One Minute Mysteries:
65 Short Mysteries You Solve with Science!

By Eric and Natalie Yoder
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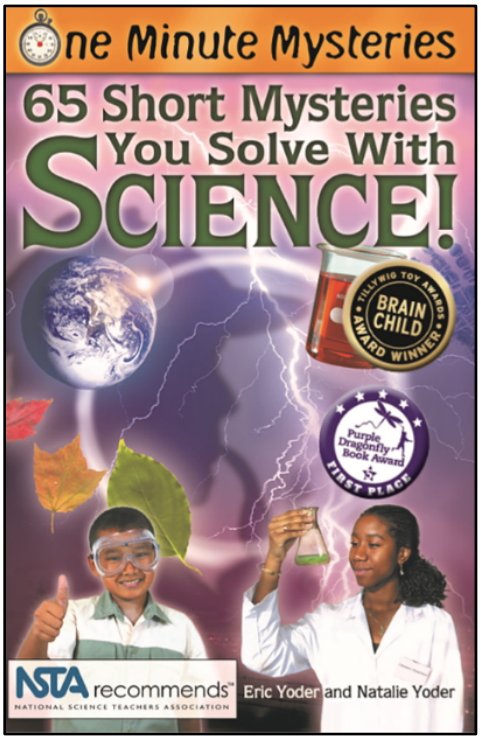
Ages 8-12 | Grades 4-8



Not your ordinary mystery book, *One Minute Mysteries* makes science fun! These short mysteries have a clever twist–you have to tap into your science wisdom to solve them! Each story, just one minute long, challenges your knowledge in earth, space, life, physical, chemical, and general science. Try your hand at dozens of science mysteries (with solutions included) that will keep you entertained–and eager to learn more!

The format of this book addresses both inquiry science and the nature of science. These standards permeate all of the mysteries presented in this book. In addition, there is considerable articulation of the content standards. Since this book encompasses both elementary and intermediate standards, they are all listed together under a K-8 heading.

The main focus of these mysteries is to stimulate creative problem solving and develop critical thinking skills. However, almost all of the mysteries require some knowledge of science content. A mystery a day is a great way to begin class while taking care of administrative requirements such as attendance and returning papers.

Articulated to the **National Science Education Standards** and the **Next Generation Science Standards**

Science curriculum standards were identified by Joan Wagner.

Joan Wagner is the Director of Focus on Learning, a science education consulting firm, as well as a former president of the Science Teachers Association of New York State. She provides professional development for K-12 science teachers. Joan is also an author of four science books and numerous articles for national, state and regional journals and newsletters. She can be reached at Joan@ScienceNaturally.com.

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Summary of National Science Education Standards

To facilitate the identification of the standards addressed by each mystery, a code number has been assigned to each standard.

Below is a summary of the standards with their identifying code. For a more detailed description of each standard, go to: http://www.nap.edu/openbook.php?record_id=4962.

Science as Inquiry (I) Standards, K-8

The inquiry standards address the following benchmarks:

- Understanding of scientific concepts
- An appreciation of how we know what we know in science
- Understanding of the nature of science

1I: Abilities necessary to do scientific inquiry
2I: Understanding about scientific inquiry

Physical Science (PS) Standards, K-4

1PS: Properties of objects and materials
2PS: Position and motion of objects
3PS: Light, heat, electricity and magnetism
4PS: Properties and changes of properties of matter
5PS: Motions and forces
6PS: Transfer of energy

Life Science (LS) Standards, K-8

1LS: Characteristics of organisms
2LS: Life cycles of organisms
3LS: Organisms and environments
4LS: Structure and function in living systems
5LS: Reproduction and heredity
6LS: Regulation and behavior
7LS: Population and ecosystems
8LS: Diversity and adaptations of organisms

Earth and Space Science (ES) Standards, K-8

1ES: Properties of earth materials
2ES: Objects in the sky
3ES: Changes in earth and sky
4ES: Structure of the earth system
5ES: Earth's history
6ES: Earth in the solar system

Science and Technology (TS) Standards, K-8

1TS: Abilities of technological design
2TS: Understanding science and technology
3TS: Abilities to distinguish between natural objects and objects made by humans

Science in Personal and Social Perspectives (PSPS) Standards, K-8

1PSPS: Personal health
2PSPS: Characteristics of and changes in populations
3PSPS: Types of resources
4PSPS: Changes in environment
5PSPS: Science and technology in local challenges
6PSPS: Populations, resources and environments
7PSPS: Natural hazards
8PSPS: Risks and benefits
9PSPS: Science and technology in society

