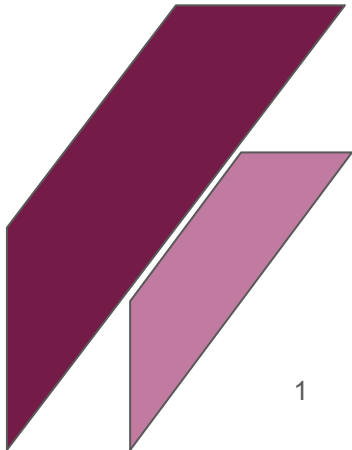
Science

Kindergarten to Grade 3
Skills and Procedures
Progressions



Alberta Regional Professional Development Consortia
Adult learning for students' sake

Learner Outcome Verbs				
	Grade			
	K	1	2	3
Apply Creativity				
Analyze				
Describe				
Examine				
Explain				
Explore				
Follow Instructions				
Interpret Instructions				
Investigate				
Relate				

Learner Outcome Verbs

Verbs are the skills and procedures that students do or perform.

Learner outcome verbs are those verbs that are identified in the learner outcome

Skills & Procedures Verbs

Skills & Process Verbs	Grade			
	K	1	2	3
Ask Questions				
Classify (Sort)				
Compare & Contrast				
Conclude				
Create				
Demonstrate Safety				
Describe				
Design				
Discuss				
Examine				
Explain				
Explore				
Investigate				
Observe				
Predict				
Record Data				
Relate				
Represent				

Skills and procedures verbs are those identified in the Skills & Procedures column of the curriculum guide.

This list represents the ***more frequently used verbs.***

- A darker shade signifies a verb used directly in a Skills and Procedures statement.
- A lighter shade indicates that verb is not stated as a separate skill, but is included in a procedure (eg. “Ask Questions” is a step in the “Investigation” procedure at every grade).

Instruction and Assessment

These skills and procedures can be taught, practiced, and assessed.

Doing so will help students become more proficient in their use and better able to demonstrate their knowledge and understanding when using these skills.

Computer Science Skills

The Computer Science statements identified in the table that follows are Skills & Procedures statements that may be easily integrated into other organizing ideas or subjects.

This selected statements **are not** all of the skills and procedure statements in the organizing idea.

Computer Science			
Kindergarten	**Grade 1**	**Grade 2**	**Grade 3**
Recognize when actions do not correspond to instructions.	Determine if instructions with two or three steps given in different orders still produce the desired outcome.	Predict the outcome of instructions that have three to four steps.	
		Debug any errors in a set of instructions to achieve a desired outcome.	
		Refine instructions to more efficiently achieve a desired outcome.	
		Test instructions with three to four steps to verify that a desired outcome is achieved.	
Match an action to the corresponding instruction.			
Engage in activities that involve following instructions in various contexts.			
Engage in activities that involve following instructions presented in various ways.	Follow instructions during investigations.		
Follow a sequence of two steps related to a learning experience.	Follow instructions with two or three steps given in different forms.		
Communicate a sequence of two steps for a given purpose.	Sequence two or three instruction steps to achieve a desired outcome.	Create three-step to four-step instructions that achieve a desired outcome.	Create a set of instructions.
	Exchange ideas for creating three-step instructions that achieve a desired outcome.	Exchange ideas to design clear three- to four-step instructions, including repetition, to achieve a desired outcome.	Collaborate to write two different sets of instructions that achieve the same outcome.
		Work individually or in groups to create instructions using precise words, pictures, or diagrams.	
			Create something new by combining, changing, or reapplying existing ideas.

Enlarged View on Next Page

These specific Computer Science skills and procedures can be taught, practiced, and assessed in various courses and contexts.

