

Gifted Science

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

GRADE 2

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.
- _____ Develop questions on scientific topics.
- _____ Collect data for investigations using measuring instruments and technologies.
- _____ Record and store data using available technologies.
- _____ Arrange data into logical patterns and describe the patterns.
- _____ Compare observations on individual and group results.

STANDARD B

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

- _____ Given a simple design problem, formulate possible solutions.
- _____ Design a device that will be useful in solving the problem.
- _____ Build the device using the materials and tools provided.
- _____ Test the device and record results using given instruments, techniques and measurement methods.
- _____ Report the design of the device, the test process and the results in solving a given problem.

GOAL 12 Concepts

Understand the fundamental concepts, principles and interconnections of the life, physical and 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 AT HOME IN THE CANYON

- _____ Describe adaptations of living things in a canyon.
- _____ Describe how living things get what they need in a canyon.

UNIT 2 ANCIENT LIFE/THEORIES OF EXTINCTION

- _____ Identify types of dinosaurs.
- _____ Describe why animals go extinct.

UNIT 3 INSECTS/ARACHNIDS

- _____ Describe the life cycle of an insect/arachnid.
- _____ Describe relationships within an environment.

STANDARD C

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

UNIT 4 MATTER

- _____ Describe properties of material using the senses.
- _____ Identify that volume, mass and weight are properties of matter.
- _____ Compare and contrast solids, liquids, and gases.
- _____ Explain how matter can change.
- _____ Identify that elements are the building blocks of matter.

UNIT 5 HEAT

- _____ Describe how heat moves in different materials at different rates and can result in changing states.
- _____ Describe how heat moves from a warmer to a cooler object

UNIT 6 LIGHT and SOUND

- _____ Identify how light moves.
- _____ Describe how sound is produced by vibrations.
- _____ Explain how sound moves.

STANDARD D

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

UNIT 7 FORCE and MACHINES

- _____ Explain the terms force, motion, friction and balance.
- _____ Describe how a force changes the way something moves.
- _____ Describe how levers and ramps work.

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 8 FINDING OUT ABOUT THE PAST

- _____ Describe what fossils are and what they tell us about the past.
- _____ Identify how paleontologists dig up dinosaur bones and reconstruct them.
- _____ Identify how food is a source of energy.

UNIT 9 EARTH'S SCRAPBOOK

- _____ Identify how the Earth's development is shown in layers.

UNIT 10 MAKING A HOME IN THE CANYON

- _____ Classify rocks from their properties.
- _____ Describe how rocks can change.
- _____ Identify how a cave forms.

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 11 YOUR HEART and LUNGS

- _____ Explain how the heart works.
- _____ Explain how the lungs work.

UNIT 12 TEAMWORK

- _____ Explain how the blood and lungs work together.
- _____ Explain how the effects of cleanliness, proper diet and exercise affect the function of the heart and lungs.

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.

- _____ Use basic safety practices (e.g., not tasting materials without permission, "stop/drop/roll").
- _____ Explain why similar results are expected when procedures are done the same way.
- _____ Explain how knowledge can be gained by careful observation.

STANDARD B

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

- _____ Explain the uses of common scientific instruments (e.g., ruler, thermometer, balance, probe, computer).
- _____ Explain how using measuring tools improves the accuracy of estimates.
- _____ Describe contributions men and women have made to science and technology.
- _____ Identify ways that science and technology affect people's everyday lives (e.g., transportation, medicine, agriculture, sanitation, communication occupations).
- _____ Demonstrate ways to reduce, reuse and recycle materials.