Unit IV: STEM and the Scientific Method

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Enduring Understanding

The scientific method is a way to ask and answer scientific questions.

Scientists utilize both qualitative and quantitative evidence to develop evidence-based arguments.

Essential Questions

Why is the scientific method important?

Why is it important to do more than one trial when conducting an experiment?

Why is it important to have a control when conducting an experiment?

Is my experiment “wrong” if my hypothesis was not correct?

Content

Internet Resources

How It’s Made

http://science.discovery.com/tv/how-its-made/#fbid=i_dhCZk_2OA

How Products Are Made

http://www.madehow.com/

Modern Marvels

http://www.history.com/shows/modern-marvels

Scientific Method Experiment

http://www.umaine.edu/nsfgk-12/images/pdfs/icemeltcompm.pdf

Project Ideas:

http://www.sciencebuddies.org/

Experiment-Resources.com

http://www.experiment-resources.com/

Skills

Distinguish between quantitative and qualitative observations.

Identify the major components of the Scientific Method and the importance in using it when completing experiments.

Identify the differences between independent variable, dependent variable, and the control in an experiment.

Identify the importance of doing multiple trials when conducting experiments.

Design an experiment that will utilize the Scientific Method and write final report in the correct Scientific Method format.

Explain the importance of the question, hypothesis, and conclusion in an experiment.

Explain why an experiment is not "wrong" if the hypothesis was proven false.