

DesCartes (Combined)

Subject: General Science
Goal: Earth and Space Science

Subject: General Science
 Goal Strand: Earth and Space Science
 RIT Score Range: Below 171

| Skills and Concepts to Develop Below 171 | Skills and Concepts to Introduce 171 - 180 |
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| Structure and Interactions in the Earth System | Structure and Interactions in the Earth System |
| | <ul style="list-style-type: none"> • Gives examples of materials that are natural or non-natural parts of Earth* • Relates the type of weather experienced to personal choices and activities (e.g., dressing warmly in cold weather, sunglasses on sunny days)* • Explains that temperature is a measurement of how hot or cold something is* • Recognizes that wind is air that is moving around us* |
| Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ |
| <ul style="list-style-type: none"> • Recognizes that the Sun can only be seen in the daytime* | <ul style="list-style-type: none"> • Recognizes that the Sun is not a planet* • Describes the Sun, Moon, stars, and Earth* |
| <i>New Vocabulary: none</i> | <i>New Vocabulary: atmosphere, carbon dioxide, cloud, cool, dew, hot, weather</i> |
| <i>New Signs and Symbols: none</i> | <i>New Signs and Symbols: none</i> |

Subject: General Science

Goal Strand: Earth and Space Science

RIT Score Range: 171 - 180

| Skills and Concepts to Enhance Below 171 | Skills and Concepts to Develop 171 - 180 | Skills and Concepts to Introduce 181 - 190 |
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| <p>Structure and Interactions in the Earth System</p> | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Gives examples of materials that are natural or non-natural parts of Earth* • Relates the type of weather experienced to personal choices and activities (e.g., dressing warmly in cold weather, sunglasses on sunny days)* • Explains that temperature is a measurement of how hot or cold something is* • Recognizes that wind is air that is moving around us* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Recognizes that Earth is made of land masses surrounded by large bodies of water, and that most of the Earth's surface is covered by water* • Recognizes that oceans are bodies of salt water* • Interprets data related to the composition of the ocean* • Recognizes processes that make up the water cycle* • Describes different types of Earth materials • Analyzes precipitation in weather systems* • Draws conclusions about the role of clouds in reflecting the Sun's light* • Interprets data to identify existing weather conditions • Compares weather from season to season* • Describes seasonal patterns in weather* • Measures air temperature* • Chooses the appropriate tool to measure changes in air temperature (term not used)* • Recognizes that wind is air that is moving around us* • Recognizes that the Sun produces heat and light energy* • Recognizes that the Sun's energy can be stored in objects as heat* • Labels a diagram of Earth to show Earth's core* • Explains that tiny rocks come from the weathering and breakage of larger rocks* |
| <p>Structure, Interactions in Sky, Solar Sys, Univ</p> <ul style="list-style-type: none"> • Recognizes that the Sun can only be seen in the daytime* | <p>Structure, Interactions in Sky, Solar Sys, Univ</p> <ul style="list-style-type: none"> • Recognizes that the Sun is not a planet* • Describes the Sun, Moon, stars, and Earth* | <p>Structure, Interactions in Sky, Solar Sys, Univ</p> <ul style="list-style-type: none"> • Recognizes that day and night are caused by the Earth's rotation on its axis* • Explains how the Earth's rotation on its axis causes day and night* • Describes how the Earth's tilt affects seasons* • Explains how Earth's tilt affects the length of daylight during the year* • Explains how Earth's tilt affects the heating of Earth's surface* |

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| | | <ul style="list-style-type: none"> • Describes components of the solar system* • Identifies the location of planets relative to the sun* • Describes the order of planets and the asteroid belt in the solar system* • Recognizes that stars (like the Sun) are the source of light for all bright objects in space* |
| <i>New Vocabulary:</i> none | <i>New Vocabulary:</i> atmosphere, carbon dioxide, cloud, cool, dew, hot, weather | <i>New Vocabulary:</i> anemometer, autumn, axis, barometer, beach, body of water, condensation, cross section, crystal, daylight, evaporation, fossil, grain, hydrometer, hygrometer, Jupiter, land, Mars, Mercury (planet), metal, night, ocean floor, planet, Pluto, precipitation, revolve, rotate, sand, Saturn, seasonal change, shadow, shell, solar system, stone, store, stratosphere, stream, tar, tilt, Uranus, water cycle, winter |
| <i>New Signs and Symbols:</i> none | <i>New Signs and Symbols:</i> none | <i>New Signs and Symbols:</i> none |

Subject: General Science

Goal Strand: Earth and Space Science

RIT Score Range: 181 - 190

| Skills and Concepts to Enhance 171 - 180 | Skills and Concepts to Develop 181 - 190 | Skills and Concepts to Introduce 191 - 200 |
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| <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Gives examples of materials that are natural or non-natural parts of Earth* • Relates the type of weather experienced to personal choices and activities (e.g., dressing warmly in cold weather, sunglasses on sunny days)* • Explains that temperature is a measurement of how hot or cold something is* • Recognizes that wind is air that is moving around us* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Recognizes that Earth is made of land masses surrounded by large bodies of water, and that most of the Earth's surface is covered by water* • Recognizes that oceans are bodies of salt water* • Interprets data related to the composition of the ocean* • Recognizes processes that make up the water cycle* • Describes different types of Earth materials • Analyzes precipitation in weather systems* • Draws conclusions about the role of clouds in reflecting the Sun's light* • Interprets data to identify existing weather conditions • Compares weather from season to season* • Describes seasonal patterns in weather* • Measures air temperature* • Chooses the appropriate tool to measure changes in air temperature (term not used)* • Recognizes that wind is air that is moving around us* • Recognizes that the Sun produces heat and light energy* • Recognizes that the Sun's energy can be stored in objects as heat* • Labels a diagram of Earth to show Earth's core* • Explains that tiny rocks come from the weathering and breakage of larger rocks* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes the distribution of water on Earth • Analyzes processes which comprise the water cycle* • Identifies rock types* • Recognizes that clouds and fog are made up of tiny water droplets (condensed from vapor or gaseous form)* • Describes how clouds form* • Gives examples of forms of precipitation* • Classifies rain, sleet, snow, etc., as precipitation* • Recognizes that climate depends on an interaction of factors (e.g., latitude, atmospheric composition, prevailing wind, ocean temperature, pollution)* • Explains how volcanoes cause pollution* • Recognizes that "empty" spaces and containers are not really empty, because they contain air* • Recognizes that air may contain water and particulate pollutants (e.g., pollen, smoke, dust)* • Compares properties of different wind forms (e.g., tornadoes, gusts, breezes, drafts, gales)* • Explains that the Sun is the major source of heat and light for Earth* • Describes the Sun as the major source of energy for Earth* • Explains that the Sun is the major energy source for Earth* • Recognizes that the Sun's light energy is transformed to heat energy upon hitting Earth's surface* • Defines atmosphere as the air surrounding Earth* • Recognizes Earth's three layers* • Orders Earth's three layers* • Analyzes a model that shows Earth's internal structure* • Labels a diagram of Earth to show Earth's core* • Labels a diagram of Earth to show its crust* • Understands that life on Earth would not be able to exist in Earth's mantle and core* |

