



Leaf Pack Network

West Virginia State Standards, Grade 7 Science

Leaf Pack Network[®] curriculum meets the following West Virginia State Standards for grade 7:

Seventh Grade Science Content Standards and Objectives

The Coordinated and Thematic Science (CATS) Seven objectives evaluate, interpret, and predict conditions and phenomena of the living and designed worlds. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy in the fields of biology, chemistry, physics and earth and space sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes and models. Students will engage in active inquiries, investigations and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated into all activities. CATS Seven reviews motions and forces, ecosystems, diversity of life, energy transformations, plate tectonics, earth's resources and weather. Major concepts expanded at the seventh grade level include elements, mixtures, and compounds, populations/ecosystems, conservation of matter and energy and earth's history. West Virginia teachers are responsible for analyzing the benefits of technology for learning and for integrating technology appropriately in the students' learning environment. See the related grade -level Technology Standards and Objectives.

Standard 1: History and the Nature of Science Objectives

SC7.1.1 Realize that scientists formulate and test their explanations of nature using observation, experiments and theoretical models.

SC7.1.2 Recognize and appreciate that scientific knowledge is subject to modification as new scientific information challenges current theories.

SC7.1.3 Examine the role of skepticism, careful methods, logical reasoning and creativity in investigating the observable universe.

Standard 2: Science as Inquiry Objectives

SC7.2.1 Cooperate and collaborate to ask questions, find answers, solve problems, conduct investigations to further an appreciation of scientific discovery.

SC7.2.2 Formulate conclusions through close observations, logical reasoning, objectivity, perseverance and integrity in data collection.

SC7.2.3 Use a variety of materials and scientific instruments to conduct explorations, investigations and experiments of the natural world (e.g., barometer, anemometer, microscope, computer).

SC7.2.4 Demonstrate safe techniques for handling, manipulating and caring for science materials, equipment, natural specimens and living organisms.

SC7.2.5 Utilize experimentation to demonstrate scientific processes and thinking skills (e.g., formulating questions, predicting, forming hypotheses, quantifying, identifying dependent and independent variables).

SC7.2.6 Construct and use charts, graphs and tables to organize, display, interpret, analyze and explain data.

SC7.2.7 Use appropriate technology solutions to gather data; graph data; interpret data; and analyze information.

SC7.2.8 Use inferential reasoning to make logical conclusions from collected data.

Standard 3: Unifying Themes Objectives

SC7.3.1 Compare and contrast the relationship between the parts of a system to the whole system (e.g., take apart or build mechanical, electrical or biological systems).

SC7.3.3 Compare and contrast changes that occur in an object or a system to its original state.

Standard 4: Science Subject Matter/Concepts Objectives

SC7.4.1 Demonstrate an understanding of the interconnections of biological, earth and space and physical science concepts.

Life Cycles of Organisms: Reproduction and Heredity

SC7.4.7 Evaluate how the different adaptations and life cycles of plants and animals help them to survive in different niches and environments (e.g., inherited and acquired adaptations).

SC7.4.9 Relate how an organisms behavior response is a combination of heredity and environment.

Populations and Ecosystems

SC7.4.11 Predict the trends of interdependent populations if one of the limiting factors is changed.

SC7.4.12 Evaluate the consequences of the introduction of chemicals into the ecosystem (e.g., environmental consequences, human health risks, mutations).

Standard 5: Scientific Design and Application

- * Demonstrate an understanding of the interdependence between science and technology;
- * Demonstrate the ability to distinguish between natural and man-made objects;
- * Demonstrate abilities of technological design; and
- * Demonstrate the ability to utilize technology to gather data and communicate designs, results and conclusions.

Standard 6: Science in Personal and Social Perspectives Objectives

SC7.6.1 Use scientific reasoning and the knowledge of science and technology to make informed personal decisions at the local and global levels.

SC7.6.5 Analyze the positive and negative effects of technology on society and the influence of societal pressures on the direction of technological advances



The Leaf Pack Network is an initiative of Stroud™ Water Research Center. The Stroud Center seeks to advance knowledge and stewardship of freshwater systems through global research, education, and watershed restoration. Learn more at www.stroudcenter.org