

Grade 6: Science

Unit 2 - The Scientific Method

Start: October 2022

Duration: 8 weeks

LEARNING EXPERIENCES:
 In this unit, students will be able to articulate a problem/aim for the investigation, make an informed prediction known as the hypothesis using the "If... then... because" format. They will be able to identify the different types of variables. They will recognise the variables and use them to articulate an aim. They will gain knowledge about the selection of the independent variable and how to manipulate it. They will learn to choose a dependent variable and how to measure it. They will also be able to identify and acknowledge the importance of controlled variables in making a fair test. Finally, they will be able to collect and organizes data in a table; be able to present data in a graph, which will be used to conclude and evaluate the investigation.

KEY CONCEPT:	Logic
RELATED CONCEPTS:	Consequences, Evidence

STATEMENT OF INQUIRY	A scientific investigation requires a logical and organised method of predicting outcomes, collecting evidence , and explaining the consequences of natural phenomena.
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INQUIRY QUESTIONS:	
Factual:	What are the differences between qualitative and quantitative observations? How do we combine the three types of variables to propose a testable hypothesis? What are Independent, Dependent and Controlled variables?
Conceptual:	Why must each investigation test the consequences of only one variable changing? How do we use a list the procedural steps to design a logical, complete and safe method?
Debatable:	Can we have valid and reliable results from a test which is not fair?

OBJECTIVES AND ASSESSMENT CRITERIA:	
Criterion B: Inquiring and Designing	Students will: <ol style="list-style-type: none"> i. outline a problem or question to be tested by a scientific investigation ii. outline a testable prediction using scientific reasoning. iii. outline how to manipulate the variables, and outline how sufficient, relevant data will be collected. design a logical, complete and safe method in which he or she selects appropriate materials and equipment.
Criterion C: Processing and Evaluating	Students will: <ol style="list-style-type: none"> i. correctly collect, organize, transform and present data in numerical and/ or visual forms. ii. accurately interpret data and outline results using correct scientific reasoning. iii. discuss the validity of a prediction based on the outcome of a scientific investigation. iv. discuss the validity of the method based on the outcome of a scientific investigation. v. describe improvements or extensions to the method that would benefit the scientific investigation.

ATLs	Communication skills, Critical thinking skills & Creative thinking skills
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RESOURCES:

MS Teams / Gizmos / Laptops / Experiments done as demonstration in class. All notes written by the students in the notebooks. Resources shared in TEAMS and Managebac.

SUMMATIVE ASSESSMENT:

Criteria B & C: Students will investigate the topic given and write a lab report on it.