

General Science

Contents

Goal Strand: Physical Science	1
RIT Score Range: Below 181	1
RIT Score Range: 181 - 190	2
RIT Score Range: 191 - 200	4
RIT Score Range: 201 - 210	7
RIT Score Range: 211 - 220	11
RIT Score Range: 221 - 230	15
RIT Score Range: 231 - 240	19
RIT Score Range: 241 - 250	22
RIT Score Range: Above 250.....	24
Goal Strand: Life Science	25
RIT Score Range: Below 171	25
RIT Score Range: 171 - 180	26
RIT Score Range: 181 - 190	28
RIT Score Range: 191 - 200	30
RIT Score Range: 201 - 210	33
RIT Score Range: 211 - 220	36
RIT Score Range: 221 - 230	40
RIT Score Range: 231 - 240	43
RIT Score Range: Above 240.....	46
Goal Strand: Earth Systems Science	48
RIT Score Range: Below 171	48
RIT Score Range: 171 - 180	49
RIT Score Range: 181 - 190	51
RIT Score Range: 191 - 200	53
RIT Score Range: 201 - 210	56
RIT Score Range: 211 - 220	59
RIT Score Range: 221 - 230	62
RIT Score Range: 231 - 240	65
RIT Score Range: 241 - 250	67
RIT Score Range: Above 250.....	69

Subject: General Science
 Goal Strand: Physical Science
 RIT Score Range: Below 181

Skills and Concepts to Develop Below 181	Skills and Concepts to Introduce 181 - 190
Matter: States, Chemical and Physical Changes	Matter: States, Chemical and Physical Changes
<ul style="list-style-type: none"> Classifies objects as liquids* 	<ul style="list-style-type: none"> Recognizes that physical properties can be measured using tools* Identifies tools used to measure length Recognizes that temperature is measured in degrees* Gives examples of gases* Classifies objects as liquids* Classifies objects as gases Gives examples of water in each state of matter Explains that the amount of water in an open container will decrease because it goes into the air, but the amount of water in a closed container will remain the same* Interprets data related to freezing*
Matter: Structure and Properties	Matter: Structure and Properties
<ul style="list-style-type: none"> Sorts natural and manufactured materials by weight* 	
Force and Motion, Newton's Laws	Force and Motion, Newton's Laws
<ul style="list-style-type: none"> Recognizes that pushing or pulling an object can cause a change in the object's position and motion* 	<ul style="list-style-type: none"> Relates movement of objects to the application of force* Describes everyday situations in terms of forces* Recognizes that the force of gravity acts at a distance, without touching, pulling all objects toward Earth* Explains that gravity pulls on all objects on or near Earth towards Earth's center*
Energy: Forms, Transfer, Transformation, Waves	Energy: Forms, Transfer, Transformation, Waves
<ul style="list-style-type: none"> Recognizes that things that give off light often also give off heat* Identifies objects that produce color from white light* 	<ul style="list-style-type: none"> Gives examples of forms of energy* Explains that energy is needed to do work* Identifies uses of energy* Infers that shiny objects reflect light* Describes how sound is transmitted*
<i>New Vocabulary:</i> cloud, fog, gas, hail, ice, sleet, smog, snow	<i>New Vocabulary:</i> balance (scale), calorie, cohesion, conservation, Coriolis force, degree, efficiency, electrical force, friction, iron, load, magnetism, magnifying glass, measuring cup, metal, polarization, sand, spring scale, steam, tool, unit of measure, water vapor, work
<i>New Signs and Symbols:</i> none	<i>New Signs and Symbols:</i> none

Subject: General Science
Goal Strand: Physical Science
RIT Score Range: 181 - 190

