

Inquiry Skills	Grade 3 TEKS Links
1. Students set up a new, appropriate problem/application	2(A) plan and implement descriptive investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology.
2. Pose relevant questions and develop hypotheses	2(A) plan and implement descriptive investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology.
3. Make and test predictions	
4. Observations and measurements are accurate and appropriate	2(B) collect information by observing and measuring.
5. Equipment is used properly with appropriate safety procedures	1(A) demonstrate safe practices during field and laboratory investigations.
6. Quality assurance procedures are employed (multiple, repeated readings; recalibration) and measurement errors are detected	4(B) demonstrate that repeated investigations may increase the reliability of results.
7. Specify measurements and variables	
8. Identify similarities and differences	
9. Explain reasons for differences	
10. Use appropriate mathematical procedures	2(E) construct simple graphs, tables, maps, and charts to organize, examine and evaluate information.
11. Infer patterns and trends	3(B) draw inferences based on information related to promotional materials for products and services.
12. Explain data and relationships using evidence	2(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence
13. Collect and organize data	2(B) collect information by observing and measuring. 4(A) collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses. 2(E) construct simple graphs, tables, maps, and charts to organize, examine and evaluate information.
14. Use multiple forms to represent data	2(E) construct simple graphs, tables, maps, and charts to organize, examine and evaluate information.
15. Use models and simulations	3(C) represent the natural world using models and identify their limitations.
16. Communicate findings	2(D) communicate valid conclusions.

GLOBE ATMOSPHERE Science Concepts	Grade 3 Direct TEKS Link*
1. The atmosphere has observable and/or measurable characteristics.	2(B) collect information by observing and measuring
2. Clouds can be categorized by observable features.	2(B) collect information by observing and measuring
3. Cloud cover and wind can affect atmospheric measurements.	2(B) collect information by observing and measuring 4(A) collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses 7(A) gather information including temperature, magnetism, hardness, and mass using appropriate tools to identify physical properties of matter
4. Cloud types can be associated with certain weather patterns and used to predict the weather.	
5. pH is a characteristic property that can be measured.	2(B) collect information by observing and measuring 4(A) collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses
6. Heat energy transfers through radiation, conduction, and convection.	
7. Substances transfer heat energy at different rates.	
8. Some materials are good conductors of heat energy; some are good insulators of heat energy.	
9. The transfer of heat energy affects temperature.	7(A) gather information including temperature, magnetism, hardness, and mass using appropriate tools to identify physical properties of matter
10. Substances expand and contract as the temperature changes.	
11. Classification helps to organize and understand the natural world.	
Enrichment Concepts	Grade 3 Direct TEKS Link*
1. Water has the unique property of expansion when changing from a liquid to a solid state.	

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GLOBE HYDROLOGY Science Concepts	Grade 3 Direct TEKS Link*	Grade 3 InDirect TEKS Link*
1. Surface water exists in many forms and has observable and/or measurable characteristics.	2(B) collect information by observing and measuring 7(A) gather information including temperature, magnetism, hardness, and mass using appropriate tools to identify physical properties of matter	
2. Surface water characteristics are related to the characteristics of the surrounding environment.		
3. A watershed guides water to a common watercourse.		
4. Watershed characteristics are related to the physical features of the land.		
5. The physical environment affects an organism's response patterns; organisms adapt and survive, move, or die.	8(C) describe environmental changes in which some organisms would thrive, become ill, or perish 8(D) describe how living organisms modify their physical environment to meet their needs such as beavers building a dam or humans building a home	9(A) observe and identify characteristics among species that allow each to survive and reproduce; 9(B) analyze how adaptive characteristics help individuals within a species to survive and reproduce
6. pH is a characteristic property that can be measured.	2(B) collect information by observing and measuring 4(A) collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses	
7. Classification helps to organize and understand the natural world.		

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HYDROLOGY Enrichment Concepts	Grade 3 Direct TEKS Link*	Grade 3 InDirect TEKS Link*
1. Macro-invertebrates are sensitive indicators of water quality.		
2. Topographical maps provide 3-dimensional information about the land.	3(C) represent the natural world using models and identify their limitations	

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GLOBE SOILS Science Concepts	Grade 3 Direct TEKS Link*
<p>1. Soil has observable and/or measurable properties that change with time and location.</p>	<p>2(B) collect information by observing and measuring</p> <p>4(A) collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses</p> <p>7(A) gather information including temperature, magnetism, hardness, and mass using appropriate tools to identify physical properties of matter</p> <p>11(B) identify and record properties of soils such as color and texture, capacity to retain water, and ability to support the growth of plants</p>
<p>2. The interaction of organisms, climate, parent material, topography, and time affect soil properties.</p>	
<p>3. Soil acts as an insulating layer, creating a measurable temperature gradient.</p>	<p>2(B) collect information by observing and measuring</p> <p>4(A) collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses</p>
<p>4. Environmental conditions affect the rate of decomposition in soil.</p>	
<p>5. The chemical and physical properties of soils make different soils useful in different ways.</p>	<p>11(A) identify and describe the importance of earth materials including rocks, soil, water, and gases of the atmosphere in the local area and classify them as renewable, nonrenewable, or inexhaustible resources</p> <p>11(B) identify and record properties of soils such as color and texture, capacity to retain water, and ability to support the growth of plants</p>
<p>6. pH is a characteristic property that can be measured.</p>	<p>2(B) collect information by observing and measuring</p> <p>4(A) collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses</p>
<p>7. Classification helps to organize and understand the natural world.</p>	

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Soils Enrichment Concepts:	Grade 3 Direct TEKS Link*
1. There are 12 soil textures representing different amounts of sand-, silt-, and clay-sized particles.	2(B) collect information by observing and measuring 11(B) identify and record properties of soils such as color and texture, capacity to retain water, and ability to support the growth of plants
2. A soil profile can be classified according to its properties, such as horizon, color, structure, consistency, texture, root and rock distribution, density, pH, carbonates, and fertility.	2(B) collect information by observing and measuring 4(A) collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses 11(B) identify and record properties of soils such as color and texture, capacity to retain water, and ability to support the growth of plants
3. Infiltration is the rate at which water flows into the ground; the rate changes depending on the level of soil saturation, soil texture and structure, and land cover.	

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GLOBE LAND COVER Science Concepts	Grade 3 Direct TEKS Link*	Grade 3 InDirect TEKS Link*
1. A GLOBE Study Site has observable and/or measurable characteristics.	2(B) collect information by observing and measuring 4(A) collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses 7(A) gather information including temperature, magnetism, hardness, and mass using appropriate tools to identify physical properties of matter 5(A) observe and identify simple systems such as a sprouted seed and a wooden toy car	
2. A GLOBE Study Site represents a system with boundaries, and is a subset of the earth system.	5(A) observe and identify simple systems such as a sprouted seed and a wooden toy car 5(B) observe a simple system and describe the role of various parts such as a yo-yo and string	
3. Earth's land surface is covered by a variety of naturally occurring vegetated ecosystems.		
4. The physical environment affects an organism's response patterns; organisms adapt and survive, move, or die.	8(C) describe environmental changes in which some organisms would thrive, become ill, or perish 8(D) describe how living organisms modify their physical environment to meet their needs such as beavers building a dam or humans building a home	9(A) observe and identify characteristics among species that allow each to survive and reproduce 9(B) analyze how adaptive characteristics help individuals within a species to survive and reproduce
5. The magnetic needle of a compass is attracted to Earth's Magnetic North and to some metal objects that are nearby.		
6. Classification helps to organize and understand the natural world.		

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LAND COVER Enrichment Concepts	Grade 3 Direct TEKS Link*	Grade 3 InDirect TEKS Link*
1. Remote sensing is a technique used to create visual representations of data.	3(C) represent the natural world using models and identify their limitations 2(B) collect information by observing and measuring	
2. Image display is accomplished by conversion of stored data to a user-defined coded scheme and creating an image based on differences in measurement.		
3. Student remote sensing involves observations made without the use of touch (i.e., using eyes, ears, nose and skin surface).	2(B) collect information by observing and measuring	

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GLOBE Seasons Science Concepts	Grade 3 Direct TEKS Link*
1. Seasonal changes can be observed.	2(B) collect information by observing and measuring
2. Seasonal changes follow an annual cycle. The magnitude of these changes varies from year to year.	
3. Seasonal patterns differ based on geographic location.	
4. Earth has many climate zones.	
5. Classification helps to organize and understand the natural world.	
Seasons Enrichment Concepts	
1. Bud-break is the period when leaf buds appear and grow.	
2. Senescence is the period when actively growing plant material dies.	

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GLOBE GPS Science Concepts	Grade 3 Direct TEKS Link*
1. The amount of sunlight that falls directly at a particular site on Earth varies throughout the year.	
2. The magnetic needle of a compass is attracted to Earth's Magnetic North and to some metal objects that are nearby.	
3. A map is a symbolic representation of a certain land area.	3(C) represent the natural world using models and identify their limitations
GPS Enrichment Concepts	
1. Universal time is a technique used to standardize time measurements.	
2. The spatial relationship between Earth and celestial objects can be used to determine location on Earth.	
3. The GPS is used to make accurate measurements of latitude and longitude.	

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