

EARTH SCIENCE DAYBOOK

Grades 6-8

correlated to

Texas

Essential Knowledge and Skills (TEKS) for Science



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EDUCATION GROUP



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Earth SCIENCE DAYBOOK © 2003
correlated to
Texas Essential Knowledge and Skills (TEKS)
for Science
Grade 6

(1) S c i e n t i f i c p r o c e s s e s

The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
<p>The student is expected to:</p> <p>(A) demonstrate safe practices during field and laboratory investigations.</p>	<p>Teacher's Guide: 20A, 30A, 40A, 52A, 57, 62A, 72A, 82A, 94A, 114A, 120, 124A, 136A, 139, 156A, 156B, 157, 166A, 173, 198A</p>

(2) S c i e n t i f i c p r o c e s s e s

The student uses scientific inquiry methods during field and laboratory investigations.

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
<p>The student is expected to:</p> <p>(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting and using equipment and technology;</p>	<p>Teacher's Guide: 27, 63, 67, 77, 78, 99, 113, 123, 129, 172, 173, 174, 175</p>
<p>(B) collect data by observing and measuring;</p>	<p>Teacher's Guide: 10, 28-29, 45, 49, 71, 80-81, 82, 84-85, 90, 95, 100, 103, 113, 120-121, 124, 125, 126, 129, 143, 149, 152, 160, 162, 168, 171, 173, 174, 187, 192, 193</p>
<p>(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;</p>	<p>Teacher's Guide: 17, 21, 27, 41, 47, 53, 63, 67, 77, 78, 97, 99, 113, 115, 123, 125, 129, 143, 147, 157, 172, 173, 174, 175</p>
<p>(D) communicate valid conclusions; and</p>	<p>Teacher's Guide: 17, 21, 27, 41, 47, 53, 63, 67, 77, 78, 97, 99, 113, 115, 123, 125, 129, 143, 147, 157, 172, 173, 174, 175</p>

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
(E) construct graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate data.	Teacher's Guide: 11, 12, 16, 19, 20, 21, 23, 38, 39, 41, 44, 53, 54, 69, 79, 85, 105, 117, 119, 130, 138, 140, 145, 146, 149, 196, 197, 206

(3) S c i e n t i f i c p r o c e s s e s

The student uses critical thinking and scientific problem solving to make informed decisions.

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
The student is expected to: (A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Teacher's Guide: 24-27, 72A-72B, 72-75, 76-79, 80-81, 172-175
(B) draw inferences based on data related to promotional materials for products and services;	Teacher's Guide: 110
(C) represent the natural world using models and identify their limitations;	Teacher's Guide: 10, 11, 12, 45, 61, 67, 82, 83, 95, 100, 102-103, 104, 105, 111, 118, 121, 125, 136, 137, 157, 202, 206
(D) evaluate the impact of research on scientific thought, society, and the environment; and	Teacher's Guide: 19, 55, 72-75, 76-79, 80-81, 89, 112, 113, 166A-166B, 166-169, 170-171, 172-175
(E) connect Grade 6 science concepts with the history of science and contributions of scientists.	Teacher's Guide: 25, 72-75, 136-137, 138-141, 198-201

(4) S c i e n t i f i c p r o c e s s e s

The student knows how to use a variety of tools and methods to conduct science inquiry.

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
The student is expected to: (A) collect, analyze, and record information using tools including beakers, petri dishes, meter sticks, graduated cylinders, weather instruments, timing devices, hot plates, test tubes, safety goggles, spring scales, magnets, balances, microscopes, telescopes, thermometers, calculators, field equipment, compasses, computers, and computer probes; and	Teacher's Guide: 17, 21, 25, 41, 53, 57, 63, 78, 97, 114B, 115, 119, 120, 124A, 125, 126-127, 131, 136A, 143, 146A, 147, 149, 156A, 156B, 157, 173, 193, 203, 209, 212
(B) identify patterns in collected information using percent, average, range, and frequency.	Teacher's Guide: 24, 196-197

(5) S c i e n t i f i c c o n c e p t s

The student knows that systems may combine with other systems to form a larger system.

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
The student is expected to: (A) identify and describe a system that results from the combination of two or more systems such as in the solar system; and	Teacher's Guide: 188A-188B, 188-191
(B) describe how the properties of a system are different from the properties of its parts.	Teacher's Guide: 188-191

(6) S c i e n c e c o n c e p t s

The student knows that there is a relationship between force and motion.

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
The student is expected to: (A) identify and describe the changes in position, direction of motion, and speed of an object when acted upon by force;	Teacher's Guide: 210
(C) identify forces that shape features of the Earth including uplifting, movement of water, and volcanic activity.	Teacher's Guide: 62A-62B, 62-65, 66-69, 70-71, 72A-72B, 72-75, 76-79, 80-81, 82A-82B, 82-85, 86-87

(8) S c i e n c e c o n c e p t s

The student knows that complex interactions occur between matter and energy.

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
The student is expected to: (A) define matter and energy;	Teacher's Guide: 30, 33, 34, 82-85, 86, 87, 88-90, 94, 118, 123, 219, 220, 221
(B) explain and illustrate the interactions between matter and energy in the water cycle and in the decay of biomass such as in a compost bin.	Teacher's Guide: 52, 92, 94A, 94B, 94-95, 96-99, 100, 102, 219, 222, 224, 227

(9) Science concepts

The student knows that obtaining, transforming, and distributing energy affects the environment.

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
The student is expected to: (A) identify energy transformations occurring during the production of energy for human use such as electrical energy to heat energy or heat energy to electrical energy;	Teacher's Guide: 33, 34, 35, 38, 39, 130-131
(B) compare methods used for transforming energy in devices such as water heaters, cooling systems, or hydroelectric and wind power plants; and	Teacher's Guide: 38-39, 130-131, 132
(C) research and describe energy types from their source to their use and determine if the type is renewable, non-renewable, or inexhaustible.	Teacher's Guide: 30-33, 35, 36, 37, 39, 130, 198, 206, 208, 211, 220, 223

(13) Science concepts

The student knows components of our solar system.

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
The student is expected to: (A) identify characteristics of objects in our solar system including the Sun, planets, meteorites, comets, asteroids, and moons.	Teacher's Guide: 176, 177, 178A-178B, 178-181, 182-183, 184-187, 188A-188B, 188-191, 192-195, 196-197, 198A-198B, 198-201, 202-205
(B) describe types of equipment and transportation needed for space travel.	Teacher's Guide: 202-205, 206-207, 208A-208B, 208-211, 212-213

(14) Science concepts

The student knows the structures and functions of Earth systems

Knowledge and Skills, Grade 6	Earth SCIENCE DAYBOOK
The student is expected to: (A) summarize the rock cycle;	Teacher's Guide: 20A, 20, 21, 22, 23, 223
(B) identify relationships between groundwater and surface water in a watershed; and	Teacher's Guide: 94, 95, 104-105, 106, 109, 115, 220, 224
(C) describe components of the atmosphere, including oxygen, nitrogen, and water vapor, and identify the role of atmospheric movement in weather change.	Teacher's Guide: 136A, 136, 142, 146, 147

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Grade 7

(1) S c i e n t i f i c p r o c e s s e s

The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.

Knowledge and Skills, Grade 7	Earth SCIENCE DAYBOOK
The student is expected to: (A) demonstrate safe practices during field and laboratory investigations.	Teacher's Guide: 20A, 30A, 40A, 52A, 57, 62A, 72A, 82A, 94A, 114A, 120, 124A, 136A, 139, 156A, 156B, 157, 166A, 173, 198A

(2) S c i e n t i f i c p r o c e s s e s

The student uses scientific inquiry methods during field and laboratory investigations.

Knowledge and Skills, Grade 7	Earth SCIENCE DAYBOOK
The student is expected to: (A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting and using equipment and technology;	Teacher's Guide: 27, 63, 67, 77, 78, 99, 113, 123, 129, 172, 173, 174, 175
(B) collect data by observing and measuring;	Teacher's Guide: 10, 28-29, 45, 49, 71, 80-81, 82, 84-85, 90, 95, 100, 103, 113, 120-121, 124, 125, 126, 129, 143, 149, 152, 160, 162, 168, 171, 173, 174, 187, 192, 193
(C) organize, analyze, make inferences, and predict trends from direct and indirect evidence;	Teacher's Guide: 52, 70, 71, 73, 80, 81, 88-91, 110, 113, 114, 124, 125, 128, 132, 138, 146, 149, 154, 163, 164, 165, 170, 171, 181, 222
(D) communicate valid conclusions; and	Teacher's Guide: 17, 21, 27, 41, 47, 53, 63, 67, 77, 78, 97, 99, 113, 115, 123, 125, 129, 143, 147, 157, 172, 173, 174, 175

Knowledge and Skills, Grade 7	Earth SCIENCE DAYBOOK
(E) construct graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate data.	Teacher's Guide: 11, 12, 16, 19, 20, 21, 23, 38, 39, 41, 44, 53, 54, 69, 79, 85, 105, 117, 119, 130, 138, 140, 145, 146, 149, 196, 197, 206

(3) S c i e n t i f i c p r o c e s s e s

The student uses critical thinking and scientific problem solving to make informed decisions.

Knowledge and Skills, Grade 7	Earth SCIENCE DAYBOOK
The student is expected to: (A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Teacher's Guide: 24-27, 72A-72B, 72-75, 76-79, 80-81, 172-175
(B) draw inferences based on data related to promotional materials for products and services;	Teacher's Guide: 110
(C) represent the natural world using models and identify their limitations;	Teacher's Guide: 10, 11, 12, 45, 61, 67, 82, 83, 95, 100, 102-103, 104, 105, 111, 118, 121, 125, 136, 137, 157, 202, 206
(D) evaluate the impact of research on scientific thought, society, and the environment; and	Teacher's Guide: 19, 55, 72-75, 76-79, 80-81, 89, 112, 113, 166A-166B, 166-169, 170-171, 172-175
(E) connect Grade 7 science concepts with the history of science and contributions of scientists.	Teacher's Guide: 25, 72-75, 136-137, 138-141, 198-201

(4) S c i e n t i f i c p r o c e s s e s

The student knows how to use tools and methods to conduct science inquiry.

Knowledge and Skills, Grade 7	Earth SCIENCE DAYBOOK
The student is expected to: (A) collect, analyze, and record information to explain a phenomenon using tools including beakers, petri dishes, meter sticks, graduated cylinders, weather instruments, hot plates, dissecting equipment, test tubes, safety goggles, spring scales, balances, microscopes, telescopes, thermometers, calculators, field equipment, computers, computer probes, timing devices, magnets, and compasses; and	Teacher's Guide: 17, 21, 25, 41, 53, 57, 63, 78, 97, 114B, 115, 119, 120, 124A, 125, 126-127, 131, 136A, 143, 146A, 147, 149, 156A, 156B, 157, 173, 193, 203, 209, 212
(B) collect and analyze information to recognize patterns such as rates of change.	Teacher's Guide: 24, 196-197

(5) Science concepts

The student knows that an equilibrium of a system may change.

Knowledge and Skills, Grade 7	Earth SCIENCE DAYBOOK
The student is expected to: (A) describe how systems may reach an equilibrium such as when a volcano erupts.	Teacher's Guide: 82A-82B, 82-85, 86-87, 88-91

(8) Science concepts

The student knows that complex interactions occur between matter and energy.

Knowledge and Skills, Grade 7	Earth SCIENCE DAYBOOK
The student is expected to: (A) illustrate examples of potential and kinetic energy in everyday life such as objects at rest, movement of geologic faults, and falling water.	Teacher's Guide: 35

(14) Science concepts

The student knows that natural events and human activity can alter Earth systems.

Knowledge and Skills, Grade 7	Earth SCIENCE DAYBOOK
The student is expected to: (A) describe and predict the impact of different catastrophic events on the Earth;	Teacher's Guide: 88-91, 146-149, 152, 165
(B) analyze effects of regional erosional deposition and weathering; and	Teacher's Guide: 20, 29, 57, 62, 63, 187, 219, 224
(C) make inferences and draw conclusions about effects of human activity on Earth's renewable, non-renewable, and inexhaustible resources.	Teacher's Guide: 38, 39, 104, 105, 113, 114, 115, 222

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Grade 8

(1) Scientific processes

The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (A) demonstrate safe practices during field and laboratory investigations.	Teacher's Guide: 20A, 30A, 40A, 52A, 57, 62A, 72A, 82A, 94A, 114A, 120, 124A, 136A, 139, 156A, 156B, 157, 166A, 173, 198A

(2) Scientific processes

The student uses scientific inquiry methods during field and laboratory investigations.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting and using equipment and technology;	Teacher's Guide: 27, 63, 67, 77, 78, 99, 113, 123, 129, 172, 173, 174, 175
(B) collect data by observing and measuring;	Teacher's Guide: 10, 28-29, 45, 49, 71, 80-81, 82, 84-85, 90, 95, 100, 103, 113, 120-121, 124, 125, 126, 129, 143, 149, 152, 160, 162, 168, 171, 173, 174, 187, 192, 193
(C) organize, analyze, evaluate, make inferences, and predict trends from direct and indirect evidence;	Teacher's Guide: 52, 70, 71, 73, 80, 81, 88-91, 110, 113, 114, 124, 125, 128, 132, 138, 146, 149, 154, 163, 164, 165, 170, 171, 181, 222
(D) communicate valid conclusions; and	Teacher's Guide: 17, 21, 27, 41, 47, 53, 63, 67, 77, 78, 97, 99, 113, 115, 123, 125, 129, 143, 147, 157, 172, 173, 174, 175

