A Correlation of the New Mexico *Science Content Standards with Benchmarks* and the *Science and Technology for Children*™ Curriculum

Prepared by Carolina Biological Supply Company

The following tables are provided to give a quick visual guide to the correlation of the New Mexico *Science Content Standards with Benchmarks* to the individual *Science and Technology for Children* ™ (STC™) units of study. Since there is some flexibility in the grade level use, we have included STC units for grades 1-5 under the Benchmarks K-4 headings and STC units for grades 4-6 under the Benchmarks 5-8 headings.

Key to Abbreviations of STC Units

O	Organisms	PGD	Plant Growth and Development	Mw	Microworlds
W	Weather	RM	Rocks and Minerals	E	Ecosystems
SL	Solids and Liquids	CT	Chemical Tests	FC	Food Chemistry
CM	Comparing and Measuring	So	Sound	FS	Floating and Sinking
LCB	The Life Cycle of Butterflies	AS	Animal Studies	EP	Experiments with Plants
S	Soils	LW	Land and Water	MT	Measuring Time
C	Changes	MD	Motion and Design	TP	The Technology of Paper
BW	Balancing and Weighing	EC	Electric Circuits	MM	Magnets and Motors

UNIFYING CONCEPTS AND PROCESSES

STANDARD 1: students will understand science concepts of order and organization

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
demonstrate knowledge and understanding that science is based on the assumption that the environment is understandable and predictable	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
demonstrate an understanding of prediction and its uses	W, SL, CM, LCB, S, C, BW, PGD, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
apply information about the predictability and organization of the universe and its subsystems	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
apply prediction to scientific problems and events	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM

STANDARD 2: students will use evidence, models, and explanations to explore the physical world

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
use evidence to understand interactions that allow prediction of changes in natural and artificial systems	W, SL, CM, LCB, S, C, BW, PGD, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
describe different terms such as hypothesis, model, law, theory, principle, and paradigm	W, LCB, PGD, AS, LW, MD, E, FS
recognize models as representations of real objects and events, and explain how the models work	W, LCB, PGD, AS, LW, MD, E, FS
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
identify and organize evidence needed to predict changes in natural and artificial systems	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
organize phenomena into hypothesis, models, laws, theories, principles, and paradigms	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
design and develop models	AS, LW, MD, EC, E, FS, EP, MT, TP, MM

STANDARD 3: students will use form and function to organize and understand the physical world

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
describe form and function as complementary aspects of units of matter, objects, organisms, and systems	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
explain function by referring to form and explain form by referring to function	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM

STANDARD 4: students will understand the physical world through the concepts of change, equilibrium, and measurement

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
describe change and constancy as properties of objects and processes	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
describe energy and matter, and explain the processes that transform energy and matter	W, SL, CM, S, C, BW, RM, CT, So, LW, MD, EC, FC, FS
use simple devices to measure objects and change	W, SL, CM, S, C, BW, PGD, RM, CT, So, LW, MD, Mw, E, FC, FS
employ basic mathematics as a tool to quantify properties of objects and change	W, CM, LCB, C, BW, PGD, So, AS, LW, MD, Mw, E, FS
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
illustrate that constancy and change are properties of objects and processes	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
illustrate that energy and matter can be transformed and changed but the sum remains the same	LW, MD, EC, MT, MM
use elementary scientific devices to measure objects and simple phenomena	LW, MD, Mw, E, FS, EP, MT, TP, MM
employ mathematics to quantify properties of objects and phenomena	AS, LW, MD, Mw, E, FS, EP, MT, TP, MM
relate the contributions of external and internal forces to change in the form and function of objects, organisms, and natural systems	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM

SCIENCE AS INQUIRY

STANDARD 5: students will acquire the abilities to do scientific inquiry

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
describe the scientific method* etc.	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
describe and use simple equipment, tools, techniques, and a variety of information sources to gather data and extend the senses	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
use the scientific method* within the classroom and school environment	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
employ equipment, tools, a variety of techniques and information sources to gather, analyze, and interpret data	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM

*We have interpreted this to include all scientific methods. However, if it is intended to refer to experimental methods *only*, students in the STC curriculum design and carry out scientific experiments in the following units: AS, LW, MD, E, EP, MT, TP, MM.