History and Nature of Science (HNS) Standards

1HNS: Science as a human endeavor
2HNS: Nature of science
3NHS: History of science

Guide to Content (G) Standards

1G: Systems, order and organization
2G: Evidence, models and explanation
3G: Constancy, change and measurement

Articulation of National Science Education Standards

Life Science section

Classified Information: **1I, 1LS, 8LS**
Food for Thought: **3HNS, 5ES**
Bear Scare: **2I, 8LS**
The Horse's Fodder: **1LS, 8LS, 7LS**
Left in the Dark: **8LS**
Bugged by an Assignment: **7LS**
It's in the Blood: **8LS**
Seed of an Idea: **7LS**
Shell Game: **3LS, 8LS**
A Question of Identity: **1LS**
Turning Over a New Leaf: **1LS, 8LS**
The Pupil and the Pupae: **2LS**
A Fishy Solution: **4LS, 6PSPS**
A Fair Contest: **7LS**
Hair Style: **1I, 2I, 1LS**

Earth and Space Science section

Cloudy on the Concept: **2I, 3ES**
Shadow of a Doubt: **3ES**
Freeze Fall: **4PS, 4ES**
Time for a Change: **3ES, 6ES**
Stars in Their Eyes: **6ES**
Rain or Shine: **4ES**
Space Ship-Shape: **6ES**
Sight at Night: **6ES**
In Hot Water: **1PSPS**
Sands of Time: **3ES**
Falling Foliage: **3ES**
The Best-Laid Planets: **2 ES**
That Snow Problem: **6ES**
Battle of the Bulge: **4PS, 4ES**
Taking Directions: **3PS, 3ES**

Physical and Chemical Science section

Grass Stained: **4PS**
Faded Memory: **4PS**
Taken with a Grain of Salt: **4PS**
Double Dealing: **3PS**
Cabin Fever: **6PS**
Pumpkin Patch: **4PS**
Thirst for Knowledge: **4PS**
Gem Jam: **3PS**
Hearing Aide: **2PS, 6PS**
Too Hot to Handle: **6PS**
Storm Warning: **3PS**
Fingering the Culprit: **6PS**
Slow Burn: **4PS**
It Works Like Magic: **4PS**
Hide and Seek: **4PS**

General Science section

Needing a Lift: **5PS**
Water, Water Everywhere: **6PS**
Shocking Surprise: **3PS**
Stuck with the Mud: **5PS**
Valentine Vexation: **1PS**
Language Barrier: **3G**
Powerful Argument: **6PS, 1TS**
Nothing to Sneeze At: **1PSPS**
Lights Out: **3PS, 6PS**
Salad Days: **4PS**
Bird Watching: **4PS**
Raked Over the Coals: **2G**
Picture This: **2G, 7LS**
Weight Debate: **3G**
Alarming Situation: **1TS**

Bonus Section

Water on the Brain: **1I**
Pointing Out the Facts: **3PS**
Thrown a Curve: **5PS**
The Long Run: **5PS**
Occupational Hazards: **9PSPS**

Articulation of Next Generation Science Standards

Life Science Standards

LS1.B: Growth and Development of Organisms
LS1.C: Organization for Matter and Energy Flow in Organisms
MS-LS2-3: Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
MS-LS3: Heredity: Inheritance and Variation of Traits
MS-LS4: Biological Evolution: Unity and Diversity
MS-LS4-1: Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.
LS4.C: Adaptation

Earth Science Standards

MS-ESS1-1: Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
ESS1.B: Earth and the Solar System
MS-ESS1-3: Analyze and interpret data to determine scale properties of objects in the solar system.
MS-ESS2-2: Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying times and special scales.
ESS2.C: The Roles of Water in Earth's Surface Processes
MS-ESS2-4: Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.

Physical Science Standards

MS-PS1-2: Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction occurred.
MS-PS2: Motion and Stability: Forces and Interactions
MS-PS2-3: Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
MS-PS3-3: Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.
PS4.A: Wave Properties

Mathematics

Using Mathematics and Computational Thinking

Inquiry

Constructing Explanations and Designing Solutions
Engaging in Argument from Evidence
Analyzing and Interpreting Data

Note: This book also strongly supports the Language Arts and Science component of the Common Core State Standards/Reading for Science.