

Gifted Science

At the end of the school year, students will be able to...

GRADE 1

GOAL 11 Inquiry

(Integrated into the whole year) Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

STANDARD A

Know and apply the concepts, principles and processes of scientific inquiry.

- _____ Describe an observed event orally.
- _____ Ask questions on a variety of science topics.
- _____ Collect and compare data from simple investigations.
- _____ Record and store data.
- _____ Arrange data into patterns.
- _____ Compare individual and group results.

STANDARD B

Know and apply the concepts, principles and processes of technological design.

- _____ State a given design problem in his/her own words and describe how to solve the problem.
- _____ Propose a way to build something or get something to work better.
- _____ Build the device using the materials and tools provided.
- _____ Test the design using simple instruments, techniques and measurement methods, with teacher guidance.
- _____ Report the design of the device, the test process and the results orally.

GOAL 12 Concepts

Understand the fundamental concepts, principles and interconnections of the life, physical earth/space sciences.

STANDARD A

Know and apply concepts that explain how living things function, adapt and change.

STANDARD B

Know and apply concepts that describe how living things interact with each other and with their environment.

UNIT 1 TREES and THEIR USES

- _____ Identify the parts of a tree (roots, trunk, branches, leaves, flowers, fruit, buds and cones).
- _____ Explain how trees change during the year.
- _____ Describe how leaves get food and water.
- _____ Compare and contrast conifer and deciduous trees.
- _____ Describe how people and animals use trees.
- _____ Identify how plants grow from seeds.

UNIT 2 ANIMALS

- _____ Describe how living things move and how movement helps meet their needs.
- _____ Explain how different animals get food.
- _____ Identify the structure and function of animal parts.
- _____ Identify ways that color and shape can protect animals from predators.
- _____ Classify animals by characteristics.
- _____ Explain how animals prepare for winter (e.g., migration, hibernation).
- _____ Describe how animals change as they grow (metamorphosis, life cycle).
- _____ Describe unique adaptations of an animal to its habitat.

UNIT 3 WHAT IS A POND?

- _____ Describe how a pond is home to many plants and animals.
- _____ Identify changes in the habitat as seasons change.
- _____ Identify living and nonliving things in a pond.
- _____ Compare and contrast the pond with another habitat.

_____ Describe a food chain within a pond and other habitats.

_____ Explain how freezing changes a pond.

UNIT 4 PLANTS and THEIR PARTS

_____ Explain how water is taken in through the roots of plants.

_____ Describe the structure and function of flowers and pumpkin plants (root, leaf, stem, flower, fruit, sepal, petal, stamen and pistil).

_____ Identify specialized parts of plants from different habitats.

_____ Identify ways seeds are dispersed.

_____ Describe the process of pollination.

_____ Describe the process of photosynthesis

_____ Identify common Illinois wildflowers.

STANDARD C

Know and apply concepts that describe properties of matter and energy and the interactions between them.

STANDARD D

Know and apply concepts that describe force and motion and the principles that explain them.

UNIT 5 PUSHES and PULLS

_____ Describe how objects can move to different positions.

_____ Describe how wheels can help objects move.

_____ Explain how a force can push or pull an object.

_____ Identify how the parts of an object can work together.

UNIT 6 FORCES and MAGNETS

_____ Identify objects that are attracted to magnets.

_____ Describe how magnets attract and repel other magnets.

_____ Describe a magnetic field.

STANDARD E

Know and apply concepts that describe the features and processes of the Earth and its resources.

STANDARD F

Know and apply concepts that explain the composition and structure of the universe and the Earth's place in it.

UNIT 7 THE SKIES ABOVE

_____ Describe how the sun warms the Earth and moves across the sky.

_____ Identify how shadows require light and change as light changes.

_____ Identify types of weather.

_____ Identify what causes weather changes.

_____ Describe the water cycle and how clouds are formed

_____ Compare and contrast different seasons.

_____ Identify three types of clouds.

UNIT 8 NIGHT SKIES

_____ Identify how the moon moves and changes shapes (moon phases).

_____ Identify how stars light the sky and form patterns called constellations.

_____ Compare and contrast day and night skies.

UNIT 9 EARTH DAY

_____ Explain the need for preserving the Earth.

GOAL 23 Human Body

Understand human body systems and factors that influence growth and development

STANDARD A

Describe and explain the structure and functions of the human body systems and how they interrelate.

STANDARD B

Explain the effects of health-related actions on the body systems.

STANDARD C**Describe factors that affect growth and development.****UNIT 10 YOU GROW and CHANGE**

_____ Describe changes that happen as people grow.

UNIT 11 YOU INSIDE and OUT

_____ Explain how bones, muscles and joints help people move.

_____ Identify characteristics of skin and the nature of germs.

_____ Describe the importance of teeth (dental hygiene).

_____ Describe how teeth change.

GOAL 13 Connections***Understand the relationship among science, technology and society in historical and contemporary contexts.*****STANDARD A****Know and apply the accepted practices of science.**

_____ Follow teacher directions regarding safety when doing activities.

_____ Predict what should happen when a procedure is completed the same way.

_____ Explain how things can be learned by careful observation.

STANDARD B**Know and apply concepts that describe the interaction between science, technology and society.**

_____ Use simple equipment in scientific investigations (e.g., rulers, tape measures, balance).

_____ Describe why scientists use measuring instruments.

_____ Relate anecdotes about scientists and inventors from various ethnic and gender groups.

_____ Identify ways that science and technology affect each person's life.

_____ Demonstrate ways to reduce, reuse and recycle materials.