NEW YORK STATE LEARNING STANDARD DOCUMENTS

ARTS CDOS ELA HPEF LOTE MST SS

Content Standard

1 2 3 4 5 6 7

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

Physical | Living

KEY IDEAS

4 1 2 3 4 5

4 1 2 3 4 5 6 7

LEVEL: Elementary

Pre-School | Intermediate | Students with Severe Disabilities | Elementary | Commencement

CORE GUIDE INFORMATION

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.

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Prepared by Jeff Arnold 3/04 Daemen College TLQP