

Science Toolkit: Grade 8 Objective 1.B.1.a

Standard 1.0 Skills and Processes

Topic B. Applying Evidence and Reasoning

Indicator 1. Review data from a simple experiment, summarize the data, and construct a logical argument about the cause-and-effect relationships in the experiment.

Objective a. Verify the idea that there is no fixed set of steps all scientists follow, scientific investigations usually involve the collection of relevant evidence, the use of logical reasoning, and the application of imagination in devising hypotheses and explanations to make sense of the collected evidence.

Table of Contents

Standard 1 Tools

- Introduction

Introduction

Science Grade 8 Standard 1

At this level, students need to become more systematic and sophisticated in conducting their investigations, some of which may last for weeks or more. This means closing in on an understanding of what constitutes a good investigation and explicitly discussing how explanation relates to experimental design. Even though the main purpose of student investigations is to help students learn how science works, it is important to back up such experience with selected readings. Scientific explanation of the material world is built on theories and this is a good time to introduce a) an understanding of how theories are constructed and find both historical and modern examples of the theory development process; and b) an appreciation for the explanatory and predictive power of theories. By the end of Grade 8, children will have had multiple experiences applying and practicing all of the listed science skills and processes across the concept areas.