STATE GOALS/STANDARDS/BENCHMARKS--LOCAL GOALS/OUTCOMES/OBJECTIVES LINKING ORGANIZER

EARLY ELEMENTARY

KEY
2Indicates Strong Link
1Indicates Moderate Link
0Indicates No Link

	STATE GOALS/	LOCAL GOALS/	2	1	0
	STANDARDS/BENCHMARKS	OUTCOMES/OBJECTIVES	ļ		ļ
	Understand the processes of scientific				
	and technological design to investigate				
	ns, conduct experiments and solve				
problem					
	ow and apply the concepts, principles				
	d processes of scientific inquiry.				
	Describe an observed event.				
11.A.1b	Develop questions on scientific topics.				
11.A.1c	Collect data for investigations using				
	measuring instruments and technologies.				
11.A.1d	Record and store data using available				
	technologies.				
11.A.1e					
	describe the patterns.				
11.A.1f	Compare observations of individual and				
	group results.				
	ow and apply the concepts, principles				
	d processes of technological design.				
11.B.1a	Given a simple design problem, formulate				
	possible solutions.				
11.B.1b	Design a device that will be useful in				
	solving the problem.				
11.B.1c	Build the device using the materials and				
	tools provided.				
11.B.1d	Test the device and record results using				
	given instruments, techniques and				
44 D 4	measurement methods.				
11.B.1e	Report the design of the device, the test				
	process and the results in solving a given problem.				
Cool 42	: Understand the fundamental concepts,				
	es and interconnections of the life,				
	I and earth/space sciences.				
	ow and apply concepts that explain how				
	ing things function, adapt and change. Identify and describe the component parts				
12.A.1a	of living things (e.g., birds have feathers;				
	people have bones, blood, hair, skin) and				
	their major functions.				
12.A.1b	Categorize living organisms using a variety				
12.7.10	of observable features (e.g., size, color,				
	shape, backbone).				
B. Kn	ow and apply concepts that describe how				
	ing things interact with each other and				
	th their environment.				
12.B.1a	Describe and compare characteristics of				
.2.2.10	living things in relationship to their				
	environments.				
				1	1

	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
12.B.	1b Describe how living things depend on one another for survival.				
C.	Know and apply concepts that describe				
	properties of matter and energy and the				
	interactions between them.				
	1a Identify and compare sources of energy				
12.0.	(e.g., batteries, the sun).				
12 C	1b Compare large-scale physical properties of				
	matter (e.g., size, shape, color, texture, odor).				
D.	Know and apply concepts that describe				
	force and motion and the principles that				
	explain them.				
	1a Identify examples of motion (e.g., moving				
12.0.	in a straight line, vibrating, rotating).				
12.D.					
	pushes, pulls, gravity, magnetism).				
E.	Know and apply concepts that describe the				
	features and processes of the Earth and its				
	resources.				
12.E.	1a Identify components and describe diverse				
	features of the Earth's land, water and				
	atmospheric systems.				
12.E.					
	and seasonal change.				
12.E.					
	natural resources.				
F.	Know and apply concepts that explain the				
	composition and structure of the universe				
	and Earth's place in it.				
12.F.					
	sun, Earth and moon as familiar objects in				
12.F.	the solar system.				
1Z.F.	1b Identify daily, seasonal and annual patterns related to the Earth's rotation and				
	revolution.				
Goal	13: Understand the relationships among				
	nce, technology and society in historical and				
	emporary contexts.				
	Know and apply the accepted practices of				
	science.				
13.A.					
1J.A.	materials without permission,				
	"stop/drop/roll").				
13.A.					
. 5.7 (.	when procedures are done the same way.				
13.A.					
	careful observation.				
В.	Know and apply concepts that describe the				
	interaction between science, technology and				
	society.				
13.B.	•				
	instruments (e.g., ruler, thermometer,				
	balance, probe, computer).				

	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
13.B.1b	Explain how using measuring tools improves the accuracy of estimates.				
13.B.1c	Describe contributions men and women have made to science and technology.				
13.B.1d	Identify and describe ways that science and technology affect people's everyday lives (e.g., transportation, medicine, agriculture, sanitation, communication occupations).				
13.B.1e	Demonstrate ways to reduce, reuse and recycle materials.				