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
(E) construct graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate data.	Teacher's Guide: 11, 12, 16, 19, 20, 21, 23, 38, 39, 41, 44, 53, 54, 69, 79, 85, 105, 117, 119, 130, 138, 140, 145, 146, 149, 196, 197, 206

(3) S c i e n t i f i c p r o c e s s e s

The student uses critical thinking and scientific problem solving to make informed decisions.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Teacher's Guide: 24-27, 72A-72B, 72-75, 76-79, 80-81, 172-175
(B) draw inferences based on data related to promotional materials for products and services;	Teacher's Guide: 110
(C) represent the natural world using models and identify their limitations;	Teacher's Guide: 10, 11, 12, 45, 61, 67, 82, 83, 95, 100, 102-103, 104, 105, 111, 118, 121, 125, 136, 137, 157, 202, 206
(D) evaluate the impact of research on scientific thought, society, and the environment; and	Teacher's Guide: 19, 55, 72-75, 76-79, 80-81, 89, 112, 113, 166A-166B, 166-169, 170-171, 172-175
(E) connect Grade 8 science concepts with the history of science and contributions of scientists.	Teacher's Guide: 25, 72-75, 136-137, 138-141, 198-201

(4) S c i e n t i f i c p r o c e s s e s

The student knows how to use a variety of tools and methods to conduct science inquiry.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (A) collect, record, and analyze information using tools including beakers, petri dishes, meter sticks, graduated cylinders, weather instruments, hot plates, dissecting equipment, test tubes, safety goggles, spring scales, balances, microscopes, telescopes, thermometers, calculators, field equipment, computers, computer probes, water test kits, and timing devices; and	Teacher's Guide: 17, 21, 25, 41, 53, 57, 63, 78, 97, 114B, 115, 119, 120, 124A, 125, 126-127, 131, 136A, 143, 146A, 147, 149, 156A, 156B, 157, 173, 193, 203, 209, 212
(B) extrapolate from collected information to make predictions.	Teacher's Guide: 17, 151, 171

(5) S c i e n t i f i c p r o c e s s e s

The student knows that relationships exist between science and technology.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (A) identify a design problem and propose a solution;	Teacher's Guide: 77, 117, 123, 139
(B) design and test a model to solve the problem; and	Teacher's Guide: 123, 139
(C) evaluate the model and make recommendations for improving the model.	Teacher's Guide: 79, 117, 123, 139

(9) S c i e n c e c o n c e p t s

The student knows that substances have chemical and physical properties.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (B) interpret information on the periodic table to understand that physical properties are used to group elements.	Teacher's Guide: 21, 226

(1 0) S c i e n c e c o n c e p t s

The student knows that complex interactions occur between matter and energy.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (A) illustrate interactions between matter and energy including specific heat.	Teacher's Guide: 38-39, 130-131, 132

(1 1) S c i e n c e c o n c e p t s

The student knows that traits of species can change through generations and that the instructions for traits are contained in the genetic material of the organisms.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (A) identify that change in environmental conditions can affect the survival of individuals and of species.	Teacher's Guide: 24, 25, 112, 219

(1 2) S c i e n c e c o n c e p t s
The student knows that cycles exist in Earth systems.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (A) analyze and predict the sequence of events in the lunar and rock cycles;	Teacher's Guide: 20A, 20, 21, 22, 23, 223
(B) relate the role of oceans to climatic changes; and	Teacher's Guide: 169
(C) predict the results of modifying the Earth's nitrogen, water, and carbon cycles.	Teacher's Guide: 173

(1 3) S c i e n c e c o n c e p t s
The student knows characteristics of the universe.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (A) describe characteristics of the universe such as stars and galaxies;	Teacher's Guide: 188A-188B, 188-191, 198A-198B, 198-201, 202-205, 223
(C) research and describe historical scientific theories of the origin of the universe.	Teacher's Guide: 20-23

(1 4) S c i e n c e c o n c e p t s
The student knows that natural events and human activities can alter Earth systems.

Knowledge and Skills, Grade 8	Earth SCIENCE DAYBOOK
The student is expected to: (A) predict land features resulting from gradual changes such as mountain building, beach erosion, land subsidence, and continental drift;	Teacher's Guide: 62A-62B, 62-65, 66, 72A-72B, 72-75, 76-79, 80-81
(B) analyze how natural or human events may have contributed to the extinction of some species; and	Teacher's Guide: 24, 25, 112, 219
(C) describe how human activities have modified soil, water, and air quality.	Teacher's Guide: 38, 39, 52-55, 56-59, 60, 104, 105, 113, 114, 115, 222

