

Which science education standards can be addressed through this monograph?

STANDARD	Lesson Plan	FACTivity
Science Competency Goals for North Carolina (7th grade)		
Goal 1: The learner will design and conduct investigations to demonstrate an understanding of scientific inquiry.		
1.01 Identify and create questions and hypotheses that can be answered through scientific investigations.	X	X
1.04 Analyze variables in scientific investigations: Identify dependent and independent variables Manipulate variables Describe relationships between variables	X	X X
1.05 Analyze evidence to: Explain observations Make inferences and predictions Develop the relationship between evidence and explanation	X X X	X X X
1.06 Use mathematics to gather, organize, and present quantitative data resulting from scientific investigations: Measurement Analysis of data		X X
1.08 Use oral and written language to: Communicate findings Defend conclusions of scientific investigations	X X	X X
1.10 Analyze and evaluate information from a scientifically literate viewpoint by reading, hearing, and/or viewing: Scientific text Articles	X X	X X

STANDARD

Lesson Plan FACTivity

National Science Education Standards Addressed by This Article

Science as Inquiry

Abilities necessary to do scientific inquiry:

- Identify questions that can be answered through scientific investigation.
- Design and conduct a scientific investigation.
- Develop descriptions, explanations, predictions, and models using evidence.
- Think critically and logically to make the relationships between evidence and explanations.

X	X
	X
X	X
X	X

Life Science

Regulation and behavior:

- All organisms must be able to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing environment.
- Behavior is one kind of response an organism can make to an internal or environmental stimulus.
- An organism’s behavior evolves through adaptation to its environment.

X	X
X	
X	

Populations and Ecosystems:

- A population consists of all individuals of a species that occur together at a given place and time.
- Populations of organisms can be categorized by the function they serve in an ecosystem.
- The number of organisms an ecosystem can support depends on the resources available and abiotic factors, such as quantity of light and water, range of temperatures, and soil composition.

X	
X	
X	X

Diversity and Adaptations of Organisms:

- Although different species might look dissimilar, the unity among organisms becomes apparent from an analysis of internal structures, the similarity of their chemical processes, and the evidence of common ancestry.
- Biological adaptations include changes in structures, behaviors, or physiology that enhance survival and reproductive success in a particular environment.

X	
X	

Science and Technology

Understanding About Science and Technology:

- Science and technology are reciprocal. Science helps drive technology, as it addresses questions that demand more sophisticated instruments and provides principles for better instrumentation and technique. Technology is essential to science, because it provides instruments and techniques that enable observations of objects and phenomena that are otherwise unobservable due to factors such as quantity, distance, location, size, and speed. Technology also provides tools for investigations, inquiry, and analysis.

X	X
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Science in Personal and Social Perspectives

Natural Hazards:

- Human activities also can induce hazards through resource acquisition, urban growth, land-use decisions, and waste disposal. Such activities can accelerate many natural changes.

X	
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Science and Technology in Society:

- Societal challenges often inspire questions for scientific research, and social priorities often influence research priorities through the availability of funding for research.

X	
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History and Nature of Science

Science as Human Endeavor:

- 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.
- The work of science relies on basic human qualities, such as reasoning, insight, energy, skill, and creativity—as well as on scientific habits of mind, such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas.

	X
X	X

Nature of Science:

- Scientists formulate and test their explanations of nature using observation, experiments, and theoretical and mathematical models.

X	X
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