



**KENOSHA UNIFIED SCHOOL DISTRICT NO. 1
CURRICULUM AND INSTRUCTIONAL SERVICES
STANDARDS AND BENCHMARKS
SCIENCE**

KINDERGARTEN

STANDARD A: SCIENCE CONNECTIONS—STUDENTS WILL UNDERSTAND AND DESCRIBE THE UNIFYING CONCEPTS AND PROCESSES AMONG SCIENCE TOPICS WHICH LEAD TO CONNECTIONS BETWEEN PHYSICAL SCIENCE, EARTH/SPACE SCIENCE, AND LIFE SCIENCE.

A-1: Systems

Most things are made of parts, and some things may not work if parts are missing.

When parts are put together, they can do things that they couldn't do alone.

A-2: Models

A model of something is different from the real thing but can be used to learn something about the real thing.

A-3: Change and Constancy

Things change in some ways and stay the same in some ways.

People can keep track of change.

Things can change in different ways, such as in size, weight, color, and movement. Some small changes can be detected by taking measurements.

Some changes are so slow or so fast that they are hard to see.

A-4: Scale

Things in nature and things people make have very different sizes, weights, ages, and speeds.

A-5: Connections

(No Kindergarten Benchmarks)

STANDARD B: NATURE OF SCIENCE—STUDENTS WILL UNDERSTAND THAT THE STUDY OF SCIENCE IS ONGOING, AND THEORIES AND CONCEPTS IN SCIENCE CHANGE OVER TIME AS NEW EVIDENCE IS FOUND. SCIENTIFIC EXPLANATIONS MUST ADHERE TO CRITERIA SUCH AS: A PROPOSED EXPLANATION MUST BE LOGICALLY CONSISTENT, IT MUST ABIDE BY THE RULES OF EVIDENCE, IT MUST BE OPEN TO QUESTIONS AND POSSIBLE MODIFICATION, AND IT MUST BE BASED ON HISTORICAL AND CURRENT SCIENTIFIC KNOWLEDGE.

B-1: Science is a Human Endeavor, and There are Many Commonly Known Careers in Science.

Men and women from many cultures have contributed to science and technology throughout history, but much more remains to be understood. Science will never be finished.

Many people choose science as a career and devote their lives to studying it.

B-2: Nature of Scientific Process and Knowledge

Science is based on questions.

The job of a scientist is to construct ideas and explanations.

Scientific knowledge may change when new things are learned.

Scientists make the results of their investigations public.

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B-3: History of Science
(No Kindergarten Benchmarks)

STANDARD C: SCIENCE INQUIRY—STUDENTS WILL INVESTIGATE QUESTIONS USING SCIENTIFIC METHODS AND TOOLS, REVISE THEIR PERSONAL UNDERSTANDING TO ACCOMMODATE KNOWLEDGE, AND COMMUNICATE THOSE UNDERSTANDINGS TO OTHERS.

C-1: Ask Questions about Objects, Organisms, and Events in the Everyday World.
Ask questions and attempt reasonable answers based on observations and simple investigations.

C-2: Make Connections to Prior Knowledge.
Use prior knowledge to make predictions and help answer the question being investigated.

C-3: Gather Background Knowledge Related to the Questions Being Investigated.
Locate and access data and scientific knowledge in age-appropriate information sources and reference materials. (See English/ Language Arts and Information and Technology Literacy Standards.)

C-4: Design and Conduct Responsible and Safe Investigations to Help Answer Questions.
Demonstrate knowledge of age-appropriate safe laboratory procedures.

Participate in teacher-directed activities.

C-5: Safely Use Appropriate Senses, Equipment and Tools to Make Observations and Gather Data.
Use simple equipment to make observations and describe objects, events, and organisms; and compare them in terms of number, shape, texture, size and color.

C-6: Collecting and Representing Qualitative and Quantitative Data
(See Math Standard E.)
Communicate observations with words and pictures.

Make a simple bar graph, pictograph, table, or chart with real objects to help tell about observations.

C-7: Summarizing, Synthesizing, Inferring, and Building Explanations
Explain observations and describe what is displayed on a bar graph, table, or chart. (See Math Standard E-2.k.)

C-8: Communicating Results
Complete appropriate lab report or response sheet.

Communicate observations verbally, by drawing, or through simple writing.

STANDARD D: PHYSICAL SCIENCE —STUDENTS WILL DEMONSTRATE AN UNDERSTANDING OF THE PHYSICAL AND CHEMICAL PROPERTIES OF MATTER, THE FORMS AND PROPERTIES OF ENERGY, AND THE WAYS IN WHICH MATTER AND ENERGY INTERACT.

D-1: Properties of Matter
Objects and materials have many observable and measurable properties such as color, size, shape, texture, weight, etc.

Objects and materials can be sorted and ordered in terms of their properties.

