40 Nature Walks: Science Labs-On-the-Go Learning Record Volume 1

Outdoor Science Labs Supporting Cross-Curricular Learning
Grade Range: 1st–8th
Subject Focus: Science (Life Science, Earth Science, Physical Science), with Math, Writing, and Art Integration

Content Description

This curriculum provides 40 distinct nature-based science walks that function as independent science labs in the field. Each walk includes observational tasks and data collection prompts focused on scientific principles drawn from life, earth, and physical science. Activities include analyzing patterns in plant and animal structures, exploring evidence of weather and erosion, comparing physical properties of natural materials, and interpreting signs of life cycles and ecological interactions.

Many walks emphasize precise measurement, classification, and recording of phenomena using science tools. Students interact with real-world natural systems as they gather and interpret data, describe structure and function in living and nonliving elements, and consider how weather and seasons influence the observable world. These lessons promote experiential science thinking and reinforce observation, comparison, documentation, and interpretation skills.

Learning Objectives

Students will:

- Observe and record natural patterns in weather, seasonal change, plant growth, and animal behavior.
- Compare and classify objects and organisms by attributes such as color, shape, texture, and function.
- Measure environmental features using nonstandard and standard tools (e.g., length, temperature, time).
- Identify evidence of life cycles, reproduction, and decomposition.
- Explore cause-and-effect relationships such as water flow shaping landforms and weathering.

- Analyze how living organisms use their structures to meet needs for survival.
- Construct simple models or diagrams from observations (e.g., plant structures, animal tracks).
- Record and graph simple environmental data.
- Use writing and drawing to describe observations and reflect on findings.
- Demonstrate an understanding of how different organisms interact within a habitat.

Standards Alignment

NGSS (Next Generation Science Standards)

- K-ESS2-1: Use and share observations of local weather conditions.
- 1-LS1-1: Use observations to describe how plants and animals use their external parts.
- 2-LS2-2: Develop a simple model that mimics plant seed dispersal or pollination.
- 2-LS4-1: Make observations of plants and animals to compare diversity in habitats.
- 3-LS3-1: Analyze and interpret data to provide evidence that plants and animals have inherited traits.
- 3-LS3-2: Use evidence to support explanations of traits influenced by the environment.
- 3-LS4-3: Construct arguments about how organisms survive well in particular habitats.
- 4-LS1-1: Use evidence to describe internal and external structures that support survival.
- 5-PS1-3: Make observations and measurements to identify materials based on properties.
- 5-LS1-1: Support arguments that plants get materials for growth from air and water.
- 5-LS2-1: Develop a model to describe movement of matter among plants, animals, and the environment.

- MS-LS1-4: Use argument based on evidence for how plants use internal/external structures to grow, reproduce, and survive.
- MS-LS2-1: Analyze data to describe effects of resource availability on organisms.

Math Integration (Common Core Math Standards)

- CCSS.MATH.CONTENT.2.MD.A.1: Measure the length of objects.
- CCSS.MATH.CONTENT.3.MD.B.3: Draw scaled picture graphs and bar graphs.
- CCSS.MATH.CONTENT.4.MD.A.2: Use measurement to solve problems involving length, weight, volume.

ELA Integration (Common Core ELA Standards)

- CCSS.ELA-LITERACY.W.3.2: Write informative/explanatory texts to examine a topic.
- CCSS.ELA-LITERACY.SL.4.4: Report on a topic in an organized manner using appropriate facts.

Arts Integration (NCAS – Visual Arts)

- VA:Cr1.2.4a: Collaboratively set goals and create artwork that is meaningful.
- VA:Cr2.1.5a: Experiment with forms and materials to express an idea visually.

Scope and Sequence

This resource supports nature-based science exploration and reinforces core scientific skills and concepts for students in grades 1–8. It integrates naturally with life science units on plant and animal characteristics, earth science units on weathering and soil, and physical science lessons on properties of matter and forces. The open-ended nature of the walks supports cross-disciplinary learning, particularly in observational writing, measurement, and visual recording.

The flexibility of the 40 activities allows for use in all seasons and across various habitats, providing broad exposure to scientific inquiry through hands-on observation. This curriculum supplements any core science program and strengthens foundational scientific practices including questioning, observing, analyzing, and recording.

Educational Benefits

- **Multi-Age Utility:** Walks are appropriate for students across elementary and middle school levels, supporting individualized or group instruction.
- **Scientific Journaling Practice:** Promotes observation, data collection, and reflection skills through consistent journaling prompts.
- **Interdisciplinary Approach:** Encourages connections between science, writing, math, and art.
- **Flexible Implementation:** Walks can be selected based on season, topic, or student interest with minimal prep.
- **Foundational Science Skills:** Reinforces NGSS-aligned practices such as measuring, modeling, and explaining based on evidence.
- **Support for Portfolio Development:** Student responses and journal entries offer clear records of science learning for documentation.
- **Practical Field Applications:** Encourages the use of tools and strategies that align with real-world scientific observation.

For more information or to view additional resources:
https://ourjourneywestward.com