



Workshop 2009 Learning Outcomes

SCIENCE LEARNING OUTCOMES Youth develop an understanding of ...	MEDIA LEARNING OUTCOMES Youth develop an understanding of....
1. What is a virus ?	1. How do you plan and research to tell a science media story?
2. How do viruses reproduce inside a cell ?	2. How do you record a science media story using a variety of devices ?
3. How do viruses spread from one individual to another ?	3. How do you gather material and edit that material into a science media story?
4. How do viruses evade host defenses?	4. How do you share a science media story with peers, teachers, and parents?



Workshop 2009 Science Standards

LEARNING OUTCOMES	Omaha Public Schools Science Standards	National Science Education Standards (National Research Council 1996)
<p>Youth develop an understanding of ...</p> <p>1. What are viruses?</p> <p>2. Three problems that need to be solved by viruses:</p> <p>a. How do viruses reproduce inside a cell?</p> <p>b. How do viruses spread from one individual to another?</p> <p>c. How do viruses evade host defenses?</p>	<p><u>Grade 9 Biology</u></p> <p>Standard B-01: Examine problems using scientific inquiry. Knowledge of cell structure and function is based on the analysis of experimental evidence.</p> <p>Standard B-02: Integrate unifying concepts and processes in science experiences. The structure of cell organelles is related to their function. Scientists study evolutionary change in living things by collecting data and analyzing it.</p> <p>Standard B-03: Investigate and describe the importance of cell structure and function to life. Cells, the basic units of life, vary in complexity.</p> <p>Standard B-04: Investigate the molecular basis of genetics and the influence of genetics on health. Cells reproduce to transfer genetic information from generation to generation. A person's health is affected by genetic and environmental factors (genetic disease, disease causes, disease control and nutrition and health).</p> <p><u>Grades 7 and 8</u></p> <p>Standard 7-05: Develop an understanding of the structure and function of the human body. Interpret data on body disorders and diseases and match to the organ and systems involved. Investigate and explain how personal choices and the environment can directly affect a person's health.</p> <p>Standard 8-05: Explore reproduction and the transfer of genetic material in living things. Sexual reproduction involves the joining of a sperm cell and an egg cell while asexual reproduction does not. Changes in environment affect reproduction rates.</p>	<p><u>Content C & D, Teaching for Grades 9- 12</u></p> <p>Understandings about Scientific Inquiry. Conceptual principles and knowledge guide scientific inquiries.</p> <p>Identify Questions and Concepts that Guide Scientific Investigations. Students should formulate a testable hypothesis and demonstrate the logical connections between the scientific concepts guiding a hypothesis and the design of an experiment.</p> <p>Communicate and Defend a Scientific Argument. Students in school science programs should develop the abilities associated with accurate and effective communication.</p> <p>Personal and Community Health. The severity of disease symptoms is dependent on many factors, such as human resistance and the virulence of the disease-producing organism.</p> <p>The Cell. Cells have particular structures that underlie their functions.</p> <p>The Molecular Basis of Heredity. In all organisms, the instructions for specifying the characteristics of the organism are carried in DNA, a large polymer formed from subunits of four kinds (A, G, C, and T).</p> <p>Biological Evolution. Species evolve over time. The great diversity of organisms is the result of more than 3.5 billion years of evolution that has filled every available niche with life forms. The millions of different species of plants, animals, and microorganisms that live on earth today are related by descent from common ancestors.</p> <p>Nature of Scientific Knowledge. Because all scientific ideas depend on experimental and observational confirmation, all scientific knowledge is, in principle, subject to change as new evidence becomes available.</p>