or not fully developed. The method suggested is **partially complete**. The **evaluation** of the method **is either absent or incomplete**.	☐ The starting question is incomplete (purpose) ☐ The hypothesis is incomplete ☐ Partial plan to validate or confirm the hypothesis ☐ The variables are partially identified (IV, DV, and CV) but not controlled ☐ The materials are partially listed ☐ The method is partially complete and/or not listed step-by-step		
	3-4: The student **defines** the purpose of the investigation and provides an **explanation/prediction** but this is not fully developed. The student acknowledges **some of the variables** involved and describes how to manipulate them. The method suggested is **complete** and includes appropriate materials/equipment. The **evaluation** of the method **is partially developed**.	☐ The starting question is complete (purpose) but this is not fully developed ☐ The hypothesis present but not completely testable ☐ Sufficient plan to validate or confirm the hypothesis ☐ The variables are identified (IV, DV, and CV) and some variables are controlled ☐ Some of the materials are listed ☐ The method is complete and listed step-by-step		
	5-6: The student **defines** the purpose of the investigation, **formulates a testable hypothesis** and **explains** the hypothesis using scientific reasoning. The student identifies the relevant variables and **explains how to manipulate** them. The student suggests improvements to the method and makes suggestions for further inquiry when relevant.	☐ The starting question is complete (purpose) ☐ Well-written, testable hypothesis ☐ Exemplary plan to validate or confirm the hypothesis ☐ All the variables are carefully identified and controlled (IV, DV, and CV) ☐ All the materials are listed ☐ The method is quantitatively and/or listed step-by-step		

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Processing Data (Criterion E) (Max 6) Processing data refers to enabling students to organize and process data. Students should be able to organize and transform data by numerical calculations into diagrammatic form (tables, graphs and charts) and draw and explain appropriate conclusions. Suitable assessment tasks to assess this criterion include scientific investigations carried out by students, or by others, as well as laboratory reports and studies that provide students with raw data for further processing and analysis.	0: The student does not reach a standard described by any of the descriptors given below.			
	1-2: The student **organizes** and presents data using **simple numerical or diagrammatic forms** and draws an **obvious conclusion**.	☐ The table is simple and incomplete ☐ The conclusion is obvious		
	3-4: The student organizes and **transforms** data into **numerical and diagrammatic forms** and presents it using **appropriate communication modes**. The student draws a **conclusion consistent with the data**.	☐ The table is labeled and complete ☐ The conclusion is consistent with the data		
	5-6: The student organizes and transforms data into numerical and diagrammatic forms and presents it logically and clearly, using appropriate communication modes. The student **explains trends, patterns or relationships** in the data, comments on the reliability of the data, draws **a clear conclusion** based on the correct interpretation of the data, and explains it using **scientific reasoning**.	☐ The table is organized clearly, labeled and is complete ☐ The conclusion is consistent with the data and uses scientific reasoning		

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Attitudes in Science (Criterion F) (Max 6) This criterion refers to encouraging students' attitudes of safety, respect and collaboration. Students are expected to: • carry out scientific investigations using materials and techniques skillfully and safely and showing respect for the living and non-living environment • work effectively as a member of a team, collaborating, acknowledging and respecting the views of others as well as ensuring a safe working environment. Evidence of performance of this criterion should be collected from the observation of students when working in science, individually and in groups. This criterion should be internally assessed but it is not externally moderated.	0: The student does not reach a standard described by any of the descriptors given below.			
	1-2: The student requires **guidance** and **supervision** when using laboratory equipment. The student can work safely and cooperate with others but may **need reminders**.	☐ The student needs supervision and guidance. ☐ Uses incorrect measurements of materials to accomplish lab work ☐ Uses the equipment inappropriately ☐ Does not cleans lab area		
	3-4: The student uses most equipment competently but might require occasional guidance; on most occasions **pays attention to safety** and works responsibly with the living and non-living environment. The student **generally cooperates** well with other students.	☐ The student needs some supervision and guidance. ☐ Uses proper measurements of materials to accomplish lab work most of the time ☐ Uses the equipment appropriately most of the time ☐ Cleans most of the lab area		
	5-6: The student **works largely independently**; uses equipment with precision and skill; **pays close attention to safety** and deals responsibly with the living and non-living environment. The student consistently **works effectively as part of a team**, collaborating with others and respecting their views.	☐ The student needs little supervision and guidance. ☐ Uses proper measurements of materials to accomplish lab work ☐ Uses the equipment appropriately ☐ Cleans lab area		

Comments

Name:_____ Date:_____

Teacher:

Student: