

*This document outlines the academic goals, the activities and materials used in the Fourth Grade class in order to achieve high academic success. There is a great deal of overlap in the standards within the activities and within the core areas, thus, standards addressed repeatedly throughout the year.*

Time period	Standard	Resources (unit in textbook, learning center, recurring activity, other)	Internet/Media/ other resource
Weeks 1 to 36	(1) Scientific investigation and reasoning. The student conducts classroom and outdoor investigations, following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:	Harcourt Science Text (Chameleon on cover)	
Introduced Week 1 Demonstrated Weeks 1-36	(A) demonstrate safe practices and the use of safety equipment as described in the Texas Safety Standards during classroom and outdoor investigations; and	Text- Safety in Science (p xvi) Multiple investigations throughout the text	Science fair experiment Word Safety Contract (S1) PDF Safety Resource (S2)  *Safety equipment needed
	(B) make informed choices in the use and conservation of natural resources and reusing and recycling of materials such as paper, aluminum, glass, cans, and plastic.	Text- Resource Conservation (B86-87)	Start recycling program- recycling materials for Art
Weeks 1 to 36	(2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and outdoor investigations. The student is expected to:		
Weeks 1-36	(A) plan and implement descriptive investigations, including asking well-defined questions, making inferences, and selecting and using appropriate equipment or technology to answer his/her questions;	Text- Investigations (E94-94, F10-11) Guidelines (R2-R3)  <i>Most investigations in the text do not require students to plan their own or select appropriate equipment</i>	Need more resources for this standard
Weeks 1-36  [Type text]	(B) collect and record data by observing and measuring, using the metric system, and using descriptive words and numerals such as labeled drawings, writing, and concept	Text- Multiple investigations throughout the text	

	maps;		
Weeks 1-36	(C) construct simple tables, charts, bar graphs, and maps using tools and current technology to organize, examine, and evaluate data;	Text- Multiple investigations throughout the text	Use of Excel spreadsheets for data collection which can be turned into bar graphs, maps, and line graphs
Weeks 1-36	(D) analyze data and interpret patterns to construct reasonable explanations from data that can be observed and measured;	Text- In "Draw Conclusions" section of each investigation	
Weeks 1-36	(E) perform repeated investigations to increase the reliability of results; and	Text- Multiple investigations throughout the text	
Weeks 1-36	(F) communicate valid, oral, and written results supported by data.	Text- Multiple investigations throughout the text (share with class)	
Weeks 1 to 36	(3) Scientific investigation and reasoning. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:		
Weeks 1-36	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;	Throughout discussions and analysis of investigation findings	Use scientific articles/current events for discussion
Weeks 15-16	(B) draw inferences and evaluate accuracy of services and product claims found in advertisements and labels such as for toys, food, and sunscreen;	In conjunction with Language Arts standard 14	
With corresponding standards	(C) represent the natural world using models such as rivers, stream tables, or fossils and identify their limitations,	Backbone A10 Text- Investigations in conjunction with other standards Beaks- <i>standard 10 (A38)</i>	

[Type text]

	including accuracy and size; and	Soil Erosion- <i>standard 7 (B52)</i> Screw- <i>standard 6 (F50)</i>  Also see: <i>System B4, Pond B68, Earthquake C10, Volcano C16, Rock Cycle C46, Fossil C60, Animal Tracks C66, Water Currents D38, Planets D60, Constellations D76</i>	
Weeks 1-36 (At the end of units)	(D) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.	Text- Science Through Time * People in Science* Science and Technology*  <i>* Found at the end of each unit</i>	
Weeks 1 to 36	(4) Scientific investigation and reasoning. The student knows how to use a variety of tools, materials, equipment, and models to conduct science inquiry. The student is expected to:		
Weeks 1-36	(A) collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, mirrors, spring scales, pan balances, triple beam balances, graduated cylinders, beakers, hot plates, meter sticks, compasses, magnets, collecting nets, and notebooks; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums; and	Text- Multiple investigations throughout the text Guidelines (R4-R7)	
Weeks 1-36	(B) use safety equipment as appropriate, including safety goggles and gloves.	Text- Multiple investigations throughout the text	
Weeks 1 to 9	(5) Matter and energy. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is		

