1st Grade American Online School

SCIENCE CURRICULUM

Exploring Living Things and How They Survive

Version May/2025

1. Introduction

The Role of Science Education in 1st Grade

In 1st grade, science introduces young learners to the wonder of the living world around them. Through hands-on experiences, storytelling, and guided discovery, students explore plants and animals, understand their needs, and build foundational observation and reasoning skills. Learning is driven by questions, models, and real-world encounters with nature.

By the end of this course, students will:

✓ **Identify living and non-living things and describe what living things need.**

✓ **Observe plants and animals and explain how they grow and survive.**

✓ **Recognize patterns in how animals behave and adapt.**

✓ **Ask questions, collect data, and share ideas through pictures, words, and models.**

✓ **Appreciate the diversity of life in their environment.**

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2. Core Competence Areas

SCI.1 Characteristics of Living Things

Learning Outcomes

By the end of this course, students will be able to:

✓ **Differentiate between living and non-living things.**

✓ **Describe the basic needs of all living organisms (food, water, air, shelter).**

✓ **Use drawings and labels to share what they observe.**

Competencies

SCI.1.A.1 – Defining life and its needs

- Explore pictures and classroom objects to sort into living/non-living.
- Record daily needs in a "Living Things Diary."

SCI.1.A.2 – Asking questions about the natural world

- Create wonder walls with student questions.
- Conduct mini-investigations on what living things need to grow.

SCI.2 Plants Are Living Things

Learning Outcomes

By the end of this unit, students will be able to:

✓ **Identify the parts of a plant and their functions.**

✓ **Observe how plants grow over time and what they need.**

✓ **Describe how plants respond to sunlight and water.**

Competencies

SCI.2.A.1 – Observing and labeling plant parts

- Grow beans in plastic cups and observe root development.
- Label stems, leaves, and flowers in art-science journals.

SCI.2.A.2 – Tracking plant growth and change

- Create plant growth charts and photo diaries.
- Design simple experiments comparing light or water conditions.

SCI.3 Animals Are Living Things

Learning Outcomes

By the end of this unit, students will be able to:

✓ **Recognize that animals need food, water, air, and shelter to live.**

✓ **Identify basic animal groups (mammals, birds, fish, etc.).**

✓ **Understand that different animals meet needs in different ways.**

Competencies

SCI.3.A.1 – Sorting and identifying animal types

- Use visuals, figurines, or books to group animals by type or trait.
- Compare babies to adults and explore how animals change.

SCI.3.A.2 – Exploring where and how animals live

- Match animals to their habitats and shelters.
- Create simple “animal homes” from natural materials.

SCI.4 How Animals Meet Their Needs

Learning Outcomes

By the end of this unit, students will be able to:

✓ **Explain how animals get food, protect themselves, and move.**

✓ **Describe adaptations like claws, fur, wings, or shells.**

✓ **Compare different animals’ ways of surviving in their environment.**

Competencies

SCI.4.A.1 – Exploring animal behaviors and body parts

- Watch short nature videos or observe live pets/bugs.
- Draw animals in action and label their parts (e.g., “The rabbit runs with strong legs”).

SCI.4.A.2 – Creating models of animals and their needs

- Build animal models or roleplay daily routines (eat, hide, move).
- Present habitat dioramas or “Day in the Life” stories.

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3. Assessment and Evaluation

Formative Assessments – Daily Inquiry and Reflection

✓ Observation sketches and “What I saw” journals.

✓ Science sentence starters: “I noticed…”, “I wonder…”.

✓ Participation in nature walks and classroom explorations.

Summative Assessments – Projects and Presentations

✓ Plant growth timeline portfolio.

✓ Animal classification chart.

✓ “My Animal’s Needs” oral or video presentation.

Authentic Assessment – Creative and Applied Learning

✓ Build a plant care plan or animal care chart.

✓ Storytelling from the perspective of a living thing.

✓ Diorama or puppet show illustrating needs and adaptations.

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4. Instructional Strategies for Online Learning

Hands-On and Nature-Based

✓ Use school gardens, parks, and classroom terrariums.

✓ Include real plants, insects, or observation windows.

Integrated and Expressive

✓ Connect science to reading (nonfiction animal books), art (labeling diagrams), and movement (animal yoga).

✓ Use science songs, chants, and storytelling to reinforce learning.

Safe, Respectful, and Engaging

✓ Practice kindness toward living creatures.

✓ Celebrate curiosity with "Wonder of the Week" discussions.

✓ Foster a respectful, tidy, nature-focused classroom space.