STATE GOALS/STANDARDS/BENCHMARKS--LOCAL GOALS/OUTCOMES/OBJECTIVES LINKING ORGANIZER

LATE ELEMENTARY

KEY
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	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
Goal 11:	Understand the processes of scientific	OUTCOMES/OBJECTIVES			
	and technological designto investigate				
	ns, conduct experiments and solve				
problem	•				
•	ow and apply the concepts, principles				
	d processes of scientific inquiry.				
	Formulate questions on a specific science				
	topic and choose the steps needed to				
	answer the questions.				
11.A.2b	Collect data for investigations using				
	scientific process skills including observing,				
	estimating and measuring.				
11.A.2c	Construct charts and visualizations to				
44.4.6.1	display data.				
11.A.2d	Use data to produce reasonable				
11.A.2e	explanations. Report and display the results of individual				
11.A.Ze	and group investigations.				
B. Kn	ow and apply the concepts, principles				
	d processes of technological design.				
11.B.2a	Identify a design problem and propose				
	possible solutions.				
11.B.2b	Develop a plan, design and procedure to				
	address the problem identifying constraints				
	(e.g., time, materials, technology).				
11.B.2c	Build a prototype of the design using				
	available tools and materials.				
11.B.2d	Test the prototype using suitable				
	instruments, techniques and quantitative				
11.B.2e	measurements to record data. Assess test results and the effectiveness of				
11.b.ze	the design using given criteria and noting				
	possible sources of error.				
11.B.2f	Report test design, test process and test				
11.5.2	results.				
Goal 12:	Understand the fundamental concepts,				
	es and interconnections of the life,				
	and earth/space sciences.				
A. Kn	ow and apply concepts that explain how				
	ng things function, adapt and change.				
12.A.2a	Describe simple life cycles of plants and				
	animals and the similarities and differences				
	in their offspring.				
12.A.2b	Categorize features as either inherited or				
	learned (e.g., flower color or eye color is				
	inherited; language is learned).		j	j .	

	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
B.	Know and apply concepts that describe how				
	living things interact with each other and				
	with their environment.				
12.B.	i S				
	organisms in their environments (e.g., predator/prey, parasite/host, food chains				
	and food webs).				
12.B.	,				
12.0.	animals that help them live in different				
	environments (e.g., specialized teeth for				
	eating certain foods, thorns for protection,				
	insulation for cold temperature).				
C.	Know and apply concepts that describe				
	properties of matter and energy and the				
	interactions between them.				
12.C.	2a Describe and compare types of energy				
	including light, heat, sound, electrical and				
	mechanical.				
12.C.	2b Describe and explain the properties of				
	solids, liquids and gases.				
D.	Know and apply concepts that describe				
	force and motion and the principles that explain them.				
12.D.	•				
12.0.	motions.				
12.D.					
12.0.	cause actions and reactions (e.g., magnets				
	attracting and repelling; objects falling,				
	rolling and bouncing).				
E.	Know and apply concepts that describe the				
	features and processes of the Earth and its				
	resources.				
12.E.	, ,				
	Earth's land, water and atmospheric				
	systems (e.g., rock cycle, water cycle,				
40.5	weather patterns).		1	1	
12.E.					
	term interactions of the Earth's components (e.g., earthquakes, types of erosion).				
12.E.				+	
F.	Know and apply concepts that explain the			+	
1	composition and structure of the universe				
	and Earth's place in it.				
12.F.			1	1	
	patterns in the solar system (e.g., order of				
	the planets; moon phases; seasons as				
	related to Earth's tilt, one's latitude, and				
	where Earth is in its yearly orbit around the				
	sun).		1	1	
12.F.	• • • • • • • • • • • • • • • • • • • •				
10-	stars.			1	
12.F.	, , , , ,				
	(e.g., the Big Dipper, constellations).				

	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
science	Understand the relationships among technology and society in historical and corary contexts.				
	ow and apply the accepted practices of ence.				
13.A.2a					
13.A.2b					
13.A.2c					
int	ow and apply concepts that describe the eraction between science, technology and ciety.				
13.B.2a	Explain how technology is used in science for a variety of purposes (e.g., sample collection, storage and treatment; measurement; data collection, storage and retrieval; communication of information).				
13.B.2b					
13.B.2c	Identify and explain ways that science and technology influence the lives and careers of people.				
13.B.2d	Compare the relative effectiveness of reducing, reusing and recycling in actual situations.				
13.B.2e	Identify and explain ways that technology changes ecosystems (e.g., dams, highways, buildings, communication networks, power plants).				
13.B.2f	Analyze how specific personal and societal choices that humans make affect local, regional and global ecosystems (e.g., lawn and garden care, mass transit).				

