366808

Kidney Dialysis Simulation Lab Activity

Aligned with All Published National Standards

ward's science

IMGN 250-8012

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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
	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

NGSS Standards ©2013

Middle School Standards Covered	High School Standards Covered
MS.LS1-2	HS.LS1-2
MS.LS1-3	HS.LS1-3

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		

Life Science Standards Middle School		Life Science Standards High School	
X	Structure and Function in Living Systems	X	The Cell
X	Regulation and Behavior		

X Indicates standards covered in activity

learning objectives

benchmarks for science literacy (AAAS, ©1993)

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

activity objectives:

- Construct a model to simulate the action of a kidney
- Relate changes in color, turgor, and glucose content to evidence of osmosis
- Evaluate the function and importance of the kidneys filtering waste and conserving water

time requirement:

45 minutes