Simulated Disease Transmission Lab Activity

Aligned with All Published National Standards

ward's science

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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
Life Science	LS3: Heredity: Inheritance and Variations of Traits
Engineering, Technology and Applications of Science	ETS1: Engineering Design

✕ Indicates standards covered in activity

next generation science standards © 2013

Middle School Standards Covered	High School Standards Covered
MS.LS3-1: Develop and use a model to describe why structural changes in genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organisms.	HS.ETS1-2: Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
MS.ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	

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standards/learning objectives

national science education standards © 1996

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

Life Science Standards Middle School		Life Science Standards High School	
✕	Structure and Function in Living Systems	✕	The Cell
✕	Populations and Ecosystems	✕	Interdependence of Organisms
Science in Personal and Social Perspectives Standards Middle School		Science in Personal and Social Perspectives Standards High School	
✕	Personal Health	✕	Personal and Community Health

✕ 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
	5D: Interdependence of Life
6. The Human Organism	6A: Human Identity
	6E: Physical Health
8. The Designed World	8F: Health Technology
11. Common Themes	11A: Systems
	11B: Models
	11C: Constancy and Change

activity objectives:

- Simulate the transmission of disease
- Identify the original disease carrier (in the class population)
- Trace the route of transmission

time requirement:

This activity takes approximately 45 minutes to complete.