366853

Wave Demonstration Using Springs Lab Activity

Aligned with All Published National Standards

ward's science

IMGN 250-8069

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standards alignment

framework for K-12 science education © 2012

* The Dimension I practices listed below are called out as **bold** words throughout the activity.

DIMENSION 1 Science and Engineering Practices

×	Asking questions (for science) and defining problems (for engineering)	×	Use mathematics and computational thinking
×	Developing and using models	×	Constructing explanations (for science) and designing solutions (for engineering)
	Planning and carrying out investigations	×	Engaging in argument from evidence
×	Analyzing and interpreting data	×	Obtaining, evaluating, and communicating information

DIMENSION 2 Cross Cutting Concepts

×	Patterns	×	Energy and matter: Flows, cycles, and conservation
×	Cause and effect: Mechanism and explanation	×	Structure and function
×	Scale, proportion, and quantity	×	Stability and change
×	Systems and system models		

DIMENSION 3 Core Concepts

Discipline	Core Idea Focus
Physical Science	PS4: Waves and their Applications in Technologies for Information Transfer

× Indicates standards covered in activity

next generation science standards © 2013

Middle School Standards Covered	High School Standards Covered
MS.PS4-2: Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.	HS-PS4-1: Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

(continued on next page)

standards/learning objectives

national science education standards © 1996

Content Standards (K-12)			
X	Systems, order, and organization	X	Evolution and equilibrium
X	Evidence, models, and explanation	X	Form and Function
X	Constancy, change, and measurement		

Physical Science Standards Middle School		Physical Science Standards High School	
X	Motions and Forces	X	Motions and Forces
X	Transfer of Energy	X	Interactions of Energy and Matter

X Indicates standards covered in activity

benchmarks for science literacy (AAAS, © 1993)

1. The Nature of Science	1B: Scientific Inquiry
4. The Physical Setting	4F: Motion
11. Common Themes	11B: Models
	11C: Constancy and Change
	11D: Scale

activity objectives:

- Define the nature of waves
- Explain how waves transfer energy
- Distinguish between longitudinal and transverse waves
- Explain the characteristics of waves
- Enumerate and explain the properties of waves

time requirement:

This activity can be completed in one 45-minute class period.