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| | | <ul style="list-style-type: none"> • Describes weathering* • Explains how weather can cause changes in rocks • Makes inferences about the causes of a change to rock* • Defines erosion as the wearing away or removal of rock or soil from a site* • Recognizes that rapid processes which change Earth's surface include landslides, volcanic eruptions, and earthquakes* • Explains how plate movement produces earthquakes* • Explains how magma and lava are involved in volcanic eruptions |
| Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ |
| <ul style="list-style-type: none"> • Recognizes that the Sun is not a planet* • Describes the Sun, Moon, stars, and Earth* | <ul style="list-style-type: none"> • Recognizes that day and night are caused by the Earth's rotation on its axis* • Explains how the Earth's rotation on its axis causes day and night* • Describes how the Earth's tilt affects seasons* • Explains how Earth's tilt affects the length of daylight during the year* • Explains how Earth's tilt affects the heating of Earth's surface* • Describes components of the solar system* • Identifies the location of planets relative to the sun* • Describes the order of planets and the asteroid belt in the solar system* • Recognizes that stars (like the Sun) are the source of light for all bright objects in space* | <ul style="list-style-type: none"> • Recognizes that day and night are caused by the Earth's rotation on its axis* • Explains that a small object that is close to Earth may appear larger than a bigger object that is more distant from Earth* • Recognizes that the Sun is a medium-sized star • Compares the Sun to other stars and star systems • Describes components of the solar system* • Recognizes that the solar system includes the Sun, nine planets including Earth, the Moon and satellites orbiting other planets, asteroids, and comets* • Describes characteristics of the planet Mars* • Describes the motion of Earth around the Sun* • Analyzes the motion of the Moon around Earth* • Compares Earth to other planets in terms of size* • Describes distance of individual planets from the Sun • Identifies characteristics of planets* • Recognizes that Earth is somewhat unique in its characteristics* • Explains that the Moon and planets shine by reflected sunlight, not their own light* • Identifies daily patterns caused by Earth's rotation* • Explains that gravity is a force producing attraction between matter* |
| <i>New Vocabulary:</i> atmosphere, carbon dioxide, cloud, cool, dew, hot, weather | <i>New Vocabulary:</i> anemometer, autumn, axis, barometer, beach, body of water, condensation, cross section, crystal, daylight, evaporation, fossil, grain, hydrometer, hygrometer, Jupiter, land, Mars, Mercury (planet), metal, night, ocean floor, planet, Pluto, precipitation, revolve, rotate, sand, Saturn, seasonal change, shadow, shell, solar system, stone, store, stratosphere, stream, tar, tilt, Uranus, water cycle, winter | <i>New Vocabulary:</i> asteroid, breeze, comet, condense, crack, decay, dust, Earth's surface, erosion, evaporate, flood, fresh water, galaxy, gale, geographic area, granite, ground, gust, humidity, individual consumption, irrigation, latitude, lava, layer, lightning, lignite, magma, melt, meteor, moon (satellite), nebula, Neptune, obsidian, ocean current, particle, Polaris, prevailing wind, process, reflect, reservoir, Sirius, slate, sublimation, thunder, tide, |

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| | | tornado, transpiration, Venus, water supply, wave, wearing away/down, weathering, wind form |
| <i>New Signs and Symbols: none</i> | <i>New Signs and Symbols: none</i> | <i>New Signs and Symbols: none</i> |

Subject: General Science

Goal Strand: Earth and Space Science

RIT Score Range: 191 - 200

| Skills and Concepts to Enhance 181 - 190 | Skills and Concepts to Develop 191 - 200 | Skills and Concepts to Introduce 201 - 210 |
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| <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Recognizes that Earth is made of land masses surrounded by large bodies of water, and that most of the Earth's surface is covered by water* • Recognizes that oceans are bodies of salt water* • Interprets data related to the composition of the ocean* • Recognizes processes that make up the water cycle* • Describes different types of Earth materials • Analyzes precipitation in weather systems* • Draws conclusions about the role of clouds in reflecting the Sun's light* • Interprets data to identify existing weather conditions • Compares weather from season to season* • Describes seasonal patterns in weather* • Measures air temperature* • Chooses the appropriate tool to measure changes in air temperature (term not used)* • Recognizes that wind is air that is moving around us* • Recognizes that the Sun produces heat and light energy* • Recognizes that the Sun's energy can be stored in objects as heat* • Labels a diagram of Earth to show Earth's core* • Explains that tiny rocks come from the weathering and breakage of larger rocks* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes the distribution of water on Earth • Analyzes processes which comprise the water cycle* • Identifies rock types* • Recognizes that clouds and fog are made up of tiny water droplets (condensed from vapor or gaseous form)* • Describes how clouds form* • Gives examples of forms of precipitation* • Classifies rain, sleet, snow, etc., as precipitation* • Recognizes that climate depends on an interaction of factors (e.g., latitude, atmospheric composition, prevailing wind, ocean temperature, pollution)* • Explains how volcanoes cause pollution* • Recognizes that "empty" spaces and containers are not really empty, because they contain air* • Recognizes that air may contain water and particulate pollutants (e.g., pollen, smoke, dust)* • Compares properties of different wind forms (e.g., tornadoes, gusts, breezes, drafts, gales)* • Explains that the Sun is the major source of heat and light for Earth* • Describes the Sun as the major source of energy for Earth* • Explains that the Sun is the major energy source for Earth* • Recognizes that the Sun's light energy is transformed to heat energy upon hitting Earth's surface* • Defines atmosphere as the air surrounding Earth* • Recognizes Earth's three layers* • Orders Earth's three layers* • Analyzes a model that shows Earth's internal structure* • Labels a diagram of Earth to show Earth's core* • Labels a diagram of Earth to show its crust* • Understands that life on Earth would not be able to exist in Earth's mantle and core* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Defines a spring as underground water which seeps onto the Earth's surface* • Describes physical properties of the ocean* • Describes the movement of water through a complete turn of the water cycle* • Describes the water cycle • Interprets models that show how water is recycled in the Earth system* • Explains why non-renewable resources should not be wasted* • Describes formation of fossil fuels • Describes physical characteristics of different rocks and minerals (e.g., color, hardness, texture, pattern, layering, particle size)* • Describes the process of sedimentary rock formation* • Describes how dew forms on surfaces* • Defines humidity* • Understands that meteorologists use multiple measurements of weather conditions to make forecasts* • Describes how changes in the composition of the atmosphere can affect Earth's climate* • Recognizes that air takes up space • Recognizes that air can cause changes in the environment* • Recognizes that uneven heating of air by the Sun causes convection currents* • Labels diagrams of Earth (three layers) to show Earth's mantle* • Recognizes Earth's three layers* • Orders Earth's three layers* • Describes characteristics of Earth's three layers* • Recognizes characteristics of each layer of Earth (e.g., cold brittle lithosphere, hot convecting mantle, dense metallic core) |

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| | <ul style="list-style-type: none"> • Describes weathering* • Explains how weather can cause changes in rocks • Makes inferences about the causes of a change to rock* • Defines erosion as the wearing away or removal of rock or soil from a site* • Recognizes that rapid processes which change Earth's surface include landslides, volcanic eruptions, and earthquakes* • Explains how plate movement produces earthquakes* • Explains how magma and lava are involved in volcanic eruptions | <ul style="list-style-type: none"> • Recognizes that the Earth is spherical in shape* • Explains why the equator is used to divide the Earth into two hemispheres* • Defines the rock cycle* • Describes ways in which rocks undergo changes from physical weathering • Gives examples of chemical weathering* • Predicts how sediments of different sizes will sort* • Describes how Earth materials erode • Recognizes major agents of erosion* • Interprets data related to the continuous modification of rocks in the rock cycle* • Recognizes that rapid processes which change Earth's surface include landslides, volcanic eruptions, and earthquakes* • Distinguishes among processes that do and do not change Earth's surface* • Infers that Earth's surface is constantly changing* • Describes how destructive forces create land forms* • Explains how processes such as erosion, weathering, and flow cause slow change to Earth's surface features* • Infers that effects of an earthquake depend on its strength* • Understands that earthquakes cause differences in the movement of land* • Describes causes of earthquakes* • Describes tools used to measure earthquakes* • Describes folding and faulting* • Recognizes that plate tectonics is the theory that accounts for the movement of the continents* • Draws conclusions about the past from fossils or fossil data* • Explains how sedimentary rocks record events of Earth's history* • Uses the law of superposition to determine the relative ages of rock layers* • Describes relative dating techniques* |
| Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ |
| <ul style="list-style-type: none"> • Recognizes that day and night are caused by the Earth's rotation on its axis* • Explains how the Earth's rotation on its axis causes day and night* • Describes how the Earth's tilt affects seasons* | <ul style="list-style-type: none"> • Recognizes that day and night are caused by the Earth's rotation on its axis* • Explains that a small object that is close to Earth may appear larger than a bigger object that is more distant from Earth* | <ul style="list-style-type: none"> • Relates the Earth's rotation on its axis to the length of a day* • Explains how Earth's tilt causes seasons* • Explains how the Earth's tilt affects the intensity of sunlight in summer and winter* |

