

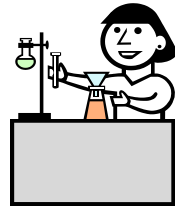
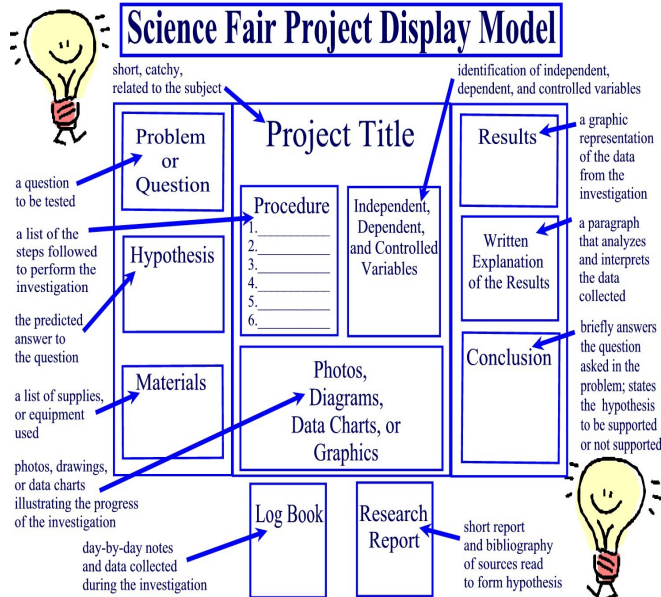


Family Fun Activities and Investigations

Visit the following places to experience hands-on science:

Maryland Science Center
601 Light Street
Baltimore, MD 21230
410-685-5225

Baltimore Museum of Industry
1415 Key Highway
Baltimore, MD 21230
410-727-4808



Career Connections

Take a few minutes to discuss, with your child, these different career opportunities for people interested in designing and performing scientific investigations.

Biologist

A scientist who deals with the origin, history, characteristics, habits, etc. of plants and animals

Agriculturalist

A person dedicated to feeding the world and educating people about it

Physicist

A scientist who studies the science concerned with the interaction of matter and energy

Chemist

A scientist who studies the makeup, structure, and properties of matter

Aerospace Engineer

A person who designs, builds, and repairs aircraft and spacecraft

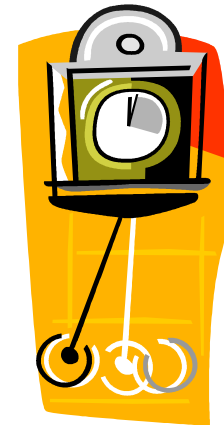
Prepared by

Office Of Science, Pre K–12

A Parent's Informational Guide to the Science Unit:

PENDULUMS SWING, AS PENDULUMS DO!...

Developing a STEM Fair Project



Grade 5



PENDULUMS SWING, AS PENDULUMS DO!...

Developing a STEM Fair Project

This is a fifth grade unit designed to help students learn how to create a STEM Fair project by investigating with pendulums. They will identify a problem, research a topic, form a hypothesis, design and perform an investigation, collect and analyze data, report results, form a conclusion, and create a miniature display backboard. Students will learn about the relationship between the length of a pendulum and the time needed for the pendulum to make one complete trip or period. They will learn about potential and kinetic energy. The Maryland Voluntary State Curriculum Indicators addressed in the unit are listed below:

Constructing Knowledge

Gather and question information from different forms of scientific investigations including observing what things are like or what is happening somewhere, collecting specimens for analysis and doing experiments.

Apply Evidence and Reasoning

Seek better reasons for believing something other than "Everybody knows that..." or "I just know..."

Communicate Scientific Information

Recognize that clear communication is an essential part of doing science because it enables scientists to inform others about their work, expose their ideas to criticism by other scientists, and stay informed about scientific discoveries around the world.

Technology

Recognize and explain that a model can be used to learn something about an object.

Physics—Mechanics

Describe qualitatively and quantitatively motion of objects using distance, time, and speed.

Cite evidence that energy in various forms exists in mechanical systems.

Math Connection

Collect, record, accurately display, and compare data



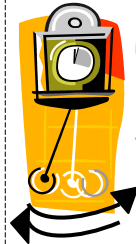
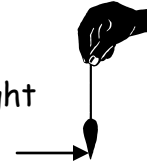
Unit Vocabulary

Encourage your children to use the vocabulary listed below when telling you about what they are learning during this science unit.



pendulum—a freely swinging weight hung from a string or rod

bob—the name given to the weight at the end of a pendulum



Period — the time it takes a pendulum to make one complete trip or swing

potential energy — energy available when an object is raised, stretched, or squeezed



kinetic energy — energy in a moving body

independent variable — manipulated variable

dependent variable — responding variable

controlled variables — factors that must be kept exactly the same



Books to Read

Take some time to read books about science fair projects with your child. Books on this topic can be found in the non-fiction section of the library with the call numbers 507. You can also find books on this topic in the children's section of your school and public library.

Guide to More of the Best Science Fair

Projects by Janice VanCleave

Help! My Science Project Is Due Tomorrow...

by Janice VanCleave

Amazing Award Winning Science Fair Projects

by Glen Vecchione

Prize Winning Science Fair Projects for

Curious Kids by Joe R. Latigant and

Rain Newcomb

Internet Sites



www.isd77.k12.mn.us/resources/cf/SciProjIntro.html

<http://members.ozemail.com.au/~macinnis/scifun/projects.htm>

www.scifair.org

www.hallbar.com/sciencecenter.html

<http://howstuffworks.com/>

www.brainpop.com

<http://school.discovery.com/sciencefaircentral>

<http://faculty.washington.edu/chudler/fair.html>