

NEW YORK STATE LEARNING STANDARD DOCUMENTS



Content Standard



SCIENCE (4)

Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.

NEW YORK STATE LEARNING STANDARDS

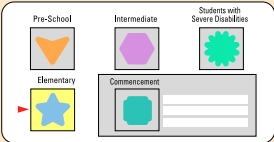
MATH SCIENCE & TECHNOLOGY



LEVEL: ★ Elementary

CORE GUIDE INFORMATION

KEY IDEAS



MAJOR UNDERSTANDINGS

RESOURCES (SKILLS)



GRADE LEVEL **K** 1 2 3 4 **K-4**

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MATH SCIENCE & TECHNOLOGY
Standard 4 - Science

SKILLS

GENERAL SKILLS

skill 1

follow safety procedures in the classroom, laboratory, and field

skill 2

safely and accurately use the following tools:

- hand lens
- ruler (metric)
- balance
- gram weights
- spring scale
- thermometer (C °, F °)
- measuring cups
- graduated cylinder
- timepiece(s)

skill 3

develop an appreciation of and respect for all learning environments (classroom, laboratory, field, etc.)

skill 4

manipulate materials through teacher direction and free discovery

skill 5

use information systems appropriately

skill 6

select appropriate standard and nonstandard measurement tools for measurement activities

skill 7

estimate, find, and communicate measurements, using standard and nonstandard units

skill 8

use and record appropriate units for measured or calculated values

skill 9

order and sequence objects and/or events

skill 10

classify objects according to an established scheme

skill 11

generate a scheme for classification

skill 12

utilize senses optimally for making observations

skill 13

observe, analyze, and report observations of objects and events

skill 14

observe, identify, and communicate patterns

skill 15

observe, identify, and communicate cause-and-effect relationships

skill 16

generate appropriate questions (teacher and student based) in response to observations, events, and other experiences

skill 17

observe, collect, organize, and appropriately record data, then accurately interpret results

skill 18

collect and organize data, choosing the appropriate representation:

- journal entries
- graphic representations
- drawings/pictorial representations

skill 19

make predictions based on prior experiences and/or information

skill 20

compare and contrast organisms/objects/events in the living and physical environments

skill 21

identify and control variables/factors

skill 22

plan, design, and implement a short-term and long-term investigation based on a student-or teacher-posed problem

skill 23

communicate procedures and conclusions through oral and written presentations

INQUIRY AND PROCESS

Classifying - arranging or distributing objects, events, or information representing objects or events in classes according to some method or system

Communicating - giving oral and written explanations or graphic representations of observations

Comparing and contrasting - identifying similarities and differences between or among objects, events, data, systems, etc.

Creating models - displaying information, using multisensory representations

Gathering and organizing data - collecting information about objects and events which illustrate a specific situation

Generalizing - drawing general conclusions from particulars

Identifying variables - recognizing the characteristics of objects or factors in events that are constant or change under different conditions

Inferring - drawing a conclusion based on prior experiences

Interpreting data - analyzing data that have been obtained and organized by determining apparent patterns or relationships in the data

Making decisions - identifying alternatives and choosing a course of action from among the alternatives after basing the judgment for the selection on justifiable reasons

Manipulating materials - handling or treating materials and equipment safely, skillfully, and effectively

Measuring - making quantitative observations by comparing to a conventional or nonconventional standard

Observing - becoming aware of an object or event by using any of the senses (or extensions of the senses) to identify properties

Predicting - making a forecast of future events or conditions expected to exist

Note: As an example, these processes are applied in the three key ideas in Standard 1, which outline scientific inquiry. Inquiry may proceed in a cyclical pattern, with students moving from Key Idea 1 to Key Idea 3 and back to 1 again.