GRADE 4
Overview of the Science Standards

I. PHYSICAL SCIENCE

- ***Electricity and magnetism are related effects that have many useful applications in everyday life.***

II. LIFE SCIENCES

- ***All organisms need energy and matter to live and grow.***

III. LIFE SCIENCES

- ***Living organisms depend on one another and on their environment for survival.***

IV. EARTH SCIENCES

- ***The properties of rocks and minerals reflect the processes that formed them.***

EARTH SCIENCES

- ***Waves, wind, water, and ice shape and reshape Earth's land surface.***

VI. INVESTIGATION AND EXPERIMENTATION

- ***Scientific progress is made by asking meaningful questions and conducting careful investigations.***

Aligning the Instructional Program with the Grade Level Standards and Benchmarks

In order to align the instructional program with the prescribed content standards for the grade, it is critical that the standards and their affiliated benchmarks are reviewed regularly so as to become very familiar with them. At the outset of each quarter/trimester an initial decision must be made as to which standards and benchmark proficiencies will be included in the instructional program. At the end of each quarter/trimester the teacher should fill out the **response section next to each benchmark**. This activity will serve as a checkpoint and will help gauge what still needs to be taught or what should be re-taught.

Complete the Response Section

ST/B = Standard and Benchmark **P:** Priority benchmark **Q:** Quarter 1 or 2 or 3 or 4

At the start of the quarter/trimester, select the benchmarks you consider to be your "priority benchmarks." Mark the box under the "P" code.

At the end of each quarter/trimester complete the response section **of the standard/benchmark listings, indicating to what extent students have mastered the benchmark.**

A: Fewer then 20% of the students are proficient	**B: About *half* (50%) of the students are proficient**	**C**: ***80%* or more of the students are proficient**

Sample Recording of the Response Form
GRADE 2

I. PHYSICAL SCIENCE

The motion of objects can be observed and measured. As a basis for understanding this concept, students in the SECOND GRADE will …

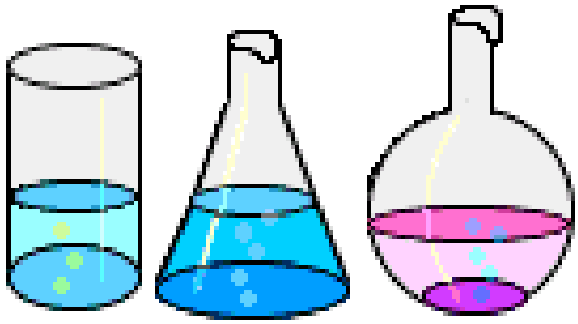
ST/B	**P**	**ST/B: Standard/Benchmark P: Priority Benchmark Degree of Mastery: % of students at end of each Q: Quarter A= 75% or more B=about half C=fewer than 25%**	**Q 1**	**Q 2**	**Q 3**	**Q 4**
ST1.A	P	*know* that the position of an object can be described by locating it in relation to another object or to the background.	A	B	B	C
ST1.B		*know* that an object's motion can be described by recording the change in position of the object over time.	A	A	B	B

GRADE 4
Science Standards and Benchmark Proficiencies

I. PHYSICAL SCIENCE

Electricity and magnetism are related effects that have many useful applications in everyday life. As a basis for understanding this concept, students in the FOURTH GRADE will …

ST/B	P	ST/B: Standard/Benchmark P: Priority Benchmark Degree of Mastery: % of students at end of each Q: Quarter A= 75% or more B=about half C=fewer than 25%	Q 1	Q 2	Q 3	Q 4
ST4.A		*know* that how to design and build simple series and parallel circuits by using components such as wires, batteries, and bulbs.				
ST4.B		*know* that how to build a simple compass and use it to detect magnetic effects, including earth's magnetic field.				
ST4.C		*know* that electric currents produce magnetic fields and know how to build a simple electromagnet.				
ST4.D		*know* that the role of electromagnets in the construction of electric motors, electric generators, and simple devices, such as doorbells and earphones.				
ST4.E		*know* that electrically charged objects attract or repel each other.				
ST4.F		*know* that magnets have two poles (north and south) and that like poles repel each other while unlike poles attract each other.				
ST4.G		*know* that electrical energy can be converted to heat, light, and motion.				



II. LIFE SCIENCES

All organisms need energy and matter to live and grow. As a basis for understanding this concept, students in the FOURTH GRADE will …

ST/B.	P	ST/B: Standard/Benchmark P: Priority Benchmark Degree of Mastery: % of students at end of each Q: Quarter A= 75% or more B=about half C=fewer than 25%	Q 1	Q 2	Q 3	Q 4
ST2.A		*know* that plants are the primary source of matter and energy entering most food chains.				
ST2.B		*know* that producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.				
ST2.C		*know* that decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.				
ST2.D		*know* that most micro-organisms do not cause disease and that many are beneficial.				