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| <ul style="list-style-type: none"> • Explains how Earth's tilt affects the length of daylight during the year* • Explains how Earth's tilt affects the heating of Earth's surface* • Describes components of the solar system* • Identifies the location of planets relative to the sun* • Describes the order of planets and the asteroid belt in the solar system* • Recognizes that stars (like the Sun) are the source of light for all bright objects in space* | <ul style="list-style-type: none"> • Recognizes that the Sun is a medium-sized star • Compares the Sun to other stars and star systems • Describes components of the solar system* • Recognizes that the solar system includes the Sun, nine planets including Earth, the Moon and satellites orbiting other planets, asteroids, and comets* • Describes characteristics of the planet Mars* • Describes the motion of Earth around the Sun* • Analyzes the motion of the Moon around Earth* • Compares Earth to other planets in terms of size* • Describes distance of individual planets from the Sun • Identifies characteristics of planets* • Recognizes that Earth is somewhat unique in its characteristics* • Explains that the Moon and planets shine by reflected sunlight, not their own light* • Identifies daily patterns caused by Earth's rotation* • Explains that gravity is a force producing attraction between matter* | <ul style="list-style-type: none"> • Analyzes diagrams showing how the relative intensity of sunlight differs in summer and winter* • Explains that astronomical objects are separated by great distances* • Recognizes that the Sun, Moon and planets are spherical in shape* • Describes characteristics of comets* • Compares characteristics of meteors and meteorites* • Describes formation of meteors* • Recognizes how meteor showers are produced* • Describes the relationship between the Moon and the Earth (the Moon is a satellite of the Earth, and therefore orbits around the Earth)* • Recognizes that it takes about 29 days for the Moon to orbit Earth* • Describes how the Moon's surface has been affected by meteorites* • Defines satellite as one body which orbits around another* • Orders the planets in terms of distance from the Sun* • Explains that Earth is the only planet in our solar system that contains water in liquid form* • Explains that the Moon and planets shine by reflected sunlight, not their own light* • Defines constellation* • Explains the concept of a year in terms of a planet's motion* • Explains the concept of a full day and night in terms of Earth's motion* • Explains the phases of the Moon* • Infers that an object thrown up from a planet will not travel as far as an object thrown with the same force from a planet with less gravity* |
| <p><i>New Vocabulary:</i> anemometer, autumn, axis, barometer, beach, body of water, condensation, cross section, crystal, daylight, evaporation, fossil, grain, hydrometer, hygrometer, Jupiter, land, Mars, Mercury (planet), metal, night, ocean floor, planet, Pluto, precipitation, revolve, rotate, sand, Saturn, seasonal change, shadow, shell, solar system, stone, store, stratosphere, stream, tar, tilt, Uranus, water cycle, winter</p> | <p><i>New Vocabulary:</i> asteroid, breeze, comet, condense, crack, decay, dust, Earth's surface, erosion, evaporate, flood, fresh water, galaxy, gale, geographic area, granite, ground, gust, humidity, individual consumption, irrigation, latitude, lava, layer, lightning, lignite, magma, melt, meteor, moon (satellite), nebula, Neptune, obsidian, ocean current, particle, Polaris, prevailing wind, process, reflect, reservoir, Sirius, slate, sublimation, thunder, tide, tornado, transpiration, Venus, water supply, wave, wearing away/down, weathering, wind form</p> | <p><i>New Vocabulary:</i> air pressure, angstrom, basalt, canyon, cavern, compaction, constellation, crater, dam, deposition, Earth's crust, ecological cycle, ellipse, equinox, fault line, faulting, fission, float, folding, forecast, formation, fossil fuel, frost, full moon, funnel, fusion, gaseous, glaciation, glacier, greenhouse effect, igneous rock, landslide, light-year, marble, metamorphic rock, meteorite, meteorologist, new moon, nitrogen cycle, nova, oil well, parent material, porous rock, pumice, rainfall, relative age, rock cycle, rock layer, running water, salinity, sand dune, saturation, sea level, sediment,</p> |

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| | | sedimentary rock, sedimentation, seismograph, sinkhole, tidal wave, trace elements, uranium, vegetation, water pressure, well, wind speed |
| <i>New Signs and Symbols: none</i> | <i>New Signs and Symbols: none</i> | <i>New Signs and Symbols: none</i> |

Subject: General Science

Goal Strand: Earth and Space Science

RIT Score Range: 201 - 210

| Skills and Concepts to Enhance 191 - 200 | Skills and Concepts to Develop 201 - 210 | Skills and Concepts to Introduce 211 - 220 |
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| <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes the distribution of water on Earth • Analyzes processes which comprise the water cycle* • Identifies rock types* • Recognizes that clouds and fog are made up of tiny water droplets (condensed from vapor or gaseous form)* • Describes how clouds form* • Gives examples of forms of precipitation* • Classifies rain, sleet, snow, etc., as precipitation* • Recognizes that climate depends on an interaction of factors (e.g., latitude, atmospheric composition, prevailing wind, ocean temperature, pollution)* • Explains how volcanoes cause pollution* • Recognizes that "empty" spaces and containers are not really empty, because they contain air* • Recognizes that air may contain water and particulate pollutants (e.g., pollen, smoke, dust)* • Compares properties of different wind forms (e.g., tornadoes, gusts, breezes, drafts, gales)* • Explains that the Sun is the major source of heat and light for Earth* • Describes the Sun as the major source of energy for Earth* • Explains that the Sun is the major energy source for Earth* • Recognizes that the Sun's light energy is transformed to heat energy upon hitting Earth's surface* • Defines atmosphere as the air surrounding Earth* • Recognizes Earth's three layers* • Orders Earth's three layers* • Analyzes a model that shows Earth's internal structure* • Labels a diagram of Earth to show Earth's core* • Labels a diagram of Earth to show its crust* • Understands that life on Earth would not be able to exist in Earth's mantle and core* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Defines a spring as underground water which seeps onto the Earth's surface* • Describes physical properties of the ocean* • Describes the movement of water through a complete turn of the water cycle* • Describes the water cycle • Interprets models that show how water is recycled in the Earth system* • Explains why non-renewable resources should not be wasted* • Describes formation of fossil fuels • Describes physical characteristics of different rocks and minerals (e.g., color, hardness, texture, pattern, layering, particle size)* • Describes the process of sedimentary rock formation* • Describes how dew forms on surfaces* • Defines humidity* • Understands that meteorologists use multiple measurements of weather conditions to make forecasts* • Describes how changes in the composition of the atmosphere can affect Earth's climate* • Recognizes that air takes up space • Recognizes that air can cause changes in the environment* • Recognizes that uneven heating of air by the Sun causes convection currents* • Labels diagrams of Earth (three layers) to show Earth's mantle* • Recognizes Earth's three layers* • Orders Earth's three layers* • Describes characteristics of Earth's three layers* • Recognizes characteristics of each layer of Earth (e.g., cold brittle lithosphere, hot convecting mantle, dense metallic core) | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Differentiates among artesian wells, springs and geysers* • Describes the composition of the Earth's bodies of water* • Describes geologic features of the ocean • Orders steps of the water cycle* • Describes processes that make up the water cycle* • Classifies natural resources as renewable or non-renewable • Defines non-renewable natural resources* • Gives examples of renewable and non-renewable resources* • Describes the source of geothermal energy* • Gives examples of igneous rocks* • Describes the process of igneous rock formation* • Recognizes that petrification is the replacement of bone by minerals* • Describes characteristics of sedimentary rock* • Makes inferences about where igneous rocks may be found* • Classifies rocks according to the forces which formed them • Describes humus* • Describes cloud formation in weather systems* • Describes the structure of weather systems (e.g., hurricanes)* • Analyzes humidity in weather systems* • Describes how weather conditions are measured* • Explains how barometric pressure is interpreted • Defines climate* • Explains how uneven heating at the shore/ocean interface by the Sun creates winds* • Analyzes the role of temperature in producing ocean currents* • Describes results of interacting air masses* |

