

C O N T E N T S T A N D A R D S

U N D E R S T A N D I N G

WATER

A C T I V I T Y B O O K

***Understanding Water Activity Book* includes a variety of ready-to-use activities that integrate learning about water and academic subject areas. Following are content standards which were addressed during the development of this book.**

COLORADO CONTENT STANDARDS GRADES K-4

MATH

- ☐ Standard 1: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.
 - ◆ demonstrating meanings for whole numbers and commonly used fractions and decimals and representing equivalent forms of the same number through the use of physical models, drawings, calculators, and computers;
 - ◆ developing, testing, and explaining conjectures about properties of whole numbers, and commonly-used fractions and decimals; and
 - ◆ using number sense to estimate and justify the reasonableness of solutions to problems involving whole numbers and commonly-used fractions and decimals.
- ☐ Standard 2: Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.
 - ◆ reproducing, extending, creating, and describing patterns and sequences using a variety of materials;
 - ◆ describing patterns and other relationships using tables, graphs, and open sentences;
 - ◆ recognizing when a pattern exists and using that information to solve a problem; and
- ☐ Standard 3: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning used in solving these problems.
 - ◆ constructing, reading, and interpreting displays of data including tables, charts, pictographs, and bar graphs;
 - ◆ interpreting data using the concepts of largest, smallest, most often, and middle;
 - ◆ solving problems using various strategies for making combinations
- ☐ Standard 5: Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.
 - ◆ comparing and ordering objects according to measurable attributes
 - ◆ using the approximate measures of familiar objects to develop a sense of measurement.

- ☐ Standard 6: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving these problems.
 - ◆ demonstrating conceptual meanings for the four basic arithmetic operations of addition, subtraction, multiplication, and division;
 - ◆ adding and subtracting commonly-used fractions and decimals using physical models;
 - ◆ demonstrating understanding of and proficiency with basic addition, subtraction, multiplication, and division facts without the use of a calculator.

GEOGRAPHY

- ☐ Standard 1: Students know how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.
 - ◆ Students develop knowledge of Earth to locate people, places, and environments
 - identifying major geographic features;
 - locating places within their own and nearby communities in Colorado;
 - ◆ Students know how to analyze the spatial organization of people, places, and environments.
 - defining basic geographic vocabulary such as the concepts of location, direction, distance, scale, movement, and region using words and diagrams;
- ☐ Standard 2: Students know the physical and human characteristics of places, and use this knowledge to define and study regions and their patterns of change.
 - ◆ Students know the physical and human characteristics of places
 - identifying and classifying the characteristics of places as human or physical; and
 - describing how human and physical processes together shape places.

- ☐ Standard 3. Students understand how physical processes shape Earth's surface patterns and systems.
 - ◆ Students know the physical processes that shape Earth's surface patterns.
 - identifying the components of Earth's physical systems and their characteristics;
 - explaining how Earth-Sun relationships shape climate and vegetation patterns;
 - describing how features on Earth's surface are shaped by physical processes:
 - ◆ Students know the characteristics and distributions of physical systems of land, air, and water.
 - identifying characteristics of physical systems;
 - describing local environmental features and identifying the physical system to which they belong;
 - comparing patterns and distribution of environments within a physical system.
- ☐ Standard 5. Students understand the effects of interactions between human and physical systems and the changes in meaning, use, distribution and importance of resources.
 - ◆ Students know how human actions modify the physical environment
 - identifying how people depend upon, adapt to, and modify the physical environment.
 - ◆ Students know how physical systems affect human systems.
 - describing how the physical environment provides opportunities for and places constraints on human activities.
 - ◆ Students know the changes that occur in the meaning, use, location, distribution, and importance of resources.
 - describing the role of resources in daily life;
 - identifying the characteristics of renewable and nonrenewable resources; and
 - identifying the spatial distribution of resources.
- ☐ Standard 6. Students apply knowledge of people, places, and environments to understand the past and present and to plan for the future.
 - ◆ Students know how to apply geography to understand the past.
 - describing how places change over time; and
 - describing how places and environments may have influenced people and events over time.
 - ◆ Students know how to apply geography to understand the present and plan for the future.
 - describing issues in communities from a spatial perspective; and
 - identifying personal behaviors that can affect community planning.

READING AND WRITING

- ☐ Standard 1. Students read and understand a variety of materials.
- ☐ Standard 3. Students write and speak using conventional grammar, usage, sentence structure, punctuation, capitalization, and spelling.
- ☐ Standard 4. Students apply thinking skills to their reading, writing, speaking, listening, and viewing.
- ☐ Standard 5. Students read to locate, select, and make use of relevant information from a variety of media, reference and technological sources.

SCIENCE

- ☐ Standard 1. Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.
 - ◆ asking questions and stating predictions (hypotheses) that can be addressed through scientific investigation;
 - ◆ selecting and using simple devices to gather data related to an investigation;
 - ◆ using data based on observations to construct a reasonable explanation; and
 - ◆ communicating about investigations and explanations.
- ☐ Standard 2. Physical Science: Students know and understand common properties, form, and changes in matter and energy.
 - ◆ 2.1 Students know that matter has characteristic properties, which are related to its composition and structure;
 - ◆ 2.2 Students know that energy appears in different forms, and can move and change;
 - ◆ 2.3 Students understand that interactions can produce changes in a system, although the total quantities of matter and energy remain unchanged.
- ☐ Standard 3. Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.
 - ◆ 3.1 Students know and understand the characteristics of living things, the diversity of life, and how living things interact with each other and with their environment.
 - ◆ 3.2 Students know and understand interrelationships of matter and energy in living systems.
- ☐ Standard 4. Earth and Space Science: Students know and understand the processes and interactions of Earth's systems and the structure and dynamics of Earth and other objects in space.
 - ◆ 4.1 Students know and understand the compositions of Earth, its history, and the natural processes that shape it.
 - ◆ 4.3 Students know major sources of water, its uses, importance, and cyclic patterns of movement through the environment.
- ☐ Standard 5. Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.
 - ◆ describing resource-related activities in which they could participate that can benefit their communities and
- ☐ Standard 6. Students understand that science involves a particular way of knowing and understand common connections among scientific disciplines
 - ◆ identifying observable patterns and changes in their lives and predicting future events based on those patterns
 - ◆ describing and comparing the components and interrelationships of a simple system

VISUAL ARTS

- ☐ Standard 5. Students recognize and use the visual arts as a form of communication.



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