III. LIFE SCIENCES

Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept, students in the FOURTH GRADE will …

ST/B.	P	ST/B: Standard/Benchmark P: Priority Benchmark Degree of Mastery: % of students at end of each Q: Quarter A= 75% or more B=about half C=fewer than 25%	Q 1	Q 2	Q 3	Q 4
ST3.A		*know* that ecosystems can be characterized by their living and nonliving components.				
ST3.B		*know* that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.				
ST3.C		*know* that many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.				
ST3.D		*know* that most microorganisms do not cause disease and that many are beneficial.				

IV. EARTH SCIENCES

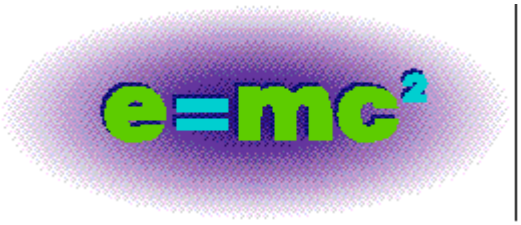
The properties of rocks and minerals reflect the processes that formed them. As a basis for understanding this concept, students in the FOURTH GRADE will..

ST/B	P	ST/B: Standard/Benchmark P: Priority Benchmark Degree of Mastery: % of students at end of each Q: Quarter A= 75% or more B=about half C=fewer than 25%	Q 1	Q 2	Q 3	Q 4
ST4A		*know* that how to differentiate among igneous, sedimentary, and metamorphic rocks by referring to their properties and methods of formation (the rock cycle).				
ST4B		*know* how to identify common rock-forming minerals (including quartz, calcite, feldspar, mica, and hornblende) and ore minerals by using a table of diagnostic properties.				

V. EARTH SCIENCES

Waves, wind, water, and ice shape and reshape Earth's land surface. As a basis for understanding this concept, students in the FOURTH GRADE will …

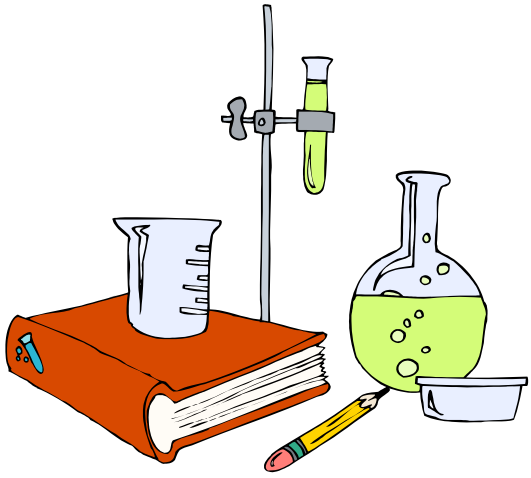
ST/B	P	ST/B: Standard/Benchmark P: Priority Benchmark Degree of Mastery: % of students at end of each Q: Quarter A= 75% or more B=about half C=fewer than 25%	Q 1	Q 2	Q 3	Q 4
ST5.A		*know* that some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.				
ST5.B		*know* that natural processes, including freezing and thawing and the growth of roots, cause rocks to break down into smaller pieces.				
ST5.C		*know* that moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).				



VI. INVESTIGATION AND EXPERIMENTATION

Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students in the FOURTH GRADE will …

ST/B.	P	ST/B: Standard/Benchmark P: Priority Benchmark Degree of Mastery: % of students at end of each Q: Quarter A= 75% or more B=about half C=fewer than 25%	Q 1	Q 2	Q 4	Q 4
ST6.A		*differentiate* observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.				
ST6.B		*measure* and estimate the weight, length, or volume of objects.				
ST6.C		*formulate* and *justify* predictions based on cause-and-effect relationships.				
ST6.D		*conduct* multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.				
ST6.E		*construct* and interpret graphs from measurements.				
ST6.F		*follow* a set of written instructions for a scientific investigation.				



GRADE FOUR
Standards Based Vocabulary for Science

Physical Sciences

attract	circuit	closed path
compass	electrode	electromagnetic field
open path	parallel	repel
series	magnetic pole	

Life Sciences

biome	carnivore	consumer
decomposer	decomposition	dispersal
food web	herbivore	inorganic
microorganism	omnivore	organic
pollination	producer	

Earth Sciences

deposition	earthquake	erosion
glacier	igneous	landform
metamorphic	mineral	moraine
salinity	sedimentary	volcano
weathering		