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| <ul style="list-style-type: none"> • Describes weathering* • Explains how weather can cause changes in rocks • Makes inferences about the causes of a change to rock* • Defines erosion as the wearing away or removal of rock or soil from a site* • Recognizes that rapid processes which change Earth's surface include landslides, volcanic eruptions, and earthquakes* • Explains how plate movement produces earthquakes* • Explains how magma and lava are involved in volcanic eruptions | <ul style="list-style-type: none"> • Recognizes that the Earth is spherical in shape* • Explains why the equator is used to divide the Earth into two hemispheres* • Defines the rock cycle* • Describes ways in which rocks undergo changes from physical weathering • Gives examples of chemical weathering* • Predicts how sediments of different sizes will sort* • Describes how Earth materials erode • Recognizes major agents of erosion* • Interprets data related to the continuous modification of rocks in the rock cycle* • Recognizes that rapid processes which change Earth's surface include landslides, volcanic eruptions, and earthquakes* • Distinguishes among processes that do and do not change Earth's surface* • Infers that Earth's surface is constantly changing* • Describes how destructive forces create land forms* • Explains how processes such as erosion, weathering, and flow cause slow change to Earth's surface features* • Infers that effects of an earthquake depend on its strength* • Understands that earthquakes cause differences in the movement of land* • Describes causes of earthquakes* • Describes tools used to measure earthquakes* • Describes folding and faulting* • Recognizes that plate tectonics is the theory that accounts for the movement of the continents* • Draws conclusions about the past from fossils or fossil data* • Explains how sedimentary rocks record events of Earth's history* • Uses the law of superposition to determine the relative ages of rock layers* • Describes relative dating techniques* | <ul style="list-style-type: none"> • Recognizes the Sun's role in the water cycle* • Recognizes the sources of geothermal energy* • Labels a diagram of Earth (four layers) to show Earth's outer core* • Labels a diagram of Earth (four layers) to show Earth's mantle* • Compares weathering and erosion* • Compares agents of erosion* • Describes sequences within the rock cycle that minerals could pass through* • Describes how slow and rapid processes cause the Earth's surface to change constantly • Describes how constructive forces create land forms* • Analyzes the role of destructive forces in shaping Earth's surface* • Gives examples of fault zones* • Recognizes that faults are breakages in rock associated with movement of Earth's plates* • Explains how mountain building is caused by movement of tectonic plates* • Relates plate movement to geologic events • Explains how plate tectonic theory accounts for movement of landforms over time* • Defines magma* • Recognizes that in most fossils, living tissue is replaced with minerals, but in certain fossils (e.g., amber, frozen organisms), biological matter (DNA) may remain* • Describes conditions that are usually needed for a fossil to form • Explains that the geologic processes we observe today have also occurred in the geologic past* |
| <p>Structure, Interactions in Sky, Solar Sys, Univ</p> | <p>Structure, Interactions in Sky, Solar Sys, Univ</p> | <p>Structure, Interactions in Sky, Solar Sys, Univ</p> |
| <ul style="list-style-type: none"> • Recognizes that day and night are caused by the Earth's rotation on its axis* • Explains that a small object that is close to Earth may appear larger than a bigger object that is more distant from Earth* | <ul style="list-style-type: none"> • Relates the Earth's rotation on its axis to the length of a day* • Explains how Earth's tilt causes seasons* • Explains how the Earth's tilt affects the intensity of sunlight in summer and winter* | <ul style="list-style-type: none"> • Defines rotation of planets* • Explains that the direction of Earth's rotation is west to east* • Analyzes diagrams showing the effect of Earth's tilt on seasons* |

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| <ul style="list-style-type: none"> • Recognizes that the Sun is a medium-sized star • Compares the Sun to other stars and star systems • Describes components of the solar system* • Recognizes that the solar system includes the Sun, nine planets including Earth, the Moon and satellites orbiting other planets, asteroids, and comets* • Describes characteristics of the planet Mars* • Describes the motion of Earth around the Sun* • Analyzes the motion of the Moon around Earth* • Compares Earth to other planets in terms of size* • Describes distance of individual planets from the Sun • Identifies characteristics of planets* • Recognizes that Earth is somewhat unique in its characteristics* • Explains that the Moon and planets shine by reflected sunlight, not their own light* • Identifies daily patterns caused by Earth's rotation* • Explains that gravity is a force producing attraction between matter* | <ul style="list-style-type: none"> • Analyzes diagrams showing how the relative intensity of sunlight differs in summer and winter* • Explains that astronomical objects are separated by great distances* • Recognizes that the Sun, Moon and planets are spherical in shape* • Describes characteristics of comets* • Compares characteristics of meteors and meteorites* • Describes formation of meteors* • Recognizes how meteor showers are produced* • Describes the relationship between the Moon and the Earth (the Moon is a satellite of the Earth, and therefore orbits around the Earth)* • Recognizes that it takes about 29 days for the Moon to orbit Earth* • Describes how the Moon's surface has been affected by meteorites* • Defines satellite as one body which orbits around another* • Orders the planets in terms of distance from the Sun* • Explains that Earth is the only planet in our solar system that contains water in liquid form* • Explains that the Moon and planets shine by reflected sunlight, not their own light* • Defines constellation* • Explains the concept of a year in terms of a planet's motion* • Explains the concept of a full day and night in terms of Earth's motion* • Explains the phases of the Moon* • Infers that an object thrown up from a planet will not travel as far as an object thrown with the same force from a planet with less gravity* | <ul style="list-style-type: none"> • Describes chemical and physical characteristics of stars* • Compares characteristics of stars and star systems (e.g., temperature, color, size, elements, energy, number of stars in system)* • Identifies arrangement of bodies within our galaxy* • Describes characteristics of meteors • Classifies asteroids, comets, and meteors, meteoroids and meteorites by location* • Recognizes characteristics of meteorites* • Describes characteristics of the planet Mercury* • Recognizes that the Moon is a natural satellite of Earth* • Compares size of astronomical planets* • Explains the concept of seasons in terms of Earth's motion* • Relates the regular predictable motion of the Earth to the regular length of a year • Identifies the phase of the moon during which a lunar eclipse may occur* • Explains how both the relative mass of the Moon and Sun, as well as their distance from Earth, result in differences in the effect each has on Earth's tides* • Explains the effect of gravity on orbital shape and speed* • Analyzes the effect of gravity on tides • Recognizes that changes in the energy output of the Sun would cause significant changes in Earth processes that depend on the Sun's energy* |
| <p><i>New Vocabulary:</i> asteroid, breeze, comet, condense, crack, decay, dust, Earth's surface, erosion, evaporate, flood, fresh water, galaxy, gale, geographic area, granite, ground, gust, humidity, individual consumption, irrigation, latitude, lava, layer, lightning, lignite, magma, melt, meteor, moon (satellite), nebula, Neptune, obsidian, ocean current, particle, Polaris, prevailing wind, process, reflect, reservoir, Sirius, slate, sublimation, thunder, tide, tornado, transpiration, Venus, water supply, wave, wearing away/down, weathering, wind form</p> | <p><i>New Vocabulary:</i> air pressure, angstrom, basalt, canyon, cavern, compaction, constellation, crater, dam, deposition, Earth's crust, ecological cycle, ellipse, equinox, fault line, faulting, fission, float, folding, forecast, formation, fossil fuel, frost, full moon, funnel, fusion, gaseous, glaciation, glacier, greenhouse effect, igneous rock, landslide, light-year, marble, metamorphic rock, meteorite, meteorologist, new moon, nitrogen cycle, nova, oil well, parent material, porous rock, pumice, rainfall, relative age, rock cycle, rock layer, running water, salinity, sand dune, saturation, sea level, sediment,</p> | <p><i>New Vocabulary:</i> abyssal floor, abyssal plain, agent, air mass, amber, artesian well, ash, atoll, atomic energy, biomass, boundary, cirrus, cold front, continental margin, continental shelf, continental slope, cosmic rays, crustal plate, cyclone, deep-water zone, Earth process, electrical field, erode, eye of a hurricane, fair (weather), falling star, fault, fault zone, fixed orbit, front, geyser, ground water, Halley's Comet, humid, hurricane, igneous, inner core, mercury barometer, mercury thermometer, meteoroid, mid-ocean ridge, Milky Way Galaxy, mudstone, nonrenewable, Northern Hemisphere, nuclear reaction,</p> |

