366806

Osmosis and Diffusion Lab Activity

Aligned with All Published National Standards

ward's science

IMGN 250 8008

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

DIMENSION 1 Science and Engineering Practices

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

DIMENSION 2 Cross Cutting Concepts

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

DIMENSION 3 Core Concepts

Discipline	Core Idea Focus
Life Science	LS1: From Molecules to Organisms: Structures and Properties

X Indicates standards covered in activity

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Middle School Standards Covered	High School Standards Covered
MS.LS1-1: Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.	HS.LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
MS.LS1-2: Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	HS.LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

(continued on next page)

standards and learning objectives

national science education standards © 2002

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

Life Science Standards Middle School		Life Science Standards High School	
	Systems, order, and organization		Evolution and equilibrium
X	Evidence, models, and explanation	X	Form and function
X	Constancy, change, and measurement		

X Indicates standards covered in activity

benchmarks for science literacy (AAAS, © 1993)

1. The Nature of Science	1B: Scientific Inquiry
5. The Living Environment	5C: Cells
6. The Human Organism	6C: Basic Functions
11. Common Themes	11B: Models
	11C: Constancy and Change

activity objectives:

- Demonstrate osmosis and diffusion of molecules through a selectively permeable membrane.
- Determine which molecules are able to pass through a membrane and which molecules are not able to pass through a membrane.

time requirement:

This activity takes approximately 45 minutes to complete.