GCO: Students will use scientific inquiry and technological design skills to solve practical problems, communicate scientific ideas and results, and make informed decisions while working collaboratively.

SCO: Students will ask questions about relationships between and among observable variables to plan investigations (scientific inquiry and technological problem-solving) to address those questions.

4 - Excelling	3 - Meeting	2 - Approaching	1 - Working Below
The science learner independently	The science learner generally asks	The science learner sometimes (or	The science learner rarely asks
and consistently asks questions that	questions that arise from careful	with support) asks questions that	questions that arise from careful lead
arise from careful observation of	observation of phenomena, models	arise from careful observation of	to investigations.
phenomena, models or unexpected	or unexpected results.	phenomena, models or unexpected	
results.		results.	
The science learner independently	The science learner generally	The science learner sometimes (or	The science learner rarely
and consistently determines	determines variables (e.g.	with support) determines variables	determines variables to formulate a
variables (e.g. dependent,	dependent, independent and	(e.g. dependent, independent and	hypothesis or states a problem
independent and control) to	control) to formulate a hypothesis or	control) to formulate a hypothesis or	statement for a practical problem.
formulate a hypothesis or states the	states the problem statement for a	states the problem statement for a	
problem statement for a practical	practical problem.	practical problem.	
problem.			
The science learner independently	The science learner generally selects	The science learner sometimes (or	The science learner rarely selects
and consistently selects appropriate	appropriate tools, materials and	with support) selects appropriate	appropriate equipment to carry out a
tools, materials and equipment to	equipment to carry out a fair test or	tools, materials and equipment to	fair test or solve a technological
carry out a fair test or test a	test a prototype.	carry out a fair test or test a	problem.
prototype.		prototype.	
The science learner independently	The science learner generally	The science learner comptimes (or	The science learner rarely develops
and consistently develops (with	develops (with guidance)	with support) develops (with	scientific procedures or design plan
guidance) investigation procedures	investigation procedures for a fair	guidance) investigation procedures	for a technological solution
for a fair test or designs a solution to	test or designs a solution to a	for a fair test or designs a solution to	
a practical problem.	practical problem.	a practical problem.	

GCO: Students will use scientific inquiry and technological design skills to solve practical problems, communicate scientific ideas and results, and make informed decisions while working collaboratively.

4 - Excelling	3 - Meeting	2 - Approaching	1 - Working Below
The science learner independently	The science learner generally	The science learner sometimes (or	The science learner rarely performs a
and consistently performs a	performs a systematic experimental	with support) performs a systematic	logical procedure to test a hypothesis
systematic experimental procedure	procedure to test a hypothesis or	experimental procedure to test a	or build a prototype.
to test a hypothesis or executes plan	executes plan to build a prototype.	hypothesis or executes plan to build	
to build a prototype.		a prototype.	
The science learner independently	The science learner generally applies	The science learner sometimes (or	The science learner rarely applies
and consistently applies scientific	scientific ideas or principles to test a	with support) applies scientific ideas	scientific ideas or principles to the
ideas or principles to test a design	design (e.g., object, tool, process,	or principles to test a design (e.g.,	design process.
(e.g., object, tool, process, system).	system).	object, tool, process, system).	
The science learner independently	The science learner generally uses	The science learner sometimes (or	The science learner rarely uses tools
and consistently uses tools and	(proper bandling, transport, etc.) in	with support) uses tools and	investigation
bandling transport atc.) in an	(proper handling, transport, etc.) in	bandling transport atc.) in an	investigation.
investigation		investigation	
The science learner independently	The science learner generally records	The science learner sometimes (or	The science learner rarely records
and consistently records qualitative	qualitative and quantitative data	with support) records qualitative and	appropriate data.
and quantitative data using tools as	using tools as appropriate.	quantitative data using tools as	
appropriate.		appropriate.	
The science learner independently	The science learner generally	The science learner sometimes (or	The science learner rarely develops a
and consistently develops a model to	develops a model to show the	with support) develops a model to	model to demonstrating relationship.
show the relationships amongst	relationships amongst variables.	show the relationships amongst	
variables.		variables.	

# SCO: Students will collect and represent data using tools and methods appropriate for the task.

GCO: Students will use scientific inquiry and technological design skills to solve practical problems, communicate scientific ideas and results, and make informed decisions while working collaboratively.

SCO: Students will analyse and interpret qualitative and quantitative data to construct explanations.

4 - Excelling	3 - Meeting	2 - Approaching	1 - Working Below
The science learner independently and consistently evaluates the	The science learner generally evaluates the accuracy of various	The science learner sometimes (or with support) evaluates the accuracy	The science learner rarely
accuracy of various methods for	methods for collecting data.	of various methods for collecting	evaluates the accuracy
collecting data.		data.	methods for collecting data.
The science learner independently	The science learner generally	The science learner sometimes (or	The science learner rarely constructs
and consistently constructs graphical displays (e.g., drawings, charts,	drawings, charts, maps, tables, and	displays (e.g., drawings, charts,	graphical representations.
maps, tables, and graphs).	graphs).	maps, tables, and graphs).	
The science learner independently	The science learner generally applies	The science learner sometimes (or	The science learner rarely applies
probability and statistics (e.g., mean,	(e.g., mean, median, mode, and	probability and statistics (e.g., mean,	statistical thinking.
median, mode, and variability.	variability.	median, mode, and variability.	
The science learner independently	The science learner generally	The science learner sometimes (or	The science learner rarely Identifies
and consistently identifies possible	identifies possible sources of error.	with support) identifies possible	sources of error.
sources of error.		sources of error.	
The science learner independently	The science learner generally draws a	The science learner sometimes (or	The science learner rarely draws a
based on evidence gathered from	gathered from scientific experiment	based on evidence gathered from	collected.
scientific experiment or testing of the	or testing of the designed solution.	scientific experiment or testing of the	
designed solution.		designed solution.	

