



Scope & Sequence

A Reason For® Science

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A NEW PARADIGM

A Reason For® Science is designed for children — young minds created by an infinite God with an unlimited capacity to think, to learn, to explore, and to discover!

Because of its emphasis on how children really learn, **A Reason For® Science** uses a different paradigm from traditional textbooks. Why? In an effort to address standards and accountability, many of today's science

textbooks get learning backwards. They focus primarily on building a knowledge base, assuming students will later attach meaning to memorized facts. The problem is that very few elementary students master information that is presented this way because they never become engaged with the material.

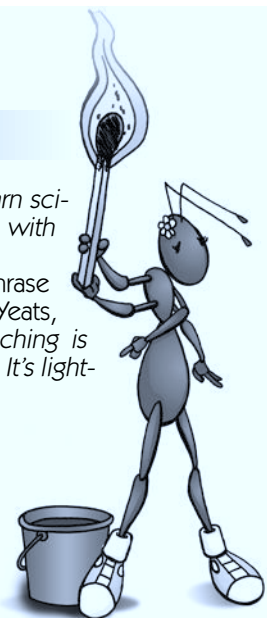
By contrast, **A Reason For® Science** is based on the premise that

learning science is an ACTIVE process. It is “something children do, not something done to them.”¹

According to the **National Science Education Standards**, “. . . active science learning means shifting emphasis away from teachers presenting information and covering science topics. The perceived need to include all the topics and information . . . is in direct conflict with the central goal of

having students learn scientific knowledge with understanding.”²

Or to paraphrase William Butler Yeats, “Great science teaching is not filling up a pail. It's lighting a fire!”



INQUIRY-BASED LEARNING

A Reason For® Science is designed to teach basic Life, Earth, and Physical Science concepts through fun, hands-on activities. Its focus is to make learning both fun and meaningful.

But hands-on activities by themselves are never enough. In order to truly master a concept, students must have “minds-on” experiences as well! This means actively engaging the material through a variety of methods

such as group discussion, problem solving, and journaling. It also requires thought-provoking questions that help develop higher-level cognitive skills. The weekly format of **A Reason For® Science** is designed to reflect this inquiry-based model.

According to the **National Science Education Standards**, “Inquiry is central to science learning. When engaging in inquiry, students describe

objects and events, ask questions, construct explanations, test those explanations against current scientific knowledge, and communicate their ideas to others . . . In this way, students actively develop their understanding of science by combining scientific knowledge with reasoning and thinking skills.”³

Since different students achieve understanding in different ways and

to different degrees, the flexible format of **A Reason For® Science** also encourages multiple learning styles and allows for individual differences. Each activity challenges students to develop their own unique skills, and encourages them to think of creative solutions.

NATIONAL STANDARDS

The “National Standards” referred to in this Scope & Sequence are from the **National Science Education Standards**¹. More specifically, they reflect the “K-4 Science Content Standards” (p.121 - 142) and “5-8 Science Content Standards” (p. 143 - 172).

Teacher Guidebooks include a list of the content standards that relate to each individual lesson. References are based on the NSES alphabetic format, plus a numeric code to indicate the bulleted sub-topic.

For example, **C1** in a fourth grade

lesson, would indicate Content Standard **C** and sub-topic **1**. (A detailed description of the **C1** content standard is found on pages 127 - 229 of the **Standards**.)

As noted above, lower grade and upper grade standards are found in

different sections. A **C1** reference for a third grade lesson, for example, would be found on page 127 (characteristics of organisms). By contrast, a **C1** reference for a seventh grade lesson would be found on page 155 (“structure and function of living systems”).

