

NATIONAL STANDARDS
Appendix A

SCIENCE

K-4 General Science Strands addressed by NAT:

SCIENCE AS INQUIRY

As a result of activities in grades K-4, all students should develop

- Abilities necessary to do scientific inquiry
- Understanding about scientific inquiry

K-4 Life Science Strands Addressed by NAT:

LIFE SCIENCE

As a result of activities in grades K-4, all students should develop an understanding of

The characteristics of organisms

- Organisms have basic needs. For example, animals need air, water, and food; plants require air, water, nutrients, and light. Organisms can survive only in environments in which their needs can be met. The world has many different environments, and distinct environments support the life of different types of organisms.
- Each plant or animal has different structures that serve different functions in growth, survival, and reproduction. For example, humans have distinct body structures for walking, holding, seeing, and talking.
- The behavior of individual organisms is influenced by internal cues (such as hunger) and by external cues (such as a change in the environment). Humans and other organisms have senses that help them detect internal and external cues.

Life cycles of organisms

- Plants and animals have life cycles that include being born, developing into adults, reproducing, and eventually dying. The details of this life cycle are different for different organisms.
- Plants and animals closely resemble their parents.
- Many characteristics of an organism are inherited from the parents of the organism, but other characteristics result from an individual's interactions with the environment. Inherited characteristics include the color of flowers and the number of limbs of an animal. Other features, such as the ability to ride

a bicycle, are learned through interactions with the environment and cannot be passed on to the next generation.

Organisms and environments

- All animals depend on plants. Some animals eat plants for food. Other animals eat animals that eat the plants.
- An organism's patterns of behavior are related to the nature of that organism's environment, including the kinds and numbers of other organisms present, the availability of food and resources, and the physical characteristics of the environment. When the environment changes, some plants and animals survive and reproduce, and others die or move to new locations.
- All organisms cause changes in the environment where they live. Some of these changes are detrimental to the organism or other organisms, whereas others are beneficial.
- Humans depend on their natural and constructed environments. Humans change environments in ways that can be either beneficial or detrimental for themselves and other organisms.

5-8 General Science Strands addressed by NAT:

SCIENCE AS INQUIRY

As a result of activities in grades 5-8, all students should develop

- Abilities necessary to do scientific inquiry
- Understanding about scientific inquiry

5-8 Life Science Strands Addressed by NAT:

LIFE SCIENCE

As a result of activities in grades 5-8, all students should develop understanding of

- Structure and function of living systems
- Reproduction and heredity
- Regulation and behavior
- Populations and ecosystems
- Diversity and adaptations of organisms

AAAS: PROJECT 2061

K-2 and 3-5 Units:

Benchmarks for Science Literacy

- Some animals and plants are alike in the way they look and in the things they do, and others are very different from one another.
- Plants and animals have features that help them live in different environments.
- Stories sometimes give plants and animals attributes they really do not have.
- Most living things need water, food, and air.
- Animals eat plants or other animals for food and may also use plants (or even other animals) for shelter and nesting.
- Living things are found almost everywhere in the world. There are somewhat different kinds in different places.
- Plants and animals both need to take in water, and animals need to take in food. In addition, plants need light.
- Many materials can be recycled and used again, sometimes in different forms.

SOCIAL STUDIES

Grade Four Unit

Our State History and Geography

Apply the themes of Geography to agricultural life in the state. Evaluate the ways people used and modified the physical environment of the state over time.

Discuss the role of slavery in the Southeast and the importance of slave labor on the economy, specifically the importance of slaves in animal husbandry.

Trace the history of Colonization within the state. Research the ways people, goods and services moved in the past versus how they move today. Specifically, study the role of farm animals in helping people.

Learn basic economic principles through study of the economy of the state over time. Specifically, research the changing role of agriculture in state history.

Recognize how technology has influenced change over time, specifically how farm animals' products and services have been replaced.

Grade Five Unit

United States History and Geography: Making a New Nation

Students in grade five study the development of the nation up to 1850, with an emphasis on the people who were already here, when and from where others arrived, and why they came.

5.8 Students trace the colonization, immigration, and settlement patterns of the American people from 1789 to the mid-1800s, with emphasis on the role of economic incentives, effects of the physical and political geography, and transportation systems.

1 Discuss the waves of immigrants from Europe between 1789 and 1850 and their modes of transportation into the Ohio and Mississippi Valleys and through the Cumberland Gap (e.g., overland wagons, canals, flatboats, steamboats).

4 Discuss the experiences of settlers on the overland trails to the West (e.g., location of the routes; purpose of the journeys; the influence of the terrain, rivers, vegetation, and climate; life in the territories at the end of these trails).