MIDDLE/JUNIOR HIGH SCHOOL

STATE GOALS/STANDARDS/BENCHMARKS--LOCAL GOALS/OUTCOMES/OBJECTIVES LINKING ORGANIZER

KEY
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0Indicates No Link

	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
inquiry a	Understand the processes of scientific and technological design to investigate as, conduct experiments and solve s.				
A. Kn	ow and apply the concepts, principles				
	and processes of scientific inquiry.				
11.A.3a	Formulate hypotheses that can be tested by collecting data.				
11.A.3b	Conduct scientific experiments that control all but one variable.				
11.A.3c	Collect and record data accurately using consistent measuring and recording techniques and media.				
11.A.3d	Explain the existence of unexpected results in a data set.				
11.A.3e	Use data manipulation tools and quantitative (e.g., mean, mode, simple equations) and representational methods (e.g., simulations, image processing) to analyze measurements.				
11.A.3f	Interpret and represent results of analysis to produce findings.				
11.A.3g	Report and display the process and results of a scientific investigation.				
B. Kn	ow and apply the concepts, principles				
	d processes of technological design.				
11.B.3a	Identify an actual design problem and establish criteria for determining the success of a solution.				
11.B.3b	Sketch, propose and compare design solutions to the problem considering available materials, tools, cost effectiveness and safety.				
11.B.3c	Select the most appropriate design and build a prototype or simulation.				
11.B.3d	Test the prototype using available materials, instruments and technology and record the data.				
11.B.3e	Evaluate the test results based on established criteria, note sources of error and recommend improvements.				
11.B.3f	Using available technology, report the relative success of the design based on the test results and criteria.				

	STATE GOALS/	LOCAL GOALS/	2	1	0
	STANDARDS/BENCHMARKS	OUTCOMES/OBJECTIVES			
	Understand the fundamental concepts,				
	es and interconnections of the life,				
	and earth/space sciences.				
	ow and apply concepts that explain how				
	ng things function, adapt and change.				
12.A.3a	Explain how cells function as "building				
	blocks" of organisms and describe the				
12.A.3b	requirements for cells to live. Compare characteristics of organisms				
12.7.30	produced from a single parent with those of				
	organisms produced by two parents.				
12.A.3c	Compare and contrast how different forms				
	and structures reflect different functions				
	(e.g., similarities and differences among				
	animals that fly, walk or swim; structures of				
	plant cells and animal cells).				
	ow and apply concepts that describe how				
	ng things interact with each other and				
	h their environment.				
12.B.3a	Identify and classify biotic and abiotic				
	factors in an environment that affect				
	population density, habitat and placement				
12.B.3b	of organisms in an energy pyramid. Compare and assess features of organisms				
12.0.30	for their adaptive, competitive and survival				
	potential (e.g., appendages, reproductive				
	rates, camouflage, defensive structures).				
C. Kn	ow and apply concepts that describe				
	operties of matter and energy and the				
•	eractions between them.				
12.C.3a	Explain interactions of energy with matter				
	including changes of state and conservation				
	of mass and energy.				
12.C.3b	Model and describe the chemical and				
	physical characteristics of matter (e.g.,				
	atoms, molecules, elements, compounds,				
D 1/10	mixtures).				
	ow and apply concepts that describe ce and motion and the principles that				
	plain them.				
12.D.3a	Explain and demonstrate how forces affect				
12.0.00	motion (e.g., action/reaction, equilibrium				
	conditions, free-falling objects).				
12.D.3b	Explain the factors that affect the				
	gravitational forces on objects (e.g.,				
	changes in mass, distance).				
	ow and apply concepts that describe the				
	tures and processes of the Earth and its				
	ources.				
12.E.3a	Analyze and explain large-scale dynamic				
	forces, events and processes that affect the				
	Earth's land, water and atmospheric				
	systems (e.g., jetstream, hurricanes, plate				