Computer Science

Kindergarten	Grade 1	Grade 2	Grade 3
Recognize when actions do not correspond to instructions.	Determine if instructions with two or three steps given in different orders still produce the desired outcome.	Predict the outcome of instructions that have three to four steps.	
		Debug any errors in a set of instructions to achieve a desired outcome.	
		Refine instructions to more efficiently achieve a desired outcome.	
		Test instructions with three to four steps to verify that a desired outcome is achieved.	
Match an action to the corresponding instruction.			
Engage in activities that involve following instructions in various contexts.			Identify computational thinking used to solve problems or achieve desired outcomes.
Engage in activities that involve following instructions presented in various ways.	Follow instructions during investigations.		
Follow a sequence of two steps related to a learning experience.	Follow instructions with two or three steps given in different forms.		
Communicate a sequence of two steps for a given purpose.	Sequence two or three instruction steps to achieve a desired outcome.	Create three-step to four-step instructions that achieve a desired outcome.	Create a set of instructions.
	Exchange ideas for creating three-step instructions that achieve a desired outcome.	Exchange ideas to design clear three- to four-step instructions, including repetition, to achieve a desired outcome.	Collaborate to write two different sets of instructions that achieve the same outcome.
		Work individually or in groups to create instructions using precise words, pictures, or diagrams.	
			Create something new by combining, changing, or reapplying existing ideas.

NOTE: The statements are colour-coded to reflect similar types of skills or thinking involved.

Scientific Methods

The Scientific Methods statements identified in the table that follows are Skills and Procedures statements that may be easily integrated into other organizing ideas or subjects.

These selected statements **<u>are not</u>** all of the skills and procedure statements in the organizing idea.

Scientific Methods				
Investigation Process Grade 1	**Grade 1**	**Investigation Process Grade 2 & UP**	**Grade 2**	**Grade 3**
Steps followed during an investigation include • *asking questions* • *making predictions* • *gathering data* • *forming conclusions*	Ask a question sparked by curiosity.	*Procedures scientists use to guide investigations include* • *asking questions* • *making predictions* • *planning the investigation* • *observing and recording data* • *analyzing data reaching conclusions* • *discussing observations and conclusions*	Explore various purposes for conducting an investigation.	Develop new questions for further investigations.
			Develop questions for the purpose of an investigation.	
	Predict the answer to a question.			
	Make observations using various senses.		Determine if observations relate to the purpose of the investigation.	Collect data using techniques to improve the accuracy of data.
	Record observations as data.		Collaborate to combine recorded data into a single list or chart.	Compare the trustworthiness of sources of data
	Reflect on recorded data (analyze) to make conclusions.			Analyze data collected during investigations.
			Compare observations and data with others.	Reflect on how conducting an investigation contributes to building knowledge.
				Compare the trustworthiness of sources of data
	Demonstrate safety and respect during investigations.			

Enlarged View on Next Page

These specific Scientific Methods skills and procedures can be taught, practiced, and assessed in various courses and contexts.

Scientific Methods				
Investigation Process Grade 1	**Grade 1**	**Investigation Process Grade 2 & UP**	**Grade 2**	**Grade 3**
Steps followed during an investigation include • *asking questions* • *making predictions* • *gathering data* • *forming conclusions*	Ask a question sparked by curiosity.	*Procedures scientists use to guide investigations include* • *asking questions* • *making predictions* • *planning the investigation* • *observing and recording data* • *analyzing data reaching conclusions* • *discussing observations and conclusions*	Explore various purposes for conducting an investigation.	Develop new questions for further investigations.
			Develop questions for the purpose of an investigation.	
	Predict the answer to a question.			
	Make observations using various senses.		Determine if observations relate to the purpose of the investigation.	Collect data using techniques to improve the accuracy of data.
	Record observations as data.		Collaborate to combine recorded data into a single list or chart.	Compare the trustworthiness of sources of data
	Reflect on recorded data (analyze) to make conclusions.			Analyze data collected during investigations.
			Compare observations and data with others.	Reflect on how conducting an investigation contributes to building knowledge.
				Compare the trustworthiness of sources of data
	Demonstrate safety and respect during investigations.			

NOTE: The statements are colour-coded to reflect matches to steps in the investigation process.