¹ National Science Education Standards, 1999. Washington, D.C.: National Academy Press. (p. 2); ² Ibid. (p. 20); ³ Ibid. (p. 2)

Level B (Grade 2)

Lesson	Category	Topic/Focus	Objective	National Standards
1	Life Science	Plant Structure/Function	To explore how materials move through a plant's system	C1 - Characteristics
2	Life Science	Camouflage	To explore how colors and patterns relate to survival	C1 - Characteristics
3	Life Science	Classification	To explore how creatures are sorted by characteristics	C1 - Characteristics
4	Life Science	Pollination/Germination	To explore some stages in a plant's life cycle	C2 - Life Cycles
5	Life Science	Seed Dispersal	To explore ways seeds are spread to help plants survive	C2 - Life Cycles
6	Life Science	Life Cycles	To understand that all living things have life cycles	C2 - Life Cycles
7	Life Science	Environments	To explore how creatures interact with their environment	C3 - Environments
8	Life Science	Adaptation	To explore how creatures adapt to their environment	C3 - Environments
9	Life Science	Structure/Function	To explore how creatures' structure relates to environment	C3 - Environments
10	Earth Science	Earth Materials	To explore the properties of rocks, soil, water, and air	D1 - Properties of Earth Materials
11	Earth Science	Soil Properties 1	To explore the properties of color and texture in soil	D1 - Properties of Earth Materials
12	Earth Science	Soil Properties 2	To explore the properties of porosity and nutrient values	D1 - Properties of Earth Materials
13	Earth Science	Planets	To explore the properties of the eight major planets	D2 - Objects in the Sky
14	Earth Science	Stars	To explore some of the basic properties of stars	D2 - Objects in the Sky
15	Earth Science	Earth's Surface	To explore major changes in the Earth's surface	D3 - Changes in Earth and Sky
16	Earth Science	Weather 1	To explore wind speed and direction	D3 - Changes in Earth and Sky
17	Earth Science	Weather 2	To explore how rainfall and temperature affect climate	D3 - Changes in Earth and Sky
18	Earth Science	Weather 3	To explore extreme changes in weather	D3 - Changes in Earth and Sky
19	Physical Science	Recycling 1	To explore how recycling helps conserve resources	B1 - Properties of Objects & Materials
20	Physical Science	Recycling 2	To further understand the importance of recycling	B1 - Properties of Objects & Materials
21	Physical Science	Density	To explore the concept of density	B1 - Properties of Objects & Materials
22	Physical Science	Physical Properties	To explore the idea that objects have physical properties	B1 - Properties of Objects & Materials
23	Physical Science	Surface Tension	To explore the concept of surface tension	B1 - Properties of Objects & Materials
24	Physical Science	Changes in Matter	To explore how matter changes from one state to another	B1 - Properties of Objects & Materials
25	Physical Science	Newton's 1st Law	To explore the concept and meaning of inertia	B2 - Position & Motion of Objects
26	Physical Science	Newton's 2nd Law	To explore the relationship of motion, mass, and force	B2 - Position & Motion of Objects
27	Physical Science	Newton's 3rd Law	To explore the concept of action/reaction	B2 - Position & Motion of Objects
28	Physical Science	Air Resistance	To explore how air resistance affects motion	B2 - Position & Motion of Objects
29	Physical Science	Spatial Relationships	To explore the concepts of position and motion	B2 - Position & Motion of Objects
30	Physical Science	Air Pressure	To explore the relationship of air pressure to motion	B2 - Position & Motion of Objects
31	Physical Science	Light Absorption	To explore what happens when light is absorbed	B3 - Light, Heat, Electricity, Magnetism
32	Physical Science	Heat Production	To explore two primary ways that heat is produced	B3 - Light, Heat, Electricity, Magnetism
33	Physical Science	Heat Movement	To explore the movement of heat	B3 - Light, Heat, Electricity, Magnetism
34	Physical Science	Static Electricity	To explore how atoms relate to static electricity	B3 - Light, Heat, Electricity, Magnetism
35	Physical Science	Electricity	To explore the difference between open & closed circuits	B3 - Light, Heat, Electricity, Magnetism
36	Physical Science	Magnetism	To explore the push and pull of magnetic forces	B3 - Light, Heat, Electricity, Magnetism