Skills and Concepts to Enhance Below 181	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> Classifies objects as liquids* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> Recognizes that physical properties can be measured using tools* Identifies tools used to measure length Recognizes that temperature is measured in degrees* Gives examples of gases* Classifies objects as liquids* Classifies objects as gases Gives examples of water in each state of matter Explains that the amount of water in an open container will decrease because it goes into the air, but the amount of water in a closed container will remain the same* Interprets data related to freezing* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> Relates density to the ability to sink or float* Infers the mass of objects with identical volume, based on their buoyancy* Distinguishes between chemical and physical changes* Describes ways to separate mixtures* Names the three different states of matter Describes basic properties of solids, liquids, and gases Gives examples of solids* Classifies objects as solids, liquids, or gases* Recognizes that water can undergo changes in state (e.g., solid, liquid, gas)* Recognizes that ice is the solid form of water* Describes the process of evaporation* Describes the process of melting Makes inferences about phase changes in matter Gives examples of forms of matter which have undergone a change from liquid to solid form*
<p>Matter: Structure and Properties</p> <ul style="list-style-type: none"> Sorts natural and manufactured materials by weight* 	<p>Matter: Structure and Properties</p>	<p>Matter: Structure and Properties</p> <ul style="list-style-type: none"> Generalizes that all physical objects are made of matter Infers that the more matter in an object, the greater the mass of that object* Determines the volume of an object using the displacement method* Recognizes that adding an object to a container of water will raise the water level within the container* Explains that all matter is made of tiny particles called atoms* Describes the shape of crystals*
<p>Force and Motion, Newton's Laws</p> <ul style="list-style-type: none"> Recognizes that pushing or pulling an object can cause a change in the object's position and motion* 	<p>Force and Motion, Newton's Laws</p> <ul style="list-style-type: none"> Relates movement of objects to the application of force* Describes everyday situations in terms of forces* Recognizes that the force of gravity acts at a distance, without touching, pulling all objects toward Earth* Explains that gravity pulls on all objects on or near 	<p>Force and Motion, Newton's Laws</p> <ul style="list-style-type: none"> Interprets graphs of motion* Defines a force as a push or pull on an object Applies Newton's second law (the interrelationship between force, mass, and acceleration) to everyday objects, such as teeter-totters/see-saws* Defines gravity*

	Earth towards Earth's center*	<ul style="list-style-type: none"> • Infers that there is a force that keeps us connected to Earth* • Explains that gravity pulls on all objects on or near Earth towards Earth's center*
Energy: Forms, Transfer, Transformation, Waves	Energy: Forms, Transfer, Transformation, Waves	Energy: Forms, Transfer, Transformation, Waves
<ul style="list-style-type: none"> • Recognizes that things that give off light often also give off heat* • Identifies objects that produce color from white light* 	<ul style="list-style-type: none"> • Gives examples of forms of energy* • Explains that energy is needed to do work* • Identifies uses of energy* • Infers that shiny objects reflect light* • Describes how sound is transmitted* 	<ul style="list-style-type: none"> • Compares electrical insulating ability of different materials* • Gives examples of electrical conductors* • Analyzes parallel circuits* • Makes inferences about the working of circuits • Recognizes a simple circuit* • Gives examples of objects that use electrical energy* • Explains that energy is needed to do work* • Explains that we can see objects that do not give off light because these objects reflect light* • Understands that black objects absorb more light than lighter colored objects • Explains why light-colored objects feel cooler than dark colored objects* • Explains how sound is produced • Makes inferences about echoes* • Understands that longer tubes and strings produce "lower" sounds than shorter tubes and strings (term "pitch" not used)* • Explains that sound moves through objects by causing particles to vibrate* • Defines volume* • Defines vibration*
<i>New Vocabulary:</i> cloud, fog, gas, hail, ice, sleet, smog, snow	<i>New Vocabulary:</i> balance (scale), calorie, cohesion, conservation, Coriolis force, degree, efficiency, electrical force, friction, iron, load, magnetism, magnifying glass, measuring cup, metal, polarization, sand, spring scale, steam, tool, unit of measure, water vapor, work	<i>New Vocabulary:</i> boil, broken (circuit), circuit, complete (circuit), compound, condense, container, cubic, diffuse, direct (sunlight), discharge, dissolve, echo, electrical conductor, electrical energy, element, evaporate, field, fulcrum, fused (circuit), ground, ground wire, heat energy, high-pitched, hydrogen, insulate, lever, light switch, loud, low-pitched, lubricant, melt, mix, nitrogen, nonmetal, particle, penetrate, phase, physical universe, pitch, polarize, reflect, refract, simple circuit, solute, solvent, state, states of matter, substance, thaw, vapor, vibrate, vibration, waterwheel, wave
<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: Physical 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
<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> • Recognizes that physical properties can be measured using tools* • Identifies tools used to measure length • Recognizes that temperature is measured in degrees* • Gives examples of gases* • Classifies objects as liquids* • Classifies objects as gases • Gives examples of water in each state of matter • Explains that the amount of water in an open container will decrease because it goes into the air, but the amount of water in a closed container will remain the same* • Interprets data related to freezing* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> • Relates density to the ability to sink or float* • Infers the mass of objects with identical volume, based on their buoyancy* • Distinguishes between chemical and physical changes* • Describes ways to separate mixtures* • Names the three different states of matter • Describes basic properties of solids, liquids, and gases • Gives examples of solids* • Classifies objects as solids, liquids, or gases* • Recognizes that water can undergo changes in state (e.g., solid, liquid, gas)* • Recognizes that ice is the solid form of water* • Describes the process of evaporation* • Describes the process of melting • Makes inferences about phase changes in matter • Gives examples of forms of matter which have undergone a change from liquid to solid form* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> • Compares objects in terms of density* • Predicts how changes in temperature will affect the density of an object* • Defines density* • Recognizes that when one divides mass by volume, one is calculating density* • Infers that an object is more dense than an object with the same volume, based on differences in mass (as measured by a double-pan balance) • Gives examples of changes in which new substances with new chemical properties are produced* • Defines mixture* • Names the three different states of matter • Describes how water exists in three states • Recognizes that water expands as it freezes* • Describes the process of evaporation* • Recognizes that evaporation changes a liquid to a gas* • Gives examples of evaporation* • Relates surface area to evaporation • Describes the process of evaporation in terms of the changes to the molecules involved* • Describes the process of freezing • Describes applications of differential expansion of metals* • Explains that heating or cooling materials can cause their state to change* • Explains that matter can change from one physical state to another* • Recognizes signs of a chemical reaction (e.g., formation of gas, color change, precipitate) • Infers that a chemical reaction has occurred* • Relates weight to gravity (e.g., if the gravity acting on an object increases, due to a change in distance or a change in mass of the other object, the weight of an object of constant mass will also increase)*

