

Inquiry Skills	Grade 5 TEKS Links
1. Set up a new, appropriate problem/application	2(A) plan and implement descriptive and simple experimental 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 and simple experimental 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. 4(A) collect and analyze information using tools including calculators, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, compasses, balances, hot plates, meter sticks, timing devices, magnets, collecting nets, and safety goggles.
5. Equipment is used properly with appropriate safety procedures	4(A) collect and analyze information using tools including calculators, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, compasses, balances, hot plates, meter sticks, timing devices, magnets, collecting nets, and safety goggles.
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 using tools including computers 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, sound recorders, computers, hand lenses, rulers, thermometers, compasses, balances, hot plates, meter sticks, timing devices, magnets, collecting nets, and safety goggles.
14. Use multiple forms to represent data	2(E) construct simple graphs, tables, maps, and charts using tools including computers 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 5 Direct TEKS Link*	Grade 5 InDirect TEKS Link*
1. The atmosphere has observable and/or measurable characteristics.	2(B) collect information by observing and measuring 7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound	
2. Clouds can be categorized by observable features.	2(B) collect information by observing and measuring 7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound	
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, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses	
4. Cloud types can be associated with certain weather patterns and used to predict the weather.		6(A) identify events and describe changes that occur on a regular basis such as in daily, weekly, lunar, and seasonal cycles
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, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses	
6. Heat energy transfers through radiation, conduction, and convection.		
7. Substances transfer heat energy at different rates.	7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound	
8. Some materials are good conductors of heat energy; some are good insulators of heat energy.	7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound	
9. The transfer of heat energy affects temperature.		
10. Substances expand and contract as the temperature changes.		
11. Classification helps to organize and understand the natural world.	7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound	

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Atmosphere Enrichment Concepts	Grade 5 Direct TEKS Link*	Grade 5 InDirect TEKS Link*
1. Water has the unique property of expansion when changing from a liquid to a solid state.		7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound

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GLOBE HYDROLOGY Science Concepts	Grade 5 Direct TEKS Link*	Grade 5 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	
2. Surface water characteristics are related to the characteristics of the surrounding environment.		12(A) interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering
3. A watershed guides water to a common watercourse.		
4. Watershed characteristics are related to the physical features of the land.		12(A) interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering
5. The physical environment affects an organism's response patterns; organisms adapt and survive, move, or die.		9(A) compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem 9(B) analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem; and 9(C) predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem
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, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses	
7. Classification helps to organize and understand the natural world.	7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound	

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Hydrology Enrichment Concepts	Grade 5 Direct TEKS Link*	Grade 5 InDirect TEKS Link*
1. Macro-invertebrates are sensitive indicators of water quality.		
2. Topographical maps provide 3-dimensional information about the land.		

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GLOBE SOILS Science Concepts	Grade 5 Direct TEKS Link*	Grade 5 InDirect TEKS Link*
1. Soil has observable and/or measurable properties that change with time and location.	2(B) collect information by observing and measuring 4(A) collect and analyze information using tools including calculators, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses 12(C) identify the physical characteristics of the Earth and compare them to the physical characteristics of the moon 11(A) identify and observe actions that require time for changes to be measurable, including growth, erosion, dissolving, weathering, and flow	7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound
2. The interaction of organisms, climate, parent material, topography, and time affect soil properties.	12(A) interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering; 12(B) describe processes responsible for the formation of coal, oil, gas, and minerals	
3. Soil acts as an insulating layer, creating a measurable temperature gradient.	2(B) collect information by observing and measuring 4(A) collect and analyze information using tools including calculators, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses	
4. Environmental conditions affect the rate of decomposition in soil.		
5. The chemical and physical properties of soils make different soils useful in different ways.		
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, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses	
7. Classification helps to organize and understand the natural world.	7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound	

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Soils Enrichment Concepts:	Grade 5 Direct TEKS Link*	Grade 5 InDirect 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	
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, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses	
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 5 Direct TEKS Link*	Grade 5 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, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses 5(A) describe some cycles, structures, and processes that are found in a simple system 5(B) describe some interactions that occur in a simple system	
2. A GLOBE Study Site represents a system with boundaries, and is a subset of the earth system.	5(A) describe some cycles, structures, and processes that are found in a simple system 5(B) describe some interactions that occur in a simple system	
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.		9(A) compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem 9(B) analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem; and 9(C) predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem
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.	7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound	

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Land Cover Enrichment Concepts	Grade 5 Direct TEKS Link*	Grade 5 InDirect TEKS Link*
1. Remote sensing is a technique used to create visual representations of data.	2(B) collect information by observing and measuring 3(C) represent the natural world using models and identify their limitations	
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 5 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.	6(A) identify events and describe changes that occur on a regular basis such as in daily, weekly, lunar, and seasonal cycles
3. Seasonal patterns differ based on geographic location.	
4. Earth has many climate zones.	
5. Classification helps to organize and understand the natural world.	7(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound
Seasons Enrichment Concepts	Grade 5 Direct TEKS Link*
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 5 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	Grade 5 Direct TEKS Link*
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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