	STATE GOALS/	LOCAL GOALS/	2	1	0
	STANDARDS/BENCHMARKS	OUTCOMES/OBJECTIVES			
			•		
12.E.3b	Describe interactions between solid earth,				
	oceans, atmosphere and organisms that				
	have resulted in ongoing changes of Earth				
	(e.g., erosion, El Nino).				
12.E.3c	Evaluate the biodegradability of renewable				
	and nonrenewable natural resources.				
	ow and apply concepts that explain the				
	mposition and structure of the universe				
	d Earth's place in it.				
12.F.3a	, , ,				
	gravitational force in the solar system (e.g.,				
	orbital shape and speed, tides, spherical				
10 F 2h	shape of the planets and moons).				
12.F.3b	Describe the organization and physical characteristics of the solar system (e.g.,				
	sun, planets, satellites, asteroids, comets).				
12.F.3c	Compare and contrast the sun as a star with			1	
12.1 .00	other objects in the Milky Way Galaxy (e.g.,				
	nebulae, dust clouds, stars, black holes).				
Goal 13:	Understand the relationships among				
	technology and society in historical and				
	porary contexts.				
	ow and apply the accepted practices of				
	ence.				
13.A.3a	Identify and reduce potential hazards in				
	science activities (e.g., ventilation, handling				
	chemicals).				
13.A.3b	Analyze historical and contemporary cases				
	in which the work of science has been				
	affected by both valid and biased scientific				
	practices.				
13.A.3c	Explain what is similar and different about				
	observational and experimental				
D 16:	investigations.				
	ow and apply concepts that describe the				
	eraction between science, technology and				
13.B.3a	ciety. Identify and explain ways that scientific				
13.0.38	knowledge and economics drive				
	technological development.				
13.B.3b	Identify important contributions to science				
10.5.00	and technology that have been made by				
	individuals and groups from various				
	cultures.				
13.B.3c	Describe how occupations use scientific and				
	technological knowledge and skills.				
13.B.3d	Analyze the interaction of resource				
	acquisition, technological development and				
	ecosystem impact (e.g., diamond, coal or				
	gold mining; deforestation).				
13.B.3e	Identify advantages and disadvantages of				
	natural resource conservation and				
	management programs.			1	

	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
13.B.3f	Apply classroom-developed criteria to determine the effects of policies on local science and technology issues (e.g., energy consumption, landfills, water quality).				

STATE GOALS/STANDARDS/BENCHMARKS--LOCAL GOALS/OUTCOMES/OBJECTIVES LINKING ORGANIZER

EARLY HIGH SCHOOL

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	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
inquiry a	Understand the processes of scientific and technological design to investigate as, conduct experiments and solve				
	ow and apply the concepts, principles				
	d processes of scientific inquiry.				
11.A.4a	Formulate hypotheses referencing prior				
11.A.4b	research and knowledge. Conduct controlled experiments or				
11.4.40	simulations to test hypotheses.				
11.A.4c	Collect, organize and analyze data				
	accurately and precisely.				
11.A.4d	Apply statistical methods to the data to				
	reach and support conclusions.				
11.A.4e	Formulate alternative hypotheses to explain				
	unexpected results.				
11.A.4f	Using available technology, report, display				
	and defend to an audience conclusions				
D 16:	drawn from investigations.				
	ow and apply the concepts, principles				
11.B.4a	d processes of technological design. Identify a technological design problem				
11.D.4a	inherent in a commonly used product.				
11.B.4b	Propose and compare different solution				
11.0.40	designs to the design problem based upon				
	given constraints including available tools,				
	materials and time.				
11.B.4c	Develop working visualizations of the				
	proposed solution designs (e.g., blueprints,				
	schematics, flowcharts, cad-cam,				
44 D 41	animations).				
11.B.4d	Determine the criteria upon which the				
	designs will be judged, identify advantages and disadvantages of the designs and				
	select the most promising design.				
11.B.4e	Develop and test a prototype or simulation			1	
5. 10	of the solution design using available				
	materials, instruments and technology.				
11.B.4f	Evaluate the test results based on				
	established criteria, note sources of error				
	and recommend improvements.				
11.B.4g	Using available technology, report to an				
	audience the relative success of the design				
	based on the test results and criteria.				