Matter: Structure and Properties	Matter: Structure and Properties	Matter: Structure and Properties
	<ul style="list-style-type: none"> • Generalizes that all physical objects are made of matter • Infers that the more matter in an object, the greater the mass of that object* • Determines the volume of an object using the displacement method* • Recognizes that adding an object to a container of water will raise the water level within the container* • Explains that all matter is made of tiny particles called atoms* • Describes the shape of crystals* 	<ul style="list-style-type: none"> • Defines matter as anything that takes up space and has mass* • Recognizes that a magnifier allows one to see details that are not otherwise visible* • Compares objects in terms of mass* • Determines the volume of an object using the displacement method* • Estimates length of common objects using metric units* • Explains that as heat is applied to a substance, the particles making up the substance increase their motion • Explains that the periodic table is organized into rows and columns* • Explains that all matter is made of tiny particles called atoms* • Recognizes that atoms are composed of smaller particles (e.g., protons, neutrons, and electrons)* • Recognizes symbols for elements and compounds* • Determines the number of atoms in a compound when given its formula*
Force and Motion, Newton's Laws	Force and Motion, Newton's Laws	Force and Motion, Newton's Laws
<ul style="list-style-type: none"> • Relates movement of objects to the application of force* • Describes everyday situations in terms of forces* • Recognizes that the force of gravity acts at a distance, without touching, pulling all objects toward Earth* • Explains that gravity pulls on all objects on or near Earth towards Earth's center* 	<ul style="list-style-type: none"> • Interprets graphs of motion* • Defines a force as a push or pull on an object • Applies Newton's second law (the interrelationship between force, mass, and acceleration) to everyday objects, such as teeter-totters/see-saws* • Defines gravity* • Infers that there is a force that keeps us connected to Earth* • Explains that gravity pulls on all objects on or near Earth towards Earth's center* 	<ul style="list-style-type: none"> • Describes how forces may create equilibrium for an object* • Analyzes how air resistance influences the relative motion of objects* • Explains how frictional forces affect motion* • Determines the relative gravitational attraction among planets based on mass and/or distance* • Describes the effects of Earth's gravity on objects*
Energy: Forms, Transfer, Transformation, Waves	Energy: Forms, Transfer, Transformation, Waves	Energy: Forms, Transfer, Transformation, Waves
<ul style="list-style-type: none"> • Gives examples of forms of energy* • Explains that energy is needed to do work* • Identifies uses of energy* • Infers that shiny objects reflect light* • Describes how sound is transmitted* 	<ul style="list-style-type: none"> • Compares electrical insulating ability of different materials* • Gives examples of electrical conductors* • Analyzes parallel circuits* • Makes inferences about the working of circuits • Recognizes a simple circuit* • Gives examples of objects that use electrical energy* • Explains that energy is needed to do work* • Explains that we can see objects that do not give off 	<ul style="list-style-type: none"> • Describes formation of fossil fuels • Analyzes direct current electrical circuits* • Gives examples of electrical insulators* • Analyzes the parts of a light bulb* • Distinguishes between open and closed circuits* • Explains how fuses are used in electrical circuits* • Understands that sound is a form of energy* • Relates kinetic energy to the speed of an object* • Interprets diagrams showing conversions between

