



Leaf Pack Network

West Virginia State Standards, Grade 9 Science

Leaf Pack Network[®] curriculum meets the following West Virginia State Standards for grade 9:

Ninth Grade Science Content Standards and Objectives

The Coordinated and Thematic Science (CATS) Nine objectives continue the development of foundational knowledge in biology, chemistry, physics, and the earth and sciences. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy across these major fields of science. 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 percent of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated in all activities. Building on the knowledge and skills acquired in CATS Eight, students in CATS Nine will expand and deepen their understanding of major concepts such as energy interactions, genetic probabilities, chemical changes and mineral composition of local rock layers. 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

SC9.1.1 Formulate scientific explanations based on the student's observational and experimental evidence, accounting for variability in experimental results.

SC9.1.2 Recognize that science has practical and theoretical limitations.

SC9.1.3 Recognize that science is based on a set of observations in a testable framework that demonstrate basic laws that are consistent.

SC9.1.4 Conclude that science is a blend of creativity, logic and mathematics.

Standard 2: Science as Inquiry Objectives

SC9.2.1 Model and exhibit the skills, attitudes and/or values of scientific inquiry (e.g., curiosity, logic, objectivity, openness, skepticism, appreciation, diligence, integrity, ethical practice, fairness, creativity).

SC9.2.3 Apply scientific approaches to seek solutions for personal and societal issues.

SC9.2.4 Properly and safely manipulate equipment, materials, chemicals, organisms and models.

SC9.2.5 Conduct explorations in a variety of environments (e.g., laboratories, museums, libraries, parks and other outdoors locations).

SC9.2.6 Use appropriate technology solutions (e.g., computer, CBL, probe interfaces, software) to measure and collect data; interpret data; analyze and/or report data interact with simulations; conduct research; and to present and communicate conclusions.

SC9.2.7 Demonstrate science processes within a problem solving setting (e.g., observing, measuring, calculating, communicating, comparing, ordering, categorizing, classifying, relating, hypothesizing, predicting, inferring, considering alternatives and applying).

SC9.2.8 Design, conduct, evaluate and revise experiments (e.g., identify questions and concepts that guide investigations; design investigations; identify independent and dependent variables in experimental investigations; manipulate variables to extend experimental activities; use technology and mathematics to improve investigations and communications; formulate and scientific explanations and models using logic and evidence; recognize alternative explanations; communicate and defend a scientific argument).

Standard 4: Science Subject Matter/Concepts Objectives

SC9.4.1 Demonstrate an understanding of the interconnections of biological, earth/space and physical science concepts.

The Interdependence of Organisms

SC9.4.4 Mathematically illustrate changes in populations of organisms.

SC9.4.6 Design an environment that demonstrates the interdependence of plants and animals

Standard 5: Scientific Design and Application

SC9.5.2 Cite examples of the interdependence of science and technology (e.g., new technologies have led to development of new scientific knowledge).



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