

370107

# Analyzing Samples of Artificial Urine Lab Activity

Aligned with All Published National Standards

ward's  
science+

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Ward's in-house scientists are always on call to assist you with your questions. Our expert can provide personal solutions and product advice for your curriculum.

Email [sciencehelp@vwr.com](mailto:sciencehelp@vwr.com)

or call 800-962-2660 to get started.

# framework for K-12 science education © 2012

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

<b>DIMENSION 1</b> Science and Engineering Practices	X	Asking questions (for science) and defining problems (for engineering)		Use mathematics and computational thinking
		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
<b>DIMENSION 2</b> 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		
<b>DIMENSION 3</b> Core Concepts	Discipline		Core Idea Focus	
	Life Science		LS1: Molecules to Organisms: Structures and Processes	

# next generation science standards © 2013

<b>NGSS STANDARDS</b>	Middle School Standards Covered	High School Standards Covered
	MS.LS1-3: Use arguments supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.	HS.LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

# national science education standards © 1996

Content Standards (K-12)			
X	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	
X	Structure and Function in Living Systems	X	The Cell
X	Regulation and Behavior		

X Indicates standards covered in activity

# learning objectives

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## 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	11A: Systems
	11C: Constancy and Change

### activity objectives:

- Examine, test, and compare artificial urine samples with vitamin C, phosphates, glucose, and albumin with a control artificial urine sample.

### time requirement:

This activity can be completed in 40 - 60 minutes.