

IDEAs in Action Curriculum

Focus Capacity: Natural Scientific Investigation

Students learn how to make and interpret scientific descriptions and explanations of the natural world, practice the skills of scientific inquiry, and evaluate scientific evidence within the contexts of both scientific communities and society.

Questions for Students

1. What rules govern the natural world and how are they discovered, tested, and validated?
2. What is distinctive about the approach to understanding employed in the natural sciences?
3. What challenges are encountered in making measurements of the natural world?
4. What are the limits of investigation in the natural sciences?

Learning Objectives

(modifications in bold)

1. Demonstrate the ability to use scientific knowledge, logic, and imagination to construct and justify scientific claims about **naturally occurring** phenomena, including validation through rigorous empirical testing.
2. Analyze and apply processes of **(removed: natural)** scientific inquiry as dictated by the phenomena and questions at hand. These include generating and testing hypotheses or theories **pertaining to the natural world**; using logic and creativity to design investigations to test these hypotheses; collecting and interpreting data **about the natural world**; making inferences that respect measurement error; building and justifying arguments and explanations; communicating and defending conclusions; revising arguments and conclusions based on new evidence and/or feedback from peers; and synthesizing new knowledge into broader scientific understanding.
3. Evaluate science-related claims and information from popular and/or peer-reviewed sources by examining the relationship between the evidence, arguments, and conclusions presented and by assessing consistency with existing knowledge from valid and reliable scientific sources.
4. Identify, assess, and make informed decisions about ethical issues at the intersections of the **natural** sciences and society.

The modifications to the learning objectives were approved by the General Education Oversight Committee on 3-26-2021.