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| | sedimentary rock, sedimentation, seismograph, sinkhole, tidal wave, trace elements, uranium, vegetation, water pressure, well, wind speed | ore, outer core, period of revolution, petrified wood, petroleum, plains, plant matter, plate, preserve, reef, region, renewable, renewable energy, renewable resource, replacement, rift valley, San Andreas fault, sandstone, satellite, sea floor, seamount, seawater, sedimentary, shale, shallow-water zone, shore, submerge, tectonic plate, tidal, tidal forces, tide action, trench, undisturbed, valley, warm front, white dwarf |
| <i>New Signs and Symbols: none</i> | <i>New Signs and Symbols: none</i> | <i>New Signs and Symbols: Ca (Calcium), Cl (Chlorine), Cu (Copper), K (potassium), → leads to (geochemical cycle), Na (sodium), NO₃ (nitrate)</i> |

Subject: General Science

Goal Strand: Earth and Space Science

RIT Score Range: 211 - 220

| Skills and Concepts to Enhance 201 - 210 | Skills and Concepts to Develop 211 - 220 | Skills and Concepts to Introduce 221 - 230 |
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| <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Defines a spring as underground water which seeps onto the Earth's surface* • Describes physical properties of the ocean* • Describes the movement of water through a complete turn of the water cycle* • Describes the water cycle • Interprets models that show how water is recycled in the Earth system* • Explains why non-renewable resources should not be wasted* • Describes formation of fossil fuels • Describes physical characteristics of different rocks and minerals (e.g., color, hardness, texture, pattern, layering, particle size)* • Describes the process of sedimentary rock formation* • Describes how dew forms on surfaces* • Defines humidity* • Understands that meteorologists use multiple measurements of weather conditions to make forecasts* • Describes how changes in the composition of the atmosphere can affect Earth's climate* • Recognizes that air takes up space • Recognizes that air can cause changes in the environment* • Recognizes that uneven heating of air by the Sun causes convection currents* • Labels diagrams of Earth (three layers) to show Earth's mantle* • Recognizes Earth's three layers* • Orders Earth's three layers* • Describes characteristics of Earth's three layers* • Recognizes characteristics of each layer of Earth (e.g., cold brittle lithosphere, hot convecting mantle, dense metallic core) | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Differentiates among artesian wells, springs and geysers* • Describes the composition of the Earth's bodies of water* • Describes geologic features of the ocean • Orders steps of the water cycle* • Describes processes that make up the water cycle* • Classifies natural resources as renewable or non-renewable • Defines non-renewable natural resources* • Gives examples of renewable and non-renewable resources* • Describes the source of geothermal energy* • Gives examples of igneous rocks* • Describes the process of igneous rock formation* • Recognizes that petrification is the replacement of bone by minerals* • Describes characteristics of sedimentary rock* • Makes inferences about where igneous rocks may be found* • Classifies rocks according to the forces which formed them • Describes humus* • Describes cloud formation in weather systems* • Describes the structure of weather systems (e.g., hurricanes)* • Analyzes humidity in weather systems* • Describes how weather conditions are measured* • Explains how barometric pressure is interpreted • Defines climate* • Explains how uneven heating at the shore/ocean interface by the Sun creates winds* • Analyzes the role of temperature in producing ocean currents* • Describes results of interacting air masses* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes chemical properties of the ocean* • Orders steps of the water cycle* • Describes runoff as movement of water across Earth's surface as streams and rivers* • Classifies natural resources as renewable or non-renewable • Relates renewable and non-renewable energy resources to methods of energy production (e.g., tidal power, nuclear energy)* • Describes the makeup of minerals* • Recognizes that each mineral has a specific chemical composition and structure which give it specific physical properties* • Explains that specific properties of a mineral are due to its chemical composition and structure* • Identifies rocks and minerals based on physical properties* • Describes the process of metamorphic rock formation* • Identifies minerals using established methods • Recognizes that the organic material in soil is called humus* • Describes how living things contribute to erosion resistance* • Classifies clouds by composition, height, and type of precipitation* • Explains how uneven heating at the shore/ocean interface by the Sun creates winds* • Relates differences in air pressure to movement of surface winds* • Identifies diagrams illustrating convection* • Describes the composition of Earth's atmosphere* • Interprets data related to formation of Earth materials* • Describes the formation of extrusive and intrusive rocks* • Describes how sedimentation occurs* |

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| <ul style="list-style-type: none"> • Recognizes that the Earth is spherical in shape* • Explains why the equator is used to divide the Earth into two hemispheres* • Defines the rock cycle* • Describes ways in which rocks undergo changes from physical weathering • Gives examples of chemical weathering* • Predicts how sediments of different sizes will sort* • Describes how Earth materials erode • Recognizes major agents of erosion* • Interprets data related to the continuous modification of rocks in the rock cycle* • Recognizes that rapid processes which change Earth's surface include landslides, volcanic eruptions, and earthquakes* • Distinguishes among processes that do and do not change Earth's surface* • Infers that Earth's surface is constantly changing* • Describes how destructive forces create land forms* • Explains how processes such as erosion, weathering, and flow cause slow change to Earth's surface features* • Infers that effects of an earthquake depend on its strength* • Understands that earthquakes cause differences in the movement of land* • Describes causes of earthquakes* • Describes tools used to measure earthquakes* • Describes folding and faulting* • Recognizes that plate tectonics is the theory that accounts for the movement of the continents* • Draws conclusions about the past from fossils or fossil data* • Explains how sedimentary rocks record events of Earth's history* • Uses the law of superposition to determine the relative ages of rock layers* • Describes relative dating techniques* | <ul style="list-style-type: none"> • Recognizes the Sun's role in the water cycle* • Recognizes the sources of geothermal energy* • Labels a diagram of Earth (four layers) to show Earth's outer core* • Labels a diagram of Earth (four layers) to show Earth's mantle* • Compares weathering and erosion* • Compares agents of erosion* • Describes sequences within the rock cycle that minerals could pass through* • Describes how slow and rapid processes cause the Earth's surface to change constantly • Describes how constructive forces create land forms* • Analyzes the role of destructive forces in shaping Earth's surface* • Gives examples of fault zones* • Recognizes that faults are breakages in rock associated with movement of Earth's plates* • Explains how mountain building is caused by movement of tectonic plates* • Relates plate movement to geologic events • Explains how plate tectonic theory accounts for movement of landforms over time* • Defines magma* • Recognizes that in most fossils, living tissue is replaced with minerals, but in certain fossils (e.g., amber, frozen organisms), biological matter (DNA) may remain* • Describes conditions that are usually needed for a fossil to form • Explains that the geologic processes we observe today have also occurred in the geologic past* | <ul style="list-style-type: none"> • Describes sequences within the rock cycle that minerals could pass through* • Analyzes the role of destructive forces in shaping Earth's surface* • Sequences events that occur during a volcanic eruption* • Explains that faults are associated with earthquakes* • Explains that seismographs measure the energy released during an earthquake* • Explains how sea floor spreading is caused by movement of tectonic plates* • Predicts the landform that will result from the collision of two continental plates* • Interprets diagrams showing divergent plate movement • Recognizes that the mid-Atlantic ridge is the result of sea-floor spreading* • Explains features of the Earth's surface using plate tectonic theory* • Recognizes that most of the world's volcanoes are located along the Pacific rim* • Describes the carbon cycle* • Describes the structure of the geological time scale* |
| Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ |
| <ul style="list-style-type: none"> • Relates the Earth's rotation on its axis to the length of a day* • Explains how Earth's tilt causes seasons* • Explains how the Earth's tilt affects the intensity of sunlight in summer and winter* | <ul style="list-style-type: none"> • Defines rotation of planets* • Explains that the direction of Earth's rotation is west to east* • Analyzes diagrams showing the effect of Earth's tilt on seasons* | <ul style="list-style-type: none"> • Describes how the Earth's tilt affects weather patterns* • Names the characteristics used to classify stars* • Explains that part of the Milky Way galaxy can be seen as a bright band of light in the night sky* • Describes characteristics of the planet Jupiter* |

