

Grades 6, 7, 8

Adopted 2013

Understandings about the Nature of Science

1. Scientific Investigations Use a Variety of Methods AH.1

1. Science investigations use a variety of methods and tools to make measurements and observations. 6-8.AH.1.1
2. Science investigations are guided by a set of values to ensure accuracy of measurements, observations, and objectivity of findings. 6-8.AH.1.2
3. Science depends on evaluating proposed explanations. 6-8.AH.1.3
4. Scientific values function as criteria in distinguishing between science and non-science. 6-8.AH.1.4

2. Scientific Knowledge is Based on Empirical Evidence AH.2

1. Science knowledge is based upon logical and conceptual connections between evidence and explanations. 6-8.AH.2.1
2. Science disciplines share common rules of obtaining and evaluating empirical evidence. 6-8.AH.2.2

3. Scientific Knowledge is Open to Revision in Light of New Evidence AH.3

1. Scientific explanations are subject to revision and improvement in light of new evidence. 6-8.AH.3.1
2. The certainty and durability of science findings varies. 6-8.AH.3.2
3. Science findings are frequently revised and/or reinterpreted based on new evidence. 6-8.AH.3.3

4. Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena AH.4

1. Theories are explanations for observable phenomena. 6-8.AH.4.1
2. Science theories are based on a body of evidence developed over time. 6-8.AH.4.2
3. Laws are regularities or mathematical descriptions of natural phenomena. 6-8.AH.4.3
4. A hypothesis is used by scientists as an idea that may contribute important new knowledge for the evaluation of a scientific theory. 6-8.AH.4.4
5. The term "theory" as used in science is very different from the common use outside of science. 6-8.AH.4.5

5. Science is a Way of Knowing AH.5

1. Science is both a body of knowledge and the processes and practices used to add to that body of knowledge. 6-8.AH.5.1
2. Science knowledge is cumulative and many people, from many generations and nations, have contributed to science knowledge. 6-8.AH.5.2
3. Science is a way of knowing used by many people, not just scientists. 6-8.AH.5.3

6. Scientific Knowledge Assumes an Order and Consistency in Natural Systems AH.6

1. Science assumes that objects and events in natural systems occur in consistent patterns that are understandable through measurement and observation. 6-8.AH.6.1
2. Science carefully considers and evaluates anomalies in data and evidence. 6-8.AH.6.2

7. Science is a Human Endeavor AH.7

1. Men and women from different social, cultural, and ethnic backgrounds work as scientists and engineers. 6-8.AH.7.1
2. Scientists and engineers rely on human qualities such as persistence, precision, reasoning, logic, imagination and creativity. 6-8.AH.7.2
3. Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism and openness to new ideas. 6-8.AH.7.3
4. Advances in technology influence the progress of science and science has influenced advances in technology. 6-8.AH.7.4

8. Science Addresses Questions About the Natural and Material World. AH.8

1. Scientific knowledge is constrained by human capacity, technology, and materials. 6-8.AH.8.1
2. Science limits its explanations to systems that lend themselves to observation and empirical evidence. 6-8.AH.8.2
3. Science knowledge can describe consequences of actions but is not responsible for society's decisions. 6-8.AH.8.3