

9-12 Nature of Science Learning Targets

(Evaluation) 9-12.N.1.1. Students are able to evaluate a scientific discovery to determine and describe how societal, cultural, and personal beliefs influence scientific investigations and interpretations.

I can judge the value of (evaluate) a finding based on experiments (scientific discovery) to find appropriate information about (determine) and tell in words or numbers (describe) how

- opinions of people living together (societal beliefs)
- views based on religion or race (cultural beliefs) and
- ideas of the scientist (personal beliefs)

influence experiments designed to find out about something (scientific investigations) and explanations of what experiment results mean (scientific interpretations).

(Synthesis) 9-12.N.1.2. Students are able to describe the role of observation and evidence in the development and modification of hypotheses, theories, and laws.

I can tell in words or numbers (describe) the role of information gathered by use of senses and instruments (observation) and experimental results used to support a conclusion (evidence) in the development and modification of:

- explanations that can be tested of (hypotheses)
- well-tested explanations based on observation, experimentation, and reasoning (theories)
- generalizations that describe recurring facts or events in nature (laws).

(Synthesis) 9-12.N.2.1. Students are able to apply science process skills to design and conduct student investigations.

I can use what I know (apply) to:

- form a hypothesis
 - develop a procedure
 - select and correctly use appropriate instruments
 - revise explanations based on evidence
 - form conclusions
 - communicate and defend the results
- (science process skills) to plan (design) and perform (conduct) experiments (investigations).

(Application) 9-12.N.2.2. Students are able to practice safe and effective laboratory techniques.

I can perform repeatedly (practice) safe and effective calibrations, measurements and handling of chemicals and instruments (laboratory techniques).