STANDARD 6: students will understand the process of scientific inquiry

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
describe the different methods used in the process of scientific investigation for etc.	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
explain that scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge)	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
explain that scientists review and ask questions about the results of other scientists' work	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
explain that scientists use different kinds of investigations depending upon the questions they are trying to answer	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
explain that instruments can provide more information than scientists can obtain using only their senses	O, W, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, Mw, E, FC, FS
explain that scientists make the results of their investigations public in ways that allow others to replicate their findings	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS

STANDARD 6 (continued)

BENCHMARKS 5-8 STUDENTS WILL	MATCHING STC UNITS
use different kinds of methods, including observation, experiments, and theoretical and mathematical models to answer a variety of scientific questions	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
use their own understanding of science to guide their scientific investigations	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
use criteria for sound scientific investigations to verify the truth of the results of their own and others' investigations	AS, LW, MD, E, FS, EP, MT, TP, MM
choose appropriate methods and analytic techniques for specific science problems and investigations	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
use technology and scientific methods to gather evidence to enhance the accuracy of their findings	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
describe the results of investigations with teachers, peers, parents, and others	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
explain that scientific investigations can result in new ideas, objects, methods, techniques, and procedures for investigation	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
explain that in areas where there is not a great deal of experimental or observational evidence, it is typical for scientists to differ with one another about the theory, hypothesis, or evidence being investigated	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM

PHYSICAL SCIENCE

STANDARD 7: students will know and understand the properties of matter

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
describe the observable properties of objects and materials	W, SL, CM, S, C, BW, RM, CT, LW, MD, EC, Mw, FC, FS
explain that elements are the basic units of all matter	
BENCHMARKS 5-8 STUDENTS WILL	
identify the characteristic properties of elements and compounds such as density, boiling point, and solubility	FC, FS, TP
explain that the characteristic properties of an element or compound are independent of the amount (size) of the sample	
discriminate between elements based on the characteristic ways in which they react with other elements to form compounds that are different substances with unique characteristic properties	

STANDARD 8: students will know and understand the properties of fields, forces, and motion

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS

explain how the position of an object can be described by locating it relative to another object or the background	W, SL, CM, S, BW, LW, MD, FS
explain that an object's motion can be described by indicating the change in its position over time	SL, MD
describe how Earth's gravity pulls objects toward it	SL, BW, LW, MD, FS
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
explain that when an object is not being subjected to a force, the object will continue to move at a constant speed and in a straight line	MD
describe quantitatively how an object's position, speed, and direction explain motion	MD
compare and contrast gravity to other forces in the world and universe	

STANDARD 9: students will know and understand the properties of fields, forces, and motion

BENCHMARKS K-4 STUDENTS WILL	**MATCHING STC UNITS**
describe the basic characteristics of light, heat, sound, and electro-magnetism, and explain that energy exists in many forms and can be transformed	W, So, LW, MD, EC
describe the process of chemical reactions and how time is a factor in chemical reactions	C, CT, FC
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
apply knowledge about energy and energy transformation to science problems	MD, EC, MM
explain how chemical reactions can take place in time periods ranging from less than a second to millions of years	E, FC, (RM: 3rd grade unit)
explain how chemical reactions involve concentration, pressure, temperature, and catalysts	

LIFE SCIENCE

STANDARD 10: students will know and understand the characteristics that are the basis for classifying organisms

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
demonstrate awareness of living things, etc.	O, LCB, S, PGD, AS, Mw, E
describe life cycles of plants and animals	LCB, PGD
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
use information about living things including, etc.	Mw
categorize organisms according to reproductive and other characteristics	AS, E, EP

STANDARD 11: students will know and understand the synergy among organisms and the environments of organisms

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
explain how an organism's patterns of behavior are related to its environment	O, LCB, AS, E
describe how all animals depend on plants for food either directly or indirectly	O, LCB, AS, E
describe how organisms cause changes in their environments	AS, E
describe a population	AS, E
describe an ecosystem	O, E
describe the impact humans have on other species	E
describe various kinds of resources such as food, fuel, building materials	S, RM, E
describe features of resources such as the fact that nonrenewable resources are limited	S, RM, E
describe basic human needs including air, food, water, safety, and security	S, E, FC
identify issues of responsibility for health	W, FC
describe the elements essential to good health	FC
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
distinguish among organisms based on the way an organism regulates its internal environment in relation to changes in its external environment	
describe how organisms obtain and use resources, grow, reproduce, and maintain a stable internal environment while living in a constantly changing external environment	AS, E
predict behavior in relation to changes in an organism's internal and external environments	AS

STANDARD 11 (continued)

BENCHMARKS 5-8 STUDENTS WILL	MATCHING STC UNITS
use knowledge of population characteristics to distinguish specific populations	
categorize organisms based on the function they serve within their ecosystem	AS, E
examine the impact humans have had on other species and natural systems over time	LW, E
illustrate the impact that overpopulation might have on various regions of the world	E
analyze consumption of nonrenewable resources based on population factors (birth rate, death rate, and density)	E
illustrate the role of personal control of basic needs on health outcomes	FC
model responsible health behaviors for peers and others	FC
demonstrate the impact of nutrition and exercise on personal health	FC

EARTH AND SPACE SCIENCE

STANDARD 12: students will know and understand properties of Earth Science

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
describe the physical and chemical properties of Earth's materials and the states of matter (solid, liquid, gas, and plasma)	W, SL, S, C, RM, CT, LW, FS
describe the uses of Earth's materials as resources and the sun as the major source of external energy for the Earth	W, S, RM, LW, E
describe changes in Earth's surface	RM, LW
describe weather changes that occur daily	W
recognize that fossils provide a record of animals and plants that lived long ago and evidence about the nature of the environment at that time	
use symbols and maps to represent the school and local community	
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
distinguish among organisms based on the way an organism regulates its internal environment in relation to changes in its external environment	
describe how organisms obtain and use resources, grow, reproduce, and maintain a stable internal environment while living in a constantly changing external environment	AS, E, EP