	STATE GOALS/	LOCAL GOALS/	2	1	0
	STANDARDS/BENCHMARKS	OUTCOMES/OBJECTIVES			
Coal 12	Understand the fundamental concents				
	Understand the fundamental concepts, es and interconnections of the life,				
	and earth/space sciences.				
	ow and apply concepts that explain how				
	ng things function, adapt and change.				
12.A.4a	Explain how genetic combinations produce				
	visible effects and variations among				
	physical features and cellular functions of				
	organisms.				
12.A.4b	Describe the structures and organization of				
	cells and tissues that underlie basic life				
	functions including nutrition, respiration, cellular transport, biosynthesis and				
	reproduction.				
12.A.4c	Describe processes by which organisms				
	change over time using evidence from				
	comparative anatomy and physiology,				
	embryology, the fossil record, genetics and				
-	biochemistry.				
	ow and apply concepts that describe how				
	ng things interact with each other and high their environment.				
12.B.4a	Compare physical, ecological and				
12.5.14	behavioral factors that influence				
	interactions and interdependence of				
	organisms.				
12.B.4b	Simulate and analyze factors that influence				
	the size and stability of populations within				
	ecosystems (e.g., birth rate, death rate,				
C. Kno	predation, migration patterns). ow and apply concepts that describe				
	perties of matter and energy and the				
•	eractions between them.				
12.C.4a	Use kinetic theory, wave theory, quantum				
	theory and the laws of thermodynamics to				
	explain energy transformations.				
12.C.4b	Analyze and explain the atomic and nuclear				
D 1/10	structure of matter.				
	ow and apply concepts that describe ce and motion and the principles that				
	plain them.				
	Explain and predict motions in inertial and				
	accelerated frames of reference.				
12.D.4b	Describe the effects of electromagnetic and				
	nuclear forces including atomic and				
	molecular bonding, capacitance and nuclear				
E. Kno	reactions.				
	ow and apply concepts that describe the tures and processes of the Earth and its				
	ources.				
12.E.4a	Explain how external and internal energy				
	sources drive Earth processes (e.g., solar				
	energy drives weather patterns; internal				
	heat drives plate tectonics).				

	STATE GOALS/	LOCAL GOALS/	2	1	0
	STANDARDS/BENCHMARKS	OUTCOMES/OBJECTIVES			
40 F 4b	Describe how well as a consequence and family	I	1	1	1
12.E.4b	Describe how rock sequences and fossil remains are used to interpret the age and				
	changes in the Earth.				
F. Kn	ow and apply concepts that explain the				
	mposition and structure of the universe				
	d Earth's place in it.				
	Explain theories, past and present, for				
	changes observed in the universe.				
12.F.4b	Describe and compare the chemical and				
	physical characteristics of galaxies and				
	objects within galaxies (e.g., pulsars,				
	nebulae, black holes, dark matter, stars).				
	Understand the relationships among				
	technology and society in historical and				
	porary contexts.				
	ow and apply the accepted practices of				
	ence.				
13.A.4a	Estimate and suggest ways to reduce the				
13.A.4b	degree of risk involved in science activities. Assess the validity of scientific data by				
13.A.40	analyzing the results, sample set, sample				
	size, similar previous experimentation,				
	possible misrepresentation of data				
	presented and potential sources of error.				
13.A.4c	Describe how scientific knowledge,				
	explanations and technological designs may				
	change with new information over time				
	(e.g., the understanding of DNA, the design				
	of computers).				
13.A.4d					
	accurate use of data and improves the				
В.	scientific process. Know and apply concepts that describe the				
Б.	interaction between science, technology				
	and society.				
13.B.4a	Compare and contrast scientific inquiry and				
	technological design as pure and applied				
	sciences.				
13.B.4b					
	decisions that may be influenced by a				
	knowledge of science.				
13.B.4c	, ,				ĺ
	and technology can be used to				1
13.B.4d	accommodate population trends.			-	
13.D.40	Analyze local examples of resource use, technology use or conservation programs;				1
	document findings; and make				ĺ
	recommendations for improvements.				ĺ
13.B.4e	Evaluate claims derived from purported			 	
12.27.10	scientific studies used in advertising and				1
	marketing strategies.				ĺ
				•	

STATE GOALS/STANDARDS/BENCHMARKS--LOCAL GOALS/OUTCOMES/OBJECTIVES LINKING ORGANIZER

LATE HIGH SCHOOL

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KEY	
2Indicates Strong Link	
1Indicates Moderate Link	
0Indicates No Link	

