

Student reflections on the nature of science

Nature of Science Skills:	Explanation of how we used this concept in the seed germination experiment:
<p>Scientific inquiry is characterized by a common set of values that include: logical thinking, precision, open-mindedness, objectivity, skepticism, replicability of results, and honest and ethical reporting of findings.</p>	
<p>The discourse practices of science are organized around disciplinary domains that share exemplars for making decisions regarding the values, instruments, methods, models, and evidence to adopt and use.</p>	
<p>Scientific investigations use a variety of methods, tools, and techniques to revise and produce new knowledge.</p>	
<p>Science knowledge is based on empirical evidence.</p>	
<p>Science disciplines share common rules of evidence used to evaluate explanations about natural systems.</p>	
<p>Science includes the process of coordinating patterns of evidence with current theory.</p>	
<p>Science arguments are strengthened by multiple lines of evidence supporting a single explanation.</p>	
<p>Theories and laws provide explanations in science, but theories do not with time become laws or facts.</p>	
<p>Models, mechanisms, and explanations collectively serve as tools in the</p>	

development of a scientific theory.	
Scientists often use hypotheses to develop and test theories and explanations.	
Science is both a body of knowledge that represents a current understanding of natural systems and the processes used to refine, elaborate, revise, and extend this knowledge	
Science distinguishes itself from other ways of knowing through use of empirical standards, logical arguments, and skeptical review	
Science knowledge has a history that includes the refinement of, and changes to, theories, ideas, and beliefs over time.	
Individuals and teams from many nations and cultures have contributed to science and to advances in engineering.	
Technological advances have influenced the progress of science and science has influenced advances in technology.	

Source: APPENDIX H – Understanding the Scientific Enterprise: The Nature of Science in the Next Generation Science Standards. Released April 2013