	expected to:		
Quarter 1	(A) measure, compare, and contrast physical properties of matter, including size, mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float;	Text- Investigation (E4-5, E10-11, E16- 17, E27) Unit E/Chapter 1: Physical Properties of Matter Temperature (E35)	Need more resources for this standard on magnetism
Quarter 1	(B) predict the changes caused by heating and cooling such as ice becoming liquid water and condensation forming on the outside of a glass of ice water; and	Text- States of Matter (E6-E9)	Need more resources for this standard
Quarter 1	(C) compare and contrast a variety of mixtures and solutions such as rocks in sand, sand in water, or sugar in water.	Text- How Water Interacts with Other Matter (E18-19) Investigation (E27)	Need more resources for this standard on mixtures
Weeks 1 to 10	(6) Force, motion, and energy. The student knows that energy exists in many forms and can be observed in cycles, patterns, and systems. The student is expected to:		
Grading Period 1	(A) differentiate among forms of energy, including mechanical, sound, electrical, light, and heat/thermal;	Text- Unit E/Chapter 2: Heat Energy /Chapter 3: Sound Energy /Chapter 4: Electricity	Need more resources for this standard especially for mechanical and light
Grading Period 1	(B) differentiate between conductors and insulators;	Text- Electric Currents (E96-97)	
Grading Period 1	(C) demonstrate that electricity travels in a closed path, creating an electrical circuit, and explore an electromagnetic field; and	Text- Investigation (E94-95) Electric Currents (E96-99)	
Grading Period 1	(D) design an experiment to test the effect of force on an object such as a push or a pull, gravity, friction, or magnetism.	Text- Investigation (F10-11, F20-21, F31) Forces (F12-F19) Kinds of Forces (F22-27) Unit F/Chapter 2: Simple Machines and Investigations (F34-57)	
Weeks 10 to 18	(7) Earth and space. The students know that Earth consists of useful resources		

	and its surface is constantly changing. The student is expected to:		
Grading Period 2	(A) examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants;	Text- Investigation (B46-47) Soil Properties (B48-51) Investigations (B63)	
Grading Period 2	(B) observe and identify slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice; and	Text- Soil Conservation (B54-59) Soil Formation (B42-45) Sedimentary Rocks (C42-43) How Rocks Change (C48-51) Investigation: (B52-53 & C46-47)	
Grading Period 2	(C) identify and classify Earth's renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation.	Text- Resource Conservation (B86-89) Using Thermal Energy (E48-51)	Need more resources for this standard
Weeks 11 to 18	(8) Earth and space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to:		
Quarter 2	(A) measure and record changes in weather and make predictions using weather maps, weather symbols, and a map key;	Text- Investigations (D10-11, D18-19, D27) Air and Weather (D12-17) Weather Prediction (D20-23)	
Quarter 2	(B) describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process; and	Text- Ocean Water: The Water Cycle (D34-35)	
Quarter 2	(C) collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time.	Text- Ocean Movements: Tides (D42-43)	Need more resources for this standard
Weeks 19 to 27	(9) Organisms and environments. The student knows and understands that living organisms within an		

	ecosystem interact with one another and with their environment. The student is expected to:		
Grading Period 3	(A) investigate that most producers need sunlight, water, and carbon dioxide to make their own food, while consumers are dependent on other organisms for food; and	Text- Life Support for Plants (A64-65) Investigations (A62-63 & A68-69) How Animals Meet Their Needs: The Need for Food (A34) Living Things in Ecosystems: Roles (B21)	
Grading Period 3	(B) describe the flow of energy through food webs, beginning with the Sun, and predict how changes in the ecosystem affect the food web such as a fire in a forest.	Text- Living Things in Ecosystems: Roles (B21) <i>briefly</i>	Need more resources for this standard
Weeks 19 to 27	(10) Organisms and environments. The student knows that organisms undergo similar life processes and have structures that help them survive within their environment. The student is expected to:		
Grading Period 3	(A) explore how adaptations enable organisms to survive in their environment such as comparing birds' beaks and leaves on plants;	Text- Animal Adaptations: Body Parts (A40-45) Adaptations for Different Environments (A66-67) Parts of Ecosystems: Populations (B13)	
Grading Period 3	(B) demonstrate that some likenesses between parents and offspring are inherited, passed from generation to generation such as eye color in humans or shapes of leaves in plants. Other likenesses are learned such as table manners or reading a book and seals balancing balls on their noses; and	Text- Animal Adaptations: Behaviors (A48-53)	Need more resources for inherited <i>traits</i>
Grading Period 3	(C) explore, illustrate, and compare life cycles in living organisms such as butterflies, beetles, radishes, or lima beans.	Text- Animals and Their Young (A36) Plant Life Cycles (A76-79)	PDF Metamorphosis Handout (S3)

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