STANDARD 12 (continued)

BENCHMARKS 5-8 STUDENTS WILL	MATCHING STC UNITS
predict behavior in relation to changes in an organism's internal and external environments	AS
use knowledge of population characteristics to distinguish specific populations	
categorize organisms based on the function they serve within their ecosystem	AS, E
examine the impact humans have had on other species and natural systems over time	LW, E
illustrate the impact that overpopulation might have on various regions of the world	E
analyze consumption of nonrenewable resources based on population factors (birth rate, death rate, and density)	E
illustrate the role of personal control of basic needs on health outcomes	FC
model responsible health behaviors for peers and others	FC
demonstrate the impact of nutrition and exercise on personal health	FC

STANDARD 13: students will know and understand basic concepts of cosmology

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
describe the patterns of movement of objects in the sky	W, (MT: 6th grade unit)
describe the composition of the solar system including the sun, planets, moons, asteroids, and comets and Earth's position in this system	
identify the types of instruments and vehicles used for space exploration	
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
model the predictable patterns of the sun and planets in the solar system	MT
describe the elements of the universe including stars, galaxies, dust clouds, and nebulae	
explain various scientific theories for the origin of the universe	
explain how instruments and vehicles are used for space exploration work	

TECHNOLOGY AND THE HISTORY OF SCIENCE

STANDARD 14: students will know and understand the differences between and the interactions of science and technology

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
discriminate between natural objects and artificial objects	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
explain that science is one of many ways of posing solutions to questions about the natural world	
describe the kinds of problems people have solved through scientific investigations	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
identify the contributions of technology such as computers and telecommunication to scientific investigations	
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
design and conduct experiments that distinguish between natural and artificial objects and materials	AS, LW, MD, EC, Mw, E, FC, FS, EP, MT, TP, MM
demonstrate trade-offs in safety, cost, efficiency, and appearance related to technological solutions provided through science	LW, MD, E, TP
compare and contrast a variety of scientific and technological solutions to problems	LW, MD, E, MT, TP, MM
examine the role of technology, particularly computers and other electronical [sic] advances, in the advancement of science	MD, EC, TP, MM

STANDARD 15: students will know and understand the impact between science and technology in society

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
describe science as a social enterprise that includes a variety of work settings	W, PGD, Mw, E, FS
describe the relationships between social issues and challenges as they relate to science	PGD, RM, LW, E, FC, (TP: 6TH grade unit)
list some outcomes of scientific and technological investigations for society in terms of transportation, health, sanitation, and communication	W, S, MD, EC, E, FC, FS
describe the types of contributions made through science and technology	O, W, SL, CM, LCB, S, C, BW, PGD, RM, CT, So, AS, LW, MD, EC, Mw, E, FC, FS
identify science questions and problems that have not been answered	AS, LW, MD, E
describe science careers and reasons why people choose science as a career	W, PGD
define ethics in science	

STANDARD 15 (continued)

BENCHMARKS 5-8 STUDENTS WILL	MATCHING STC UNITS
illustrate the impact that work settings have on scientific investigations	
demonstrate how the direction for scientific investigations is related to social issues and challenges	MD, E, TP
explain how the benefits of science and technology are enjoyed by some groups and not by other groups	
compare and contrast the science contributions of people with diverse interests, talents, qualities, and motivations from a variety of social and ethnic backgrounds	Mw, FS, MT, TP, MM
predict new areas of scientific inquiry based on previous research	EP, TP, MM
analyze the impact of culture, gender, and other factors on an individual's choice of science as a career	
differentiate between ethical and unethical scientific practices and research	

STANDARD 16: students will know and understand the relationship between natural hazards and the environmental risks for organisms

BENCHMARKS K-4 STUDENTS WILL	MATCHING STC UNITS
identify environmental risks including natural hazards related to internal and external processes of Earth's systems (weather, geochemical) and social hazards (occupational, recreational, and personal)	W, LW, E
describe methods to reduce environmental risks	S, LW, E
identify factors that change environments rapidly and slowly	W, RM, LW, E
describe factors such as drugs, disease, and environmental hazards that can have negative health consequences	W, LW, E
BENCHMARKS 5-8 STUDENTS WILL	**MATCHING STC UNITS**
analyze environmental risks for personal and social costs	LW, E, TP
determine options for reducing and eliminating environmental risks and for coping with natural catastrophic events	LW, E, TP
predict the human and financial cost of slow natural events such as drought and rapid natural events such as earthquakes	E
develop models for prevention of substance abuse including tobacco, alcohol and other drugs, and to reduce the associated environmental risks	