Adventures in Aeronautics

National Standards

Grades K – 4 Science

Source: National Standards Science 1996

Lesson/Activity	Grades K - 4 Science Standards
Adventures in Aeronautics	Objects have many observable properties, including size, weight, shape, color, temperature, and the ability to react with other substances. Those properties can be measured using tools, such as rulers, balances, and thermometers.
Adventures in Aeronautics	In early years, students develop simple skills, such as how to observe, measure, cut, connect, switch, turn on and off, pour, hold, tie, and hook. Beginning with simple instruments, students can use rulers to measure the length, height, and depth of objects and materials; thermometers to measure temperature; watches to measure time; beam balances and spring scales to measure weight and force; magnifiers to observe objects and organisms; and microscopes to observe the finer details of plants, animals, rocks, and other materials. Children also develop skills in the use of computers and calculators for conducting investigations.
Adventures in Aeronautics	Scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge). Good explanations are based on evidence from investigations.
Adventures in Aeronautics	Women and men of all ages, backgrounds, and groups engage in a variety of scientific and technological work.
Adventures in Aeronautics	Science and technology have been practiced by people for a long time.
Adventures in Aeronautics	Men and women have made a variety of contributions throughout the history of science and technology.
Adventures in Aeronautics	Although men and women using scientific inquiry have learned much about the objects, events, and phenomena in nature, much more remains to be understood. Science will never be finished.
Adventures in Aeronautics	Many people choose science as a career and devote their entire lives to studying it. Many people derive great pleasure from doing science.

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National Standards

Grades 5 - 8 Science

Source: National Standards Science 1996

Lesson/Activity	Grades 5 - 8 Science Standards
Adventures in Aeronautics	An object that is not being subjected to a force will continue to move at a constant speed and in a straight line.
Adventures in Aeronautics	If more than one force acts on an object along a straight line, then the forces will reinforce or cancel one another, depending on their direction and magnitude. Unbalanced forces will cause changes in the speed or direction of an object's motion.
Adventures in Aeronautics	Science influences society through its knowledge and world view. Scientific knowledge and the procedures used by scientists influence the way many individuals in society think about themselves, others, and the environment. The effect of science on society is neither entirely beneficial nor entirely detrimental.
Adventures in Aeronautics	Science and technology have advanced through contributions of many different people, in different cultures, at different times in history. Science and technology have contributed enormously to economic growth and productivity among societies and groups within societies.
Adventures in Aeronautics	Scientists and engineers work in many different settings, including colleges and universities, businesses and industries, specific research institutes, and government agencies.
Adventures in Aeronautics	Women and men of various social and ethnic backgrounds--and with diverse interests, talents, qualities, and motivations--engage in the activities of science, engineering, and related fields such as the health professions. Some scientists work in teams, and some work alone, but all communicate extensively with others.
Adventures in Aeronautics	Many individuals have contributed to the traditions of science. Studying some of these individuals provides further understanding of scientific inquiry, science as a human endeavor, the nature of science, and the relationships between science and society.
Adventures in Aeronautics	In historical perspective, science has been practiced by different individuals in different cultures. In looking at the history of many peoples, one finds that scientists and engineers of high achievement are considered to be among the most valued contributors to their culture.
Adventures in Aeronautics	Tracing the history of science can show how difficult it was for scientific innovators to break through the accepted ideas of their time to reach the conclusions that we currently take for granted.

Aeronautics Educator Guide

National Standards

Grades 3 - 5 Science

Source: National Standards Science Literacy 2008

Lesson/Activity	Grades 3 – 5 Science Standards
Adventures in Aeronautics	1B/E1 Scientific investigations may take many different forms, including observing what things are like or what is happening somewhere, collecting specimens for analysis, and doing experiments.
Adventures in Aeronautics	1B/E2b One reason for following directions carefully and for keeping records of one's work is to provide information on what might have caused differences in investigations.
Adventures in Aeronautics	3A/E1 Throughout all of history, people everywhere have invented and used tools. Most tools of today are different from those of the past but many are modifications of very ancient tools.
Adventures in Aeronautics	3A/E3 Measuring instruments can be used to gather accurate information for making scientific comparisons of objects and events and for designing and constructing things that will work properly.
Adventures in Aeronautics	4F/E1a Changes in speed or direction of motion are caused by forces.
Adventures in Aeronautics	4F/E1bc The greater the force is, the greater the change in motion will be. The more massive an object is, the less effect a given force will have.
Adventures in Aeronautics	4F/E2 How fast things move differs greatly. Some things are so slow that their journey takes a long time; others move too fast for people to even see them.