D-2: Structure of Matter
Most objects and living things are made of parts and the parts are made of one or more materials.

D-3: Physical, Chemical and Nuclear Changes in Matter

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Things can be done to materials to change some of their properties, but not all materials respond the same way to what is done to them.

Objects can be broken into smaller pieces, which changes the appearance of the material but does not change what it is made of.

D-4: Position and Motion of Objects

The position of an object can be described by locating it relative to another object or the background.

D-5: Forces of Nature

Things near the earth fall to the ground, unless something holds them up.

D-6: Interactions of Energy and Matter

The sun provides the light and heat the earth needs.

D-7: Conservation of Energy
(No Kindergarten Benchmarks)

STANDARD E: EARTH SCIENCE—STUDENTS WILL DEMONSTRATE AN UNDERSTANDING OF THE STRUCTURE AND SYSTEMS OF EARTH AND THE UNIVERSE AND OF THEIR INTERACTIONS.

E-1: Properties and Structures of the Earth and its Materials

Earth materials are solid rocks and soils, water, and the gases of the atmosphere.

E-2: History and Changes of the Earth

(No Kindergarten Benchmarks)

E-3: Cycles in the Earth System

Some events in nature have a repeating pattern.

Seasonal changes occur in living things in the schoolyard.

E-4: The Earth, Our Solar System, and Space

The sun provides the light and heat the earth needs.

STANDARD F: LIFE AND ENVIRONMENTAL SCIENCE —STUDENTS WILL DEMONSTRATE AN UNDERSTANDING OF THE CHARACTERISTICS AND STRUCTURES OF LIVING THINGS, THE PROCESSES OF LIFE, AND HOW LIVING THINGS INTERACT WITH ONE ANOTHER AND THEIR ENVIRONMENT.

F-1: Characteristics, Structure, and Function in Living Things

Each kind of living thing has unique structures and behaviors, but different kinds of living things can have similar structures and behaviors.

Living things have structures and behaviors that help them live in different environments.

Living things have basic needs: food, water, air, light, and an appropriate environment in which to live.

The behaviors of living things are influenced by internal and external cues.

F-2: Life Cycles and Heredity of Living Things

Living things have life cycles that include being born, developing into adults, reproducing, and dying.

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Living things are very much, but not exactly, like their parents.

There is variation among individuals of one kind.

F-3: Organisms, Populations, and Ecosystems

Living things are found almost everywhere in the world, and different environments support the life of different types of organisms.

The behavior of living things is influenced by conditions in the environment.

F-4: Matter and Energy in Living Systems

The sun provides the light and heat that all living things need.

All animals depend on plants. Some animals eat plants for food. Other animals eat animals that eat the plants.

STANDARD G: SCIENCE APPLICATIONS—STUDENTS WILL DEMONSTRATE AN UNDERSTANDING OF THE RELATIONSHIP BETWEEN SCIENCE AND TECHNOLOGY AND THE WAYS IN WHICH THAT RELATIONSHIP INFLUENCES HUMAN ACTIVITIES.

G-1: The Process of Technological Design

Explain a simple problem; propose a product or design to solve the problem; implement the proposed solution; evaluate the product or design; and communicate the problem, design, and solution.

G-2: Abilities to Distinguish Between Natural Objects and Objects Made by Humans

Some objects occur in nature; others have been designed and made by people to solve human problems and enhance the quality of life.

G-3: Understanding About Science and Technology

People have always invented tools and ways of doing things to solve problems.

Tools are used to do things better or more easily and to do some things that could not otherwise be done at all.

Tools are used to observe, measure, and make things.

STANDARD H: SCIENCE IN SOCIAL AND PERSONAL PERSPECTIVES—STUDENTS WILL USE SCIENCE INFORMATION AND SKILLS TO MAKE INFORMED DECISIONS ABOUT THEMSELVES, THEIR COMMUNITY, AND THE WORLD IN WHICH THEY LIVE.

H-1: Personal and Community Health

(No Kindergarten Benchmarks)

H-2: Human Population Growth

Human populations are groups of people living in a particular location.

H-3: Types of Resources

Resources are things we get from the living and nonliving environment to meet the needs and wants of a population.

Some resources are basic materials, such as air, water, and soil; some are produced from basic resources, such as food, fuel, and building materials.

The supply of many resources is limited, but their availability can be extended through recycling and decreased use.

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H-4: Quality of and Changes in Environments

Environments are the space, conditions, and factors that affect an individual's and a population's ability to survive and their quality of life.

Changes in environments can be natural or influenced by humans. Some changes are good; and some, like pollution, can influence the health, survival, or activities of living things, including humans.

H-5: Science and Technology in Society

Science and technology have improved our food quality and quantity, transportation, health, sanitation, and communication; but these benefits are not equally available to all people in the world.