	<p>light because these objects reflect light*</p> <ul style="list-style-type: none"> • Understands that black objects absorb more light than lighter colored objects • Explains why light-colored objects feel cooler than dark colored objects* • Explains how sound is produced • Makes inferences about echoes* • Understands that longer tubes and strings produce "lower" sounds than shorter tubes and strings (term "pitch" not used)* • Explains that sound moves through objects by causing particles to vibrate* • Defines volume* • Defines vibration* 	<p>potential and kinetic energy*</p> <ul style="list-style-type: none"> • Makes predictions about the transformation between kinetic and potential energy* • Describes the transformations of energy that may occur in electrical systems* • Explains that a turbine is a machine that is used in the transformation of mechanical to electrical energy* • Understands that black objects absorb more light than lighter colored objects • Explains why light-colored objects feel cooler than dark colored objects* • Describes the order of colors produced as white light passes through a prism* • Defines echo* • Recognizes that animals may be able to sense pitch outside of human hearing ability*
<p><i>New Vocabulary:</i> balance (scale), calorie, cohesion, conservation, Coriolis force, degree, efficiency, electrical force, friction, iron, load, magnetism, magnifying glass, measuring cup, metal, polarization, sand, spring scale, steam, tool, unit of measure, water vapor, work</p>	<p><i>New Vocabulary:</i> boil, broken (circuit), circuit, complete (circuit), compound, condense, container, cubic, diffuse, direct (sunlight), discharge, dissolve, echo, electrical conductor, electrical energy, element, evaporate, field, fulcrum, fused (circuit), ground, ground wire, heat energy, high-pitched, hydrogen, insulate, lever, light switch, loud, low-pitched, lubricant, melt, mix, nitrogen, nonmetal, particle, penetrate, phase, physical universe, pitch, polarize, reflect, refract, simple circuit, solute, solvent, state, states of matter, substance, thaw, vapor, vibrate, vibration, waterwheel, wave</p>	<p><i>New Vocabulary:</i> air resistance, atomic structure, carbon, center of gravity, chemical property, collide, column, conduct, contract, convert, dense, electric current, electrical insulator, expand, filament, fission, fluctuate, fossil fuel, fusion, generator, glucose, gravitational attraction, hardness, insulator, kilowatt hour, kinetic, magnetize, minimize, mixture, molecular motion, natural gas, newton, parabola, parallel circuit, pendulum, physical union, prism, sea level, selenium, series circuit, silver, sound energy, spectrum, stationary, sugar, sulfur/sulphur, texture, turbine, uranium, vaporize, vertical row, vocal cords</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> C₆H₁₂O₆ (glucose), Ca (calcium), C (carbon), CO (carbon monoxide), . decimal point, H₂O, H (hydrogen), O (oxygen), S (sulfur)</p>

Subject: General Science
Goal Strand: Physical 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
<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> • Relates density to the ability to sink or float* • Infers the mass of objects with identical volume, based on their buoyancy* • Distinguishes between chemical and physical changes* • Describes ways to separate mixtures* • Names the three different states of matter • Describes basic properties of solids, liquids, and gases • Gives examples of solids* • Classifies objects as solids, liquids, or gases* • Recognizes that water can undergo changes in state (e.g., solid, liquid, gas)* • Recognizes that ice is the solid form of water* • Describes the process of evaporation* • Describes the process of melting • Makes inferences about phase changes in matter • Gives examples of forms of matter which have undergone a change from liquid to solid form* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> • Compares objects in terms of density* • Predicts how changes in temperature will affect the density of an object* • Defines density* • Recognizes that when one divides mass by volume, one is calculating density* • Infers that an object is more dense than an object with the same volume, based on differences in mass (as measured by a double-pan balance) • Gives examples of changes in which new substances with new chemical properties are produced* • Defines mixture* • Names the three different states of matter • Describes how water exists in three states • Recognizes that water expands as it freezes* • Describes the process of evaporation* • Recognizes that evaporation changes a liquid to a gas* • Gives examples of evaporation* • Relates surface area to evaporation • Describes the process of evaporation in terms of the changes to the molecules involved* • Describes the process of freezing • Describes applications of differential expansion of metals* • Explains that heating or cooling materials can cause their state to change* • Explains that matter can change from one physical state to another* • Recognizes signs of a chemical reaction (e.g., formation of gas, color change, precipitate) • Infers that a chemical reaction has occurred* • Relates weight to gravity (e.g., if the gravity acting on an object increases, due to a change in distance or a change in mass of the other object, the weight of an object of constant mass will also increase)* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> • Identifies the tools and units used to measure weight* • Predicts how changes in temperature will affect the density of an object* • Predicts how objects of differing density will behave when combined* • Explains that objects of differing density will layer when combined* • Describes characteristics of physical change* • Describes characteristics of a chemical change* • Gives examples of chemical change • Describes properties of solutions* • Describes properties of mixtures • Gives examples of mixtures* • Understands that evaporation can be used to separate solutions* • Describes properties of gases* • Classifies unknown substances as liquids, based on their properties* • Recognizes properties of gases* • Describes the process of condensation* • Describes the process of freezing in terms of phase changes* • Explains that removing heat will cause a substance to change from gas to liquid or from liquid to solid form* • Gives examples of substances which have undergone a change of state* • Recognizes that products formed by chemical reactions have different properties from the reactants*