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| <ul style="list-style-type: none"> Analyzes diagrams showing how the relative intensity of sunlight differs in summer and winter* Explains that astronomical objects are separated by great distances* Recognizes that the Sun, Moon and planets are spherical in shape* Describes characteristics of comets* Compares characteristics of meteors and meteorites* Describes formation of meteors* Recognizes how meteor showers are produced* Describes the relationship between the Moon and the Earth (the Moon is a satellite of the Earth, and therefore orbits around the Earth)* Recognizes that it takes about 29 days for the Moon to orbit Earth* Describes how the Moon's surface has been affected by meteorites* Defines satellite as one body which orbits around another* Orders the planets in terms of distance from the Sun* Explains that Earth is the only planet in our solar system that contains water in liquid form* Explains that the Moon and planets shine by reflected sunlight, not their own light* Defines constellation* Explains the concept of a year in terms of a planet's motion* Explains the concept of a full day and night in terms of Earth's motion* Explains the phases of the Moon* Infers that an object thrown up from a planet will not travel as far as an object thrown with the same force from a planet with less gravity* | <ul style="list-style-type: none"> Describes chemical and physical characteristics of stars* Compares characteristics of stars and star systems (e.g., temperature, color, size, elements, energy, number of stars in system)* Identifies arrangement of bodies within our galaxy* Describes characteristics of meteors Classifies asteroids, comets, and meteors, meteoroids and meteorites by location* Recognizes characteristics of meteorites* Describes characteristics of the planet Mercury* Recognizes that the Moon is a natural satellite of Earth* Compares size of astronomical planets* Explains the concept of seasons in terms of Earth's motion* Relates the regular predictable motion of the Earth to the regular length of a year Identifies the phase of the moon during which a lunar eclipse may occur* Explains how both the relative mass of the Moon and Sun, as well as their distance from Earth, result in differences in the effect each has on Earth's tides* Explains the effect of gravity on orbital shape and speed* Analyzes the effect of gravity on tides Recognizes that changes in the energy output of the Sun would cause significant changes in Earth processes that depend on the Sun's energy* | <ul style="list-style-type: none"> Explains that during a solar eclipse, the Moon's shadow falls on the Earth* Identifies the phases of the Moon* Calculates the weight of an object on various planets, when given the acceleration due to gravity for each planet* Analyzes the formation of the solar system* |
| <p><i>New Vocabulary:</i> air pressure, angstrom, basalt, canyon, cavern, compaction, constellation, crater, dam, deposition, Earth's crust, ecological cycle, ellipse, equinox, fault line, faulting, fission, float, folding, forecast, formation, fossil fuel, frost, full moon, funnel, fusion, gaseous, glaciation, glacier, greenhouse effect, igneous rock, landslide, light-year, marble, metamorphic rock, meteorite, meteorologist, new moon, nitrogen cycle, nova, oil well, parent material, porous rock, pumice, rainfall, relative age, rock cycle, rock layer, running water, salinity, sand dune, saturation, sea level, sediment,</p> | <p><i>New Vocabulary:</i> abyssal floor, abyssal plain, agent, air mass, amber, artesian well, ash, atoll, atomic energy, biomass, boundary, cirrus, cold front, continental margin, continental shelf, continental slope, cosmic rays, crustal plate, cyclone, deep-water zone, Earth process, electrical field, erode, eye of a hurricane, fair (weather), falling star, fault, fault zone, fixed orbit, front, geyser, ground water, Halley's Comet, humid, hurricane, igneous, inner core, mercury barometer, mercury thermometer, meteoroid, mid-ocean ridge, Milky Way Galaxy, mudstone, nonrenewable, Northern Hemisphere, nuclear reaction,</p> | <p><i>New Vocabulary:</i> aquifer, asteroid belt, breccia, convergent plate boundary, cover crop, cumulus, delta, divergent plate boundary, embed, erupt, extrusive, flow, fracture, gold, hydroelectric power, location, lowland, metallic, methane, Milky Way, nimbus, oceanic crust, oil deposit, rock face, runoff, seashell, separate, settle, sift, solar power, star cluster, stratus, streak (test), subduction boundary, subsoil, surface wind, thunderhead, tidal power, volcanic action</p> |

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| sedimentary rock, sedimentation, seismograph, sinkhole, tidal wave, trace elements, uranium, vegetation, water pressure, well, wind speed | ore, outer core, period of revolution, petrified wood, petroleum, plains, plant matter, plate, preserve, reef, region, renewable, renewable energy, renewable resource, replacement, rift valley, San Andreas fault, sandstone, satellite, sea floor, seamount, seawater, sedimentary, shale, shallow-water zone, shore, submerge, tectonic plate, tidal, tidal forces, tide action, trench, undisturbed, valley, warm front, white dwarf | |
| <i>New Signs and Symbols:</i> none | <i>New Signs and Symbols:</i> Ca (Calcium), Cl (Chlorine), Cu (Copper), K (potassium), → leads to (geochemical cycle), Na (sodium), NO ₃ (nitrate) | <i>New Signs and Symbols:</i> none |

Subject: General Science

Goal Strand: Earth and Space Science

RIT Score Range: 221 - 230

| Skills and Concepts to Enhance 211 - 220 | Skills and Concepts to Develop 221 - 230 | Skills and Concepts to Introduce 231 - 240 |
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| <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Differentiates among artesian wells, springs and geysers* • Describes the composition of the Earth's bodies of water* • Describes geologic features of the ocean • Orders steps of the water cycle* • Describes processes that make up the water cycle* • Classifies natural resources as renewable or non-renewable • Defines non-renewable natural resources* • Gives examples of renewable and non-renewable resources* • Describes the source of geothermal energy* • Gives examples of igneous rocks* • Describes the process of igneous rock formation* • Recognizes that petrification is the replacement of bone by minerals* • Describes characteristics of sedimentary rock* • Makes inferences about where igneous rocks may be found* • Classifies rocks according to the forces which formed them • Describes humus* • Describes cloud formation in weather systems* • Describes the structure of weather systems (e.g., hurricanes)* • Analyzes humidity in weather systems* • Describes how weather conditions are measured* • Explains how barometric pressure is interpreted • Defines climate* • Explains how uneven heating at the shore/ocean interface by the Sun creates winds* • Analyzes the role of temperature in producing ocean currents* • Describes results of interacting air masses* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes chemical properties of the ocean* • Orders steps of the water cycle* • Describes runoff as movement of water across Earth's surface as streams and rivers* • Classifies natural resources as renewable or non-renewable • Relates renewable and non-renewable energy resources to methods of energy production (e.g., tidal power, nuclear energy)* • Describes the makeup of minerals* • Recognizes that each mineral has a specific chemical composition and structure which give it specific physical properties* • Explains that specific properties of a mineral are due to its chemical composition and structure* • Identifies rocks and minerals based on physical properties* • Describes the process of metamorphic rock formation* • Identifies minerals using established methods • Recognizes that the organic material in soil is called humus* • Describes how living things contribute to erosion resistance* • Classifies clouds by composition, height, and type of precipitation* • Explains how uneven heating at the shore/ocean interface by the Sun creates winds* • Relates differences in air pressure to movement of surface winds* • Identifies diagrams illustrating convection* • Describes the composition of Earth's atmosphere* • Interprets data related to formation of Earth materials* • Describes the formation of extrusive and intrusive rocks* • Describes how sedimentation occurs* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Orders steps of the water cycle* • Relates the characteristics of igneous rocks to the conditions of their formation* • Classifies rocks according to composition* • Makes inferences from data about dew formation* • Predicts the movement of air that will result from uneven heating of air at the ocean shore interface* • Describes climate conditions accompanying high and low pressure systems* • Recognizes that oxygen is an agent of chemical weathering* • Recognizes agents of chemical weathering* • Describes the measurement of an earthquake's magnitude using the Richter scale* • Explains how volcanic eruptions are caused by movement of tectonic plates* • Explains how sea floor spreading is caused by movement of tectonic plates* • Explains how plate movement produces sea floor spreading* • Predicts what will result from the collision of two oceanic plates* • Recognizes the carbon cycle* |

