



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.

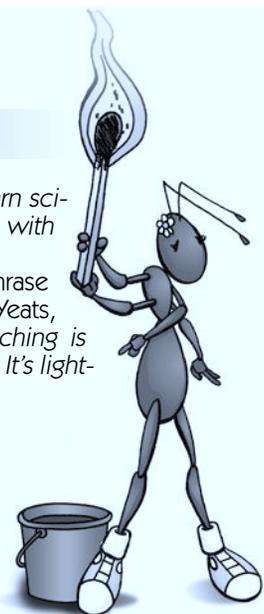
By contrast, **A Reason For® Science** is based on the premise that

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 F (Grade 6)

Lesson	Category	Topic/Focus	Objective	National Standards
1	Life Science	Seed Structure	To explore the structure and purpose of seeds	A1, A2, B1, B2, B3, C1, C3, D1, E3, F1, F4, G1
2	Life Science	Seed Dispersal	To explore how seeds are scattered around	A1, A2, B1, B2, B3, C1, C3, D1, E3, F1, F4, G1
3	Life Science	Chlorophyll	To explore the chemical responsible for photosynthesis	A1, A2, B1, B2, B3, C1, C3, D1, E3, F1, F4, G1
4	Life Science	Decomposition	To explore how organisms decompose after death	A1, A2, B1, B2, B3, C1, C3, D1, E3, F1, F4, G1
5	Life Science	Preservatives	To explore how preservatives affect decomposition	A1, A2, B1, B2, B3, C1, C3, D1, E3, F1, F4, G1
6	Life Science	Classification	To explore grouping objects by characteristics	A1, A2, B1, B2, B3, C1, C3, D1, E3, F1, F4, G1
7	Life Science	Camouflage	To explore how color affects survival of prey animals	A1, A2, B1, B2, B3, C1, C3, D1, E3, F1, F4, G1
8	Life Science	Eye Dominance	To explore brain function through eye dominance	A1, A2, B1, B2, B3, C1, C3, D1, E3, F1, F4, G1
9	Life Science	Eye Structure	To explore similarities between the eye and a camera	A1, A2, B1, B2, B3, C1, C3, D1, E3, F1, F4, G1
10	Physical Science (Forces)	Half Life	To explore how radioactive elements break down	A1, A2, B1, B2, B3, E1, E2, F3, F4, F5, G1, G2
11	Physical Science (Forces)	Cohesion	To explore how elements are held together	A1, A2, B1, B2, B3, G1, G2
12	Physical Science (Forces)	Stress	To explore how stress affects materials	A1, A2, B1, B2, B3, G1, G2
13	Physical Science (Forces)	Gravity	To explore how gravity affects objects	A1, A2, B1, B2, B3, G1, G2
14	Physical Science (Forces)	Momentum	To explore how forces are transferred	A1, A2, B1, B2, B3, E1, E2, F5, G1, G2
15	Physical Science (Forces)	Torque	To explore center of gravity and torque	A1, A2, B1, B2, B3, E1, E2, F5, G1, G2
16	Physical Science (Forces)	Buoyancy	To explore why some objects float	A1, A2, B1, B2, B3, E1, E2, F5, G1, G2
17	Physical Science (Forces)	Compression	To explore compression and how force is transferred	A1, A2, B1, B2, B3, E1, E2, F5, G1, G2
18	Physical Science (Forces)	Machines	To explore how machines multiply force and change its direction	A1, A2, B1, B2, B3, E1, E2, F5, G1, G2
19	Earth Science	Air Pressure	To explore air pressure	A1, A2, B1, B2, B3, D1, G1, G2
20	Earth Science	Air Pressure	To explore changes in air pressure	A1, A2, B1, B2, B3, D1, G1, G2
21	Earth Science	Weather	To explore an important weather instrument	A1, A2, B1, B2, B3, D1, E1, E2, F5, G1, G2
22	Earth Science	Geology	To explore properties of igneous rock	A1, A2, B1, B2, D1, G1, G2
23	Earth Science	Chemical Weathering	To explore a unique form of erosion	A1, A2, B1, D1, G1, G2
24	Earth Science	Groundwater	To explore how water is filtered underground	A1, A2, B1, B2, B3, D1, F1, F2, F3, F4, G1, G2
25	Earth Science	Glaciers	To explore how glaciers are formed	A1, A2, B1, B3, D1, D2, G1, G2
26	Earth Science	Planets	To make a model of a planet	A1, A2, B1, B2, D1, G1, G2
27	Earth Science	Earth Structure	To explore Earth's layers	A1, A2, B1, D1, D3, G1, G2
28	Physical Science (Energy/Matter)	Light	To explore light waves and color	A1, A2, B1, B2, B3, E1, E2, F5, G1, G2
29	Physical Science (Energy/Matter)	Lenses	To explore how a lens bends light	A1, A2, B1, B3, E1, E2, F5, G1, G2
30	Physical Science (Energy/Matter)	Sound	To explore how sound is made	A1, A2, B1, B2, B3, E1, E2, F5, G1, G2
31	Physical Science (Energy/Matter)	Magnetism	To explore magnets and magnetic fields	A1, A2, B1, B2, D1, E1, E2, F5, G1, G2
32	Physical Science (Energy/Matter)	Static Electricity	To explore some properties of electricity	A1, A2, B1, B2, B3, E1, E2, F5, G1, G2
33	Physical Science (Energy/Matter)	Thermodynamics	To explore a physical change	A1, A2, B1, B2, B3, E1, E2, F5, G1, G2
34	Physical Science (Energy/Matter)	Chemical Change	To explore a chemical change using a hand warmer	A1, A2, B1, B2, B3, E1, E2, F5, G1, G2
35	Physical Science (Energy/Matter)	Corrosion	To explore the speed of chemical reactions	A1, A2, B1, B3, G1, G2
36	Physical Science (Energy/Matter)	Indicators	To explore how indicators show changes	A1, A2, B1, G1, G2