

Helping Your Child Learn Science
A guide for parents of children in grades K to 4:
Correlation to the National Research Council's
National Science Education Standards for Grades K-4

The following data describe the pages of the guide *Helping Your Child Learn Science* that address the *National Science Education Standards* (National Research Council) for students in kindergarten through grade 4. Analysis data show the page numbers of the guide that correlate to each ability, concept, or principle.

National Science Education Standards	Analysis Data
Content Standard A: Science As Inquiry	
As a result of activities in Grades K-4, all students should develop abilities necessary to do scientific inquiry.	
Ask a question about objects, organisms, and events in the environment.	Pages 3, 5, 14
Plan and conduct a simple investigation.	Pages 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
Employ simple equipment and tools to gather data and extend the senses.	Pages 3, 14
Use data to construct a reasonable explanation.	Page 3
Communicate investigations and explanations.	Pages 3, 8, 14
As a result of activities in Grades K-4, all students should develop understandings about scientific inquiry.	
Scientific investigations involve asking and answering a question and comparing the answer with what scientists already know about the world.	Pages 3, 14
Scientists use different kinds of investigations depending on the questions they are trying to answer. Types of investigations include describing objects, events, and organisms; classifying them; and doing a fair test (experimenting).	Pages 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
Simple instruments, such as magnifiers, thermometers, and rulers, provide more information than scientists obtain using only their senses.	Pages 3, 15
Scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge). Good explanations are based on evidence from investigations.	Pages 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14
Scientists make the results of their investigations public; they describe the investigations in ways that enable others to repeat the investigations.	Page 3
Content Standard B: Physical Science	
As a result of the activities in grades K-4, all students should develop an understanding of properties of objects and materials.	
Objects have many observable properties, including size, weight, shape, color, temperature, and the ability to react with other substances. Those properties can be measured using tools, such as rulers, balances, and thermometers.	Pages 3, 4, 5, 6, 8, 9, 10, 12, 13, 14

Objects are made of one or more materials, such as paper, wood, and metal. Objects can be described by the properties of the materials from which they are made, and those properties can be used to separate or sort a group of objects or materials.	Page 14
Materials can exist in different states--solid, liquid, and gas. Some common materials, such as water, can be changed from one state to another by heating or cooling.	Pages 5, 11
As a result of the activities in grades K-4, all students should develop an understanding of position and motion of objects.	
The position of an object can be described by locating it relative to another object or the background.	Page 8
An object's motion can be described by tracing and measuring its position over time.	Page 8

Content Standard C: Life Science	
As a result of activities in grades K-4, all students should develop an understanding of the characteristics of organisms.	
Organisms have basic needs. For example, animals need air, water, and food; plants require air, water, nutrients, and light. Organisms can survive only in environments in which their needs can be met. The world has many different environments, and distinct environments support the life of different types of organisms.	Pages 4, 9
Each plant or animal has different structures that serve different functions in growth, survival, and reproduction. For example, humans have distinct body structures for walking, holding, seeing, and talking.	Pages 4, 9, 14
As a result of activities in grades K-4, all students should develop an understanding of the life cycles of organisms.	
Plants and animals have life cycles that include being born, developing into adults, reproducing, and eventually dying.	Page 4

Content Standard D: Earth and Space Science	
As a result of their activities in grades K-4, all students should develop an understanding of objects in the sky.	
The sun, moon, stars, clouds, birds, and airplanes all have properties, locations, and movements that can be observed and described.	Page 8
As a result of their activities in grades K-4, all students should develop an understanding of changes in the earth and sky.	
The surface of the earth changes. Some changes are due to slow processes, such as erosion and weathering, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.	Pages 8, 11
Weather changes from day to day and over the seasons. Weather can be described by measurable quantities, such as temperature, wind direction and speed, and precipitation.	Page 3

Objects in the sky have patterns of movement. The sun, for example, appears to move across the sky in the same way every day, but its path changes slowly over the seasons. The moon moves across the sky on a daily basis much like the sun. The observable shape of the moon changes from day to day in a cycle that lasts about a month.	Page 8
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Content Standard E: Science and Technology	
As a result of activities in grades K-4, all students should develop abilities of technological design.	
Identify a simple problem.	Pages 12, 13
Propose a solution.	Pages 12, 13
Implement proposed solutions.	Pages 12, 13
Evaluate a product or design.	Pages 12, 13
As a result of activities in grades K-4, all students should develop understanding about science and technology.	
People have always had problems and invented tools and techniques (ways of doing something) to solve problems. Trying to determine the effects of solutions helps people avoid some new problems.	Pages 12, 13

Content Standard F: Science in Personal and Social Perspectives	
As a result of activities in grades K-4, all students should develop understanding of personal health.	
Safety and security are basic needs of humans. Safety involves freedom from danger, risk, or injury. Security involves feelings of confidence and lack of anxiety and fear. Student understandings include following safety rules for home and school, preventing abuse and neglect, avoiding injury, knowing whom to ask for help, and when and how to say no.	Page 12
Individuals have some responsibility for their own health. Students should engage in personal care—dental hygiene, cleanliness, and exercise—that will maintain and improve health. Understandings include how communicable diseases, such as colds, are transmitted and some of the body’s defense mechanisms that prevent or overcome illness.	Pages 6, 12
Nutrition is essential to health. Students should understand how the body uses food and how various foods contribute to health. Recommendations for good nutrition include eating a variety of foods, eating less sugar, and eating less fat.	Page 7
As a result of activities in grades K-4, all students should develop understanding of types of resources.	
The supply of many resources is limited. If used, resources can be extended through recycling and decreased use.	Pages 7, 13
As a result of activities in grades K-4, all students should develop understanding of changes in environments.	
Changes in environments can be natural or influenced by humans. Some changes are good, some are bad, and some are neither good nor bad. Pollution is a change in the environment that can influence the health, survival, or activities of organisms, including humans.	Page 11

Some environmental changes occur slowly, and others occur rapidly. Students should understand the different consequences of changing environments in small increments over long periods as compared with changing environments in large increments over short periods.	Page 11
As a result of activities in grades K-4, all students should develop understanding of science and technology in local challenges.	
People continue inventing new ways of doing things, solving problems, and getting work done. New ideas and inventions often affect other people; sometimes the effects are good and sometimes they are bad. It is helpful to try to determine in advance how ideas and inventions will affect other people.	Pages 10, 13
Science and technology have greatly improved food quality and quantity, transportation, health, sanitation, and communication. These benefits of science and technology are not available to all of the people in the world.	Pages 13, 14