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| <ul style="list-style-type: none"> • Recognizes the Sun's role in the water cycle* • Recognizes the sources of geothermal energy* • Labels a diagram of Earth (four layers) to show Earth's outer core* • Labels a diagram of Earth (four layers) to show Earth's mantle* • Compares weathering and erosion* • Compares agents of erosion* • Describes sequences within the rock cycle that minerals could pass through* • Describes how slow and rapid processes cause the Earth's surface to change constantly • Describes how constructive forces create land forms* • Analyzes the role of destructive forces in shaping Earth's surface* • Gives examples of fault zones* • Recognizes that faults are breakages in rock associated with movement of Earth's plates* • Explains how mountain building is caused by movement of tectonic plates* • Relates plate movement to geologic events • Explains how plate tectonic theory accounts for movement of landforms over time* • Defines magma* • Recognizes that in most fossils, living tissue is replaced with minerals, but in certain fossils (e.g., amber, frozen organisms), biological matter (DNA) may remain* • Describes conditions that are usually needed for a fossil to form • Explains that the geologic processes we observe today have also occurred in the geologic past* | <ul style="list-style-type: none"> • Describes sequences within the rock cycle that minerals could pass through* • Analyzes the role of destructive forces in shaping Earth's surface* • Sequences events that occur during a volcanic eruption* • Explains that faults are associated with earthquakes* • Explains that seismographs measure the energy released during an earthquake* • Explains how sea floor spreading is caused by movement of tectonic plates* • Predicts the landform that will result from the collision of two continental plates* • Interprets diagrams showing divergent plate movement • Recognizes that the mid-Atlantic ridge is the result of sea-floor spreading* • Explains features of the Earth's surface using plate tectonic theory* • Recognizes that most of the world's volcanoes are located along the Pacific rim* • Describes the carbon cycle* • Describes the structure of the geological time scale* | |
| Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ |
| <ul style="list-style-type: none"> • Defines rotation of planets* • Explains that the direction of Earth's rotation is west to east* • Analyzes diagrams showing the effect of Earth's tilt on seasons* • Describes chemical and physical characteristics of stars* • Compares characteristics of stars and star systems (e.g., temperature, color, size, elements, energy, number of stars in system)* • Identifies arrangement of bodies within our galaxy* • Describes characteristics of meteors | <ul style="list-style-type: none"> • Describes how the Earth's tilt affects weather patterns* • Names the characteristics used to classify stars* • Explains that part of the Milky Way galaxy can be seen as a bright band of light in the night sky* • Describes characteristics of the planet Jupiter* • Explains that during a solar eclipse, the Moon's shadow falls on the Earth* • Identifies the phases of the Moon* • Calculates the weight of an object on various planets, when given the acceleration due to gravity for each planet* | <ul style="list-style-type: none"> • Describes the relationship between the Coriolis effect and wind patterns* • Describes characteristics of the solar system* • Classifies comets and asteroids by the shape of their orbits* • Compares composition of planets* • Determines how the Earth moves in relation to the Moon* • Uses models to show how the relative location of the Sun, Moon, and Earth are responsible for tides* • Recognizes that the planets are kept in orbit around the Sun due to gravity and inertia* |

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| <ul style="list-style-type: none"> • Classifies asteroids, comets, and meteors, meteoroids and meteorites by location* • Recognizes characteristics of meteorites* • Describes characteristics of the planet Mercury* • Recognizes that the Moon is a natural satellite of Earth* • Compares size of astronomical planets* • Explains the concept of seasons in terms of Earth's motion* • Relates the regular predictable motion of the Earth to the regular length of a year • Identifies the phase of the moon during which a lunar eclipse may occur* • Explains how both the relative mass of the Moon and Sun, as well as their distance from Earth, result in differences in the effect each has on Earth's tides* • Explains the effect of gravity on orbital shape and speed* • Analyzes the effect of gravity on tides • Recognizes that changes in the energy output of the Sun would cause significant changes in Earth processes that depend on the Sun's energy* | <ul style="list-style-type: none"> • Analyzes the formation of the solar system* | <ul style="list-style-type: none"> • Describes the effects of gravity on Earth's motion* • Infers that a spacecraft or object attempting to leave a larger planet will require more force than when leaving a smaller planet, due to differences in gravity between the two planets* • Describes the life cycle of a star (stellar evolution)* |
| <p><i>New Vocabulary:</i> abyssal floor, abyssal plain, agent, air mass, amber, artesian well, ash, atoll, atomic energy, biomass, boundary, cirrus, cold front, continental margin, continental shelf, continental slope, cosmic rays, crustal plate, cyclone, deep-water zone, Earth process, electrical field, erode, eye of a hurricane, fair (weather), falling star, fault, fault zone, fixed orbit, front, geyser, ground water, Halley's Comet, humid, hurricane, igneous, inner core, mercury barometer, mercury thermometer, meteoroid, mid-ocean ridge, Milky Way Galaxy, mudstone, nonrenewable, Northern Hemisphere, nuclear reaction, ore, outer core, period of revolution, petrified wood, petroleum, plains, plant matter, plate, preserve, reef, region, renewable, renewable energy, renewable resource, replacement, rift valley, San Andreas fault, sandstone, satellite, sea floor, seamount, seawater, sedimentary, shale, shallow-water zone, shore, submerge, tectonic plate, tidal, tidal forces, tide action, trench, undisturbed, valley, warm front, white dwarf</p> | <p><i>New Vocabulary:</i> aquifer, asteroid belt, breccia, convergent plate boundary, cover crop, cumulus, delta, divergent plate boundary, embed, erupt, extrusive, flow, fracture, gold, hydroelectric power, location, lowland, metallic, methane, Milky Way, nimbus, oceanic crust, oil deposit, rock face, runoff, seashell, separate, settle, sift, solar power, star cluster, stratus, streak (test), subduction boundary, subsoil, surface wind, thunderhead, tidal power, volcanic action</p> | <p><i>New Vocabulary:</i> climate condition, conglomerate, deep-sea trench, ebb tide, flood tide, high pressure system, high tide, low tide, Richter scale, siltstone</p> |
| <p><i>New Signs and Symbols:</i> Ca (Calcium), Cl (Chlorine), Cu (Copper), K (potassium), → leads to (geochemical cycle), Na (sodium), NO₃ (nitrate)</p> | <p><i>New Signs and Symbols:</i> none</p> | <p><i>New Signs and Symbols:</i> none</p> |