GCO: Students will use scientific inquiry and technological design skills to solve practical problems, communicate scientific ideas and results, and make informed decisions while working collaboratively.

SCO: Students will work collaboratively on investigations to communicate conclusions supported by data.

4 - Excelling	3 - Meeting	2 - Approaching	1 - Working Below
The science learner independently and	The science learner generally	The science learner sometimes	The science learner rarely works
consistently works cooperatively to	works cooperatively to examine own	(or with support) works	cooperatively to examine own
examine own knowledge or knowledge of	knowledge or knowledge of peers.	cooperatively to examine own	knowledge.
peers.		knowledge or knowledge of peers.	
The science learner independently and	The science learner generally	The science learner sometimes	The science learner rarely chooses
consistently chooses a format of	chooses a format of communication	(or with support) chooses a format	appropriate communication method.
communication appropriate to purpose	appropriate to purpose (e.g., reports,	of communication appropriate to	
(e.g., reports, data tables, scientific models, etc.).	data tables, scientific models, etc.).	purpose (e.g., reports, data tables, scientific models, etc.).	
The science learner independently and	The science learner generally	The science learner sometimes	The science learner rarely discusses
consistently discusses procedures results	discusses procedures results and	(or with support) discusses	investigations using appropriate
and conclusions of investigations using	conclusions of investigations using	nrocedures results and conclusions	scientific terminology
appropriate scientific terminology.	appropriate scientific terminology.	of investigations using appropriate	selentine terminology.
		scientific terminology.	
The science learner independently and	The science learner generally	The science learner sometimes	The science learner rarely discusses
consistently discusses the design process	discusses the design process leading	(or with support) discusses the	the designed solution using
leading to the solution using appropriate	to the solution using appropriate	design process leading to the	technological terminology.
technological terminology.	technological terminology.	solution using appropriate	
		technological terminology.	
The science learner independently and	The science learner generally	The science learner sometimes	The science learner rarely
consistently communicates answers to	communicates answers to questions	(or with support) communicates	communicates understandings based
questions or solutions to problems based on	or solutions to problems based on	answers to questions or solutions	on evidence.
evidence.	evidence.	to problems based on evidence.	

### Learning and Living Sustainably

GCO: Students will demonstrate an understanding of the nature of science and technology, of the relationships between science and technology, and of the social and environmental contexts of science and technology.

SCO: Students will consider factors that support responsible application of scientific and technological knowledge and demonstrate an understanding of sustainable practices.

4 - Excelling	3 - Meeting	2 - Approaching	1 - Working Below
The science learner independently and	The science learner generally	The science learner sometimes	The science learner rarely follows
consistently follows guidelines for safe use	follows guidelines for safe use of	(or with support) follows	science safety guidelines.
of equipment to conduct a scientific	equipment to conduct a scientific	guidelines for safe use of	
experiment.	experiment.	equipment to conduct a scientific	
		experiment.	
The science learner independently and	The science learner generally	The science learner sometimes	The science learner rarely follows
consistently follows guidelines for safe use	follows guidelines for safe use of	(or with support) follows	technology safety guidelines.
of tools to build a prototype of a solution.	tools to build a prototype of a	guidelines for safe use of tools to	
	solution.	build a prototype of a solution.	
The science learner independently and	The science learner generally uses	The science learner sometimes	The science learner rarely uses
consistently uses science and	science and technological	(or with support) uses science	science and technological knowledge
technological knowledge to consider	knowledge to consider issues.	and technological knowledge to	to consider issues.
issues.		consider issues.	
The science learner independently and	The science learner generally	The science learner sometimes	The science learner rarely makes
consistently reflects on various aspects of	reflects on various aspects of an	(or with support) reflects on	decisions about action to take.
an issue to make decisions about possible	issue to make decisions about	various aspects of an issue to	
actions.	possible actions.	make decisions about possible	
		actions.	

### **Evidence of Learning: Suggested Sources**

#### Observations:

- Observe students during "warm up" activities
- Observe students during experiments
- Observe students during group work
- Observe student presentations and demonstrations
- "Gallery" walks

# Conversations (oral/written):

- Conferences
- Interviews
- Whole class and group discussions
- Science journal entry
- Exit slips (written responses)
- Self- and peer assessment and reflection

# Products:

- Quizzes (oral/written)
- Projects
- Tests
- Work samples
- Exit slips or other responses to questions
- Science journal entry
- Photos of student's work
- Group problem solving records
- Portfolios