

Unit IV: STEM: Designing a Playdough Process

Content Area: **Science**
Course(s): **Science 2**
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Enduring Understandings

Scientific knowledge is contingent and subject to modification.

Science contains an element of uncertainty.

The scientific method is a set of rules and procedures that allow us to test our ideas about how the world works, make predictions about events, and create theories.

Essential Questions

What is the process scientist use to communicate scientific information?

How do scientists use the scientific method to conduct an investigation?

How can various students uniquely use the scientific method pre- and post- field trips?

Content

This interactive module from APBI (Association for British Pharmaceutical Industry) explores the properties of solids, liquids, and gases, with background information for teachers and cartoon animations for students.

✘ <http://bit.ly/1cX5Kkm>

This collection of online resources from NeoK12 presents a range of videos related to the states of matter.

✘ <http://www.neok12.com/States-of-Matter.htm>

This collection of online resources from PBS Learning Media features videos and interactives that address properties of solids, liquids, and gases. Requires free registration with PBS LearningMedia™.

✖ <http://bit.ly/1j43D35>

This video is a fun animation of the song “Solid Liquid Gas,” by the rock group They Might be Giants.

✖ <http://vimeo.com/5395252>

This interactive from the BBC is a virtual laboratory in which children can investigate the temperature at which various solids turn to liquids.

✖ http://www.bbc.co.uk/schools/scienceclips/ages/8_9/solid_liquids.shtml

Using the Scientific Method for Pre- and Post- Field Trips

✖ <http://www.naturenet.com/Pre%20and>

Ideas on questions to investigate using the scientific method.

www.teachnet.com/lesson/science/scimet.htm

Resources and lesson plans, *plus* special free services for teachers to help integrate outdoor education into their classrooms

www.naturenet.com

Make a Sand Clock, Apply the Scientific Method www.education.com/activity/article/Sand_Clocks/

Skills

Like engineers, perform product research related to a new juice being created by the Creative Juices Company.

Understand what technology is and learn the idea that engineers design technologies. and process information

from readings, investigations, and/or oral communications.

Conduct investigations using scientific method.

Recognize and develop hypotheses that can be tested in well-designed investigations.

Create rubric for high-quality and low-quality play dough and perform controlled experiments to identify properties of play dough ingredient mixtures.

Apply knowledge of solids, liquids, mixtures, and chemical engineering while imagining, planning, creating, testing, and improving a play dough making process.

Analyze and develop a well-designed investigation.

Identify and demonstrate safe procedures when conducting an investigation.

Collect, organize, and accurately display data collected from investigations.

Analyze data to identify possible trends.

Communicate findings from hands-on investigations and print and non-print resources.

Standards