Subject: General Science

Goal Strand: Earth and Space Science

RIT Score Range: 231 - 240

| Skills and Concepts to Enhance 221 - 230 | Skills and Concepts to Develop 231 - 240 | Skills and Concepts to Introduce 241 - 250 |
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| <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes chemical properties of the ocean* • Orders steps of the water cycle* • Describes runoff as movement of water across Earth's surface as streams and rivers* • Classifies natural resources as renewable or non-renewable • Relates renewable and non-renewable energy resources to methods of energy production (e.g., tidal power, nuclear energy)* • Describes the makeup of minerals* • Recognizes that each mineral has a specific chemical composition and structure which give it specific physical properties* • Explains that specific properties of a mineral are due to its chemical composition and structure* • Identifies rocks and minerals based on physical properties* • Describes the process of metamorphic rock formation* • Identifies minerals using established methods • Recognizes that the organic material in soil is called humus* • Describes how living things contribute to erosion resistance* • Classifies clouds by composition, height, and type of precipitation* • Explains how uneven heating at the shore/ocean interface by the Sun creates winds* • Relates differences in air pressure to movement of surface winds* • Identifies diagrams illustrating convection* • Describes the composition of Earth's atmosphere* • Interprets data related to formation of Earth materials* • Describes the formation of extrusive and intrusive rocks* • Describes how sedimentation occurs* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Orders steps of the water cycle* • Relates the characteristics of igneous rocks to the conditions of their formation* • Classifies rocks according to composition* • Makes inferences from data about dew formation* • Predicts the movement of air that will result from uneven heating of air at the ocean shore interface* • Describes climate conditions accompanying high and low pressure systems* • Recognizes that oxygen is an agent of chemical weathering* • Recognizes agents of chemical weathering* • Describes the measurement of an earthquake's magnitude using the Richter scale* • Explains how volcanic eruptions are caused by movement of tectonic plates* • Explains how sea floor spreading is caused by movement of tectonic plates* • Explains how plate movement produces sea floor spreading* • Predicts what will result from the collision of two oceanic plates* • Recognizes the carbon cycle* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes the relative abundance of minerals in Earth's crust* • Compares wind speed of storms* • Predicts where sedimentation will occur in a meandering stream* • Predicts what will result from the collision of two oceanic plates* • Describes oxygen cycle* |

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| <ul style="list-style-type: none"> • Describes sequences within the rock cycle that minerals could pass through* • Analyzes the role of destructive forces in shaping Earth's surface* • Sequences events that occur during a volcanic eruption* • Explains that faults are associated with earthquakes* • Explains that seismographs measure the energy released during an earthquake* • Explains how sea floor spreading is caused by movement of tectonic plates* • Predicts the landform that will result from the collision of two continental plates* • Interprets diagrams showing divergent plate movement • Recognizes that the mid-Atlantic ridge is the result of sea-floor spreading* • Explains features of the Earth's surface using plate tectonic theory* • Recognizes that most of the world's volcanoes are located along the Pacific rim* • Describes the carbon cycle* • Describes the structure of the geological time scale* | | |
| Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ | Structure, Interactions in Sky, Solar Sys, Univ |
| <ul style="list-style-type: none"> • Describes how the Earth's tilt affects weather patterns* • Names the characteristics used to classify stars* • Explains that part of the Milky Way galaxy can be seen as a bright band of light in the night sky* • Describes characteristics of the planet Jupiter* • Explains that during a solar eclipse, the Moon's shadow falls on the Earth* • Identifies the phases of the Moon* • Calculates the weight of an object on various planets, when given the acceleration due to gravity for each planet* • Analyzes the formation of the solar system* | <ul style="list-style-type: none"> • Describes the relationship between the Coriolis effect and wind patterns* • Describes characteristics of the solar system* • Classifies comets and asteroids by the shape of their orbits* • Compares composition of planets* • Determines how the Earth moves in relation to the Moon* • Uses models to show how the relative location of the Sun, Moon, and Earth are responsible for tides* • Recognizes that the planets are kept in orbit around the Sun due to gravity and inertia* • Describes the effects of gravity on Earth's motion* • Infers that a spacecraft or object attempting to leave a larger planet will require more force than when leaving a smaller planet, due to differences in gravity between the two planets* • Describes the life cycle of a star (stellar evolution)* | |
| <i>New Vocabulary:</i> aquifer, asteroid belt, breccia, convergent plate boundary, cover crop, cumulus, delta, divergent plate boundary, embed, erupt, extrusive, flow, | <i>New Vocabulary:</i> climate condition, conglomerate, deep-sea trench, ebb tide, flood tide, high pressure system, high tide, low tide, Richter scale, siltstone | <i>New Vocabulary:</i> none |

| | | |
|---|------------------------------------|------------------------------------|
| fracture, gold, hydroelectric power, location, lowland, metallic, methane, Milky Way, nimbus, oceanic crust, oil deposit, rock face, runoff, seashell, separate, settle, sift, solar power, star cluster, stratus, streak (test), subduction boundary, subsoil, surface wind, thunderhead, tidal power, volcanic action | | |
| <i>New Signs and Symbols: none</i> | <i>New Signs and Symbols: none</i> | <i>New Signs and Symbols: none</i> |

Subject: General Science

Goal Strand: Earth and Space Science

RIT Score Range: 241 - 250

| Skills and Concepts to Enhance 231 - 240 | Skills and Concepts to Develop 241 - 250 | Skills and Concepts to Introduce Above 250 |
|--|--|---|
| <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Orders steps of the water cycle* • Relates the characteristics of igneous rocks to the conditions of their formation* • Classifies rocks according to composition* • Makes inferences from data about dew formation* • Predicts the movement of air that will result from uneven heating of air at the ocean shore interface* • Describes climate conditions accompanying high and low pressure systems* • Recognizes that oxygen is an agent of chemical weathering* • Recognizes agents of chemical weathering* • Describes the measurement of an earthquake's magnitude using the Richter scale* • Explains how volcanic eruptions are caused by movement of tectonic plates* • Explains how sea floor spreading is caused by movement of tectonic plates* • Explains how plate movement produces sea floor spreading* • Predicts what will result from the collision of two oceanic plates* • Recognizes the carbon cycle* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes the relative abundance of minerals in Earth's crust* • Compares wind speed of storms* • Predicts where sedimentation will occur in a meandering stream* • Predicts what will result from the collision of two oceanic plates* • Describes oxygen cycle* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes the movement of P, S, and L waves through the Earth* |
| <p>Structure, Interactions in Sky, Solar Sys, Univ</p> <ul style="list-style-type: none"> • Describes the relationship between the Coriolis effect and wind patterns* • Describes characteristics of the solar system* • Classifies comets and asteroids by the shape of their orbits* • Compares composition of planets* • Determines how the Earth moves in relation to the Moon* • Uses models to show how the relative location of the Sun, Moon, and Earth are responsible for tides* • Recognizes that the planets are kept in orbit around the | <p>Structure, Interactions in Sky, Solar Sys, Univ</p> | <p>Structure, Interactions in Sky, Solar Sys, Univ</p> |

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|--|---|---|
| <p>Sun due to gravity and inertia*</p> <ul style="list-style-type: none"> • Describes the effects of gravity on Earth's motion* • Infers that a spacecraft or object attempting to leave a larger planet will require more force than when leaving a smaller planet, due to differences in gravity between the two planets* • Describes the life cycle of a star (stellar evolution)* | | |
| <p><i>New Vocabulary:</i> climate condition, conglomerate, deep-sea trench, ebb tide, flood tide, high pressure system, high tide, low tide, Richter scale, siltstone</p> | <p><i>New Vocabulary:</i> none</p> | <p><i>New Vocabulary:</i> none</p> |
| <p><i>New Signs and Symbols:</i> none</p> | <p><i>New Signs and Symbols:</i> none</p> | <p><i>New Signs and Symbols:</i> none</p> |

Subject: General Science

Goal Strand: Earth and Space Science

RIT Score Range: Above 250

| Skills and Concepts to Enhance 241 - 250 | Skills and Concepts to Develop Above 250 |
|--|---|
| <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes the relative abundance of minerals in Earth's crust* • Compares wind speed of storms* • Predicts where sedimentation will occur in a meandering stream* • Predicts what will result from the collision of two oceanic plates* • Describes oxygen cycle* | <p>Structure and Interactions in the Earth System</p> <ul style="list-style-type: none"> • Describes the movement of P, S, and L waves through the Earth* |
| <p>Structure, Interactions in Sky, Solar Sys, Univ</p> | <p>Structure, Interactions in Sky, Solar Sys, Univ</p> |
| <p><i>New Vocabulary: none</i></p> | <p><i>New Vocabulary: none</i></p> |
| <p><i>New Signs and Symbols: none</i></p> | <p><i>New Signs and Symbols: none</i></p> |