



# Scope & Sequence

**A Reason For® Science**

Published by **The Concerned Group**

## 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.

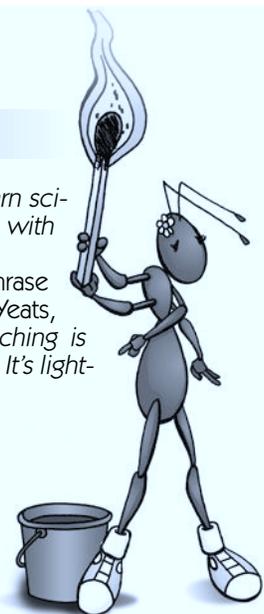
By contrast, **A Reason For® Science** is based on the premise that

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

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.”<sup>2</sup>

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.”<sup>3</sup>

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**<sup>1</sup>. 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”).

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

## Level C (Grade 3)

Lesson	Category	Topic/Focus	Objective	National Standards
1	Life Science	Germination	To explore how seeds germinate/grow	A1, A2, B1, B2, B3, C1, C2, C3, E3, F2, F3, F4, G1
2	Life Science	Water Conservation	To explore how body coverings conserve water	A1, A2, B1, B2, B3, C1, C3, D1, E3, F1, F4, G1
3	Life Science	Eye Function	To explore a simple eye	A1, A2, B1, B3, C1, E1, E2, E3, F1, F5, G1
4	Life Science	Seed Dispersal	To explore ways plants spread seeds	A1, A2, B1, B2, C1, C2, C3, E3, F2, F3, G1
5	Life Science	Plant Structure	To explore how leaves direct rain	A1, A2, B1, B2, C1, C3, E3, F2, F3, F4, G1
6	Life Science	Dehydration	To explore one method of preserving food	A1, A2, B1, B3, C1, C3, D1, E2, E3, F1, F2, F3, F4, G1
7	Life Science	Nervous System	To explore human reaction time	A1, A2, B1, B2, C1, E3, F1, G1
8	Life Science	Circulatory System	To explore the movement of blood	A1, A2, B1, B2, C1, E3, F1, G1
9	Life Science	Skeletal System	To explore the human skeleton	A1, A2, B1, C1, E3, F1, G1
10	Physical Science (Forces)	States of Matter	To explore three basic states of matter	A1, A2, B1, B2, B3, D1, D3, E3, F4, G1
11	Physical Science (Forces)	Surface Tension	To discover how water molecules attract each other	A1, A2, B1, B2, D1, E1, E2, E3, F5, G1
12	Physical Science (Forces)	Absorption	To explore how water is held or absorbed by materials	A1, A2, B1, B2, E1, E2, E3, F5, G1
13	Physical Science (Forces)	Gravity	To discover how gravity affects everything	A1, A2, B1, B2, D1, E3, G1
14	Physical Science (Forces)	Newton's Laws	To explore inertia and action/reaction	A1, A2, B1, B2, E3, F1, G1
15	Physical Science (Forces)	Balance	To explore balance	A1, A2, B1, B2, E3, G1
16	Physical Science (Forces)	Pressure	To explore how force moves objects	A1, A2, B1, B2, D1, E1, E2, E3, F5, G1
17	Physical Science (Forces)	Air Pressure	To explore the force of air pressure	A1, A2, B1, B2, B3, D1, D3, E3, G1
18	Physical Science (Forces)	Torque	To explore how forces change direction	A1, A2, B1, B2, E1, E2, E3, F5, G1
19	Earth Science	Matter	To discover that air is a form of matter	A1, A2, B1, B2, D1, D3, E3, G1
20	Earth Science	Air Pressure	To explore air pressure	A1, A2, B1, B2, D1, D3, E1, E2, E3, F5, G1
21	Earth Science	States of Matter	To explore the three states of matter	A1, A2, B1, B2, D1, D3, E1, E2, E3, F5, G1
22	Earth Science	Waves	To explore the action of waves	A1, A2, B1, B2, D1, D3, E3, F3, G1
23	Earth Science	Erosion	To explore how erosion occurs	A1, A2, B1, B2, D1, D3, E1, E2, E3, F3, F5, G1
24	Earth Science	Sediments	To explore how water separates materials	A1, A2, B1, B2, D1, D3, E3, G1
25	Earth Science	Atmosphere	To explore how light scatters	A1, A2, B1, B2, D1, D2, D3, E3, G1
26	Earth Science	Fossils	To explore how fossils are made	A1, A2, B1, B2, D1, D3, E3, G1
27	Earth Science	Constellations	To explore the concept of star groups	A1, A2, B1, B2, D2, D3, E3, G1
28	Physical Science (Energy/Matter)	Transfer of Energy	To explore how energy moves in waves	A1, A2, B1, B2, B3, E1, E2, E3, F5, G1
29	Physical Science (Energy/Matter)	Sound Waves	To explore how sound waves are amplified	A1, A2, B1, B3, D2, E1, E2, E3, F4, G1
30	Physical Science (Energy/Matter)	Energy Conservation	To explore how energy changes form	A1, A2, B1, B2, B3, E1, E2, E3, G1
31	Physical Science (Energy/Matter)	Images	To explore how a lens affects an image	A1, A2, B1, B2, B3, E1, E2, E3, F5, G1
32	Physical Science (Energy/Matter)	Magnetism	To explore some properties of matter	A1, A2, B1, B2, B3, D1, E2, E3, F3, F5, G1
33	Physical Science (Energy/Matter)	Electromagnetism	To build and use an electromagnet	A1, A2, B1, B2, B3, D1, E3, G1
34	Physical Science (Energy/Matter)	Properties of Matter	To explore the interaction of matter	A1, A2, B1, B2, B3, E1, E2, E3, F5, G1
35	Physical Science (Energy/Matter)	Combustion	To explore the "fire triangle"	A1, A2, B1, B2, E1, E2, E3, F5, G1
36	Physical Science (Energy/Matter)	Indicators	To explore the action of indicators	A1, A2, B1, E1, E2, E3, F1, F4, F5, G1