	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
	Understand the processes of scientific				
	and technological design to investigate				
•	ns, conduct experiments and solve				
problem					
	ow and apply the concepts, principles				
11.A.5a	d processes of scientific inquiry. Formulate hypotheses referencing prior				
	research and knowledge.				
11.A.5b	Design procedures to test the selected hypotheses.				
11.A.5c	Conduct systematic controlled experiments to test the selected hypotheses.				
11.A.5d	Apply statistical methods to make predictions and to test the accuracy of results.				
11.A.5e	Report, display and defend the results of investigations to audiences that may include professionals and technical experts.				
B. Kn	ow and apply the concepts, principles				
	d processes of technological design.				
11.B.5a	Identify a design problem that has practical applications and propose possible solutions, considering such constraints as available tools, materials, time and costs.				
11.B.5b	Select criteria for a successful design solution to the identified problem.				
11.B.5c	Build and test different models or simulations of the design solution using suitable materials, tools and technology.				
11.B.5d	Choose a model and refine its design based on the test results.				
11.B.5e	Apply established criteria to evaluate the suitability, acceptability, benefits, drawbacks and consequences for the tested design solution and recommend modifications and refinements.				
11.B.5f	Using available technology, prepare and present findings of the tested design solution to an audience that may include professional and technical experts.				
Goal 12:	Understand the fundamental concepts,				
	es and interconnections of the life,				
	and earth/space sciences.				
	ow and apply concepts that explain how ng things function, adapt and change.				

	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
12 A Fo	Evalois changes within calls and arganisms		1		T .
12.A.5a	Explain changes within cells and organisms in response to stimuli and changing				
	environmental conditions (e.g.,				
	homeostasis, dormancy).				
12.A.5b	Analyze the transmission of genetic traits,				
	diseases and defects.				
	ow and apply concepts that describe how				
	ing things interact with each other and				
12.B.5a	th their environment. Analyze and explain biodiversity issues and				
12.0.3a	the causes and effects of extinction.				
12.B.5b	Compare and predict how life forms can				
12.2.00	adapt to changes in the environment by				
	applying concepts of change and constancy				
	(e.g., variations within a population increase				
	the likelihood of survival under new				
C 1/10	conditions).				
	ow and apply concepts that describe operties of matter and energy and the				
	eractions between them.				
12.C.5a					
	burning of fuel, decomposition of waste) in				
	natural and man-made energy systems.				
12.C.5b	, , ,				
	mass, boiling point, melting point, hardness)				
	in relation to their physical and/or chemical				
D. Kn	ow and apply concepts that describe				
	ce and motion and the principles that				
	plain them.				
	Analyze factors that influence the relative				
	motion of an object (e.g., friction, wind				
	shear, cross currents, potential differences).				
12.D.5b	,				
	electromagnetic and nuclear forces on a				
E. Kn	physical system. ow and apply concepts that describe the				
	itures and processes of the Earth and its				
	sources.				
12.E.5	Analyze the processes involved in naturally				
	occurring short-term and long-term Earth				
	events (e.g., floods, ice ages, temperature,				
	sea-level fluctuations).				
	ow and apply concepts that explain the				
	mposition and structure of the universe				
	d Earth's place in it. Compare the processes involved in the life				
12.F.5a	cycle of stars (e.g., gravitational collapse,				
	thermonuclear fusion, nova) and evaluate				
	the supporting evidence.				
12.F.5b	Describe the size and age of the universe				
	and evaluate the supporting evidence (e.g.,				
	and evaluate the supporting evidence (e.g.,				

	STATE GOALS/ STANDARDS/BENCHMARKS	LOCAL GOALS/ OUTCOMES/OBJECTIVES	2	1	0
science,	Understand the relationships among technology and society in historical and porary contexts.				
A. Kn	ow and apply the accepted practices of ence.				
13.A.5a					
13.A.5b	Explain criteria that scientists use to evaluate the validity of scientific claims and theories.				
13.A.5c	Explain the strengths, weaknesses and uses of research methodologies including observational studies, controlled laboratory experiments, computer modeling and statistical studies.				
13.A.5d	Explain, using a practical example (e.g., cold fusion), why experimental replication and peer review are essential to scientific claims.				
	ow and apply concepts that describe the eraction between science, technology and				
	ciety.				
	Analyze challenges created by international competition for increases in scientific knowledge and technological capabilities (e.g., patent issues, industrial espionage, technology obsolescence).				
13.B.5b	Analyze and describe the processes and effects of scientific and technological breakthroughs.				
13.B.5c	Design and conduct an environmental impact study, analyze findings and justify recommendations.				
13.B.5d	Analyze the costs, benefits and effects of scientific and technological policies at the local, state, national and global levels (e.g., genetic research, Internet access).				
13.B.5e	Assess how scientific and technological progress has affected other fields of study, careers and job markets and aspects of everyday life.				