Matter: Structure and Properties	Matter: Structure and Properties	Matter: Structure and Properties
<ul style="list-style-type: none"> • Generalizes that all physical objects are made of matter • Infers that the more matter in an object, the greater the mass of that object* • Determines the volume of an object using the displacement method* • Recognizes that adding an object to a container of water will raise the water level within the container* • Explains that all matter is made of tiny particles called atoms* • Describes the shape of crystals* 	<ul style="list-style-type: none"> • Defines matter as anything that takes up space and has mass* • Recognizes that a magnifier allows one to see details that are not otherwise visible* • Compares objects in terms of mass* • Determines the volume of an object using the displacement method* • Estimates length of common objects using metric units* • Explains that as heat is applied to a substance, the particles making up the substance increase their motion • Explains that the periodic table is organized into rows and columns* • Explains that all matter is made of tiny particles called atoms* • Recognizes that atoms are composed of smaller particles (e.g., protons, neutrons, and electrons)* • Recognizes symbols for elements and compounds* • Determines the number of atoms in a compound when given its formula* 	<ul style="list-style-type: none"> • Makes inferences about the relative mass of objects based on data* • Recognizes that on a given planet, objects with the same weight will also have the same mass* • Recognizes that volume is measured in milliliters or liters* • Measures the volume of liquid in a graduated cylinder* • Understands that in the SI system, length is measured in meters, kilometers, centimeters* • Estimates length of common objects using metric units* • Recognizes that base unit for length in the SI system is the meter* • Describes the relative freedom of motion of particles in solids, liquids, and gases • Explains that as heat is applied to a substance, the particles making up the substance move farther apart • Recognizes that as heat is applied to a solid, its molecules move farther and farther apart* • Interprets diagrams showing the relative spacing and movement of matter in different phases* • Describes how elements are ordered by atomic number in the periodic table* • Determines the number of neutrons in an atom of an element given the atomic mass of the element* • Names contributions of scientists to the development of the periodic table of the elements* • Explains that all matter is made of tiny particles called atoms* • Recognizes symbols for elements and compounds* • Understands the rules of scientific nomenclature of elements and compounds • Determines the number of atoms in a compound when given its formula* • Describes characteristics of compounds • Describes how intermolecular forces affect the chemical properties of covalently bonded compounds • Recognizes that atoms interact by transferring or sharing valence electrons*
Force and Motion, Newton's Laws	Force and Motion, Newton's Laws	Force and Motion, Newton's Laws
<ul style="list-style-type: none"> • Interprets graphs of motion* • Defines a force as a push or pull on an object • Applies Newton's second law (the interrelationship 	<ul style="list-style-type: none"> • Describes how forces may create equilibrium for an object* • Analyzes how air resistance influences the relative 	<ul style="list-style-type: none"> • Calculates the distance an object has travelled, using geometry* • Compares the acceleration of falling objects*

<p>between force, mass, and acceleration) to everyday objects, such as teeter-totters/see-saws*</p> <ul style="list-style-type: none"> • Defines gravity* • Infers that there is a force that keeps us connected to Earth* • Explains that gravity pulls on all objects on or near Earth towards Earth's center* 	<p>motion of objects*</p> <ul style="list-style-type: none"> • Explains how frictional forces affect motion* • Determines the relative gravitational attraction among planets based on mass and/or distance* • Describes the effects of Earth's gravity on objects* 	<ul style="list-style-type: none"> • Recognizes that for two interacting objects, the force that the first object applies to the second object is equal to the force the second object applies to the first (equal and opposite force)* • Explains how frictional forces affect motion* • Classifies forces as caused by friction* • Explains that gravitational force is hard to detect unless at least one of the objects has a lot of mass* • Explains how changes in mass and distance affect gravitational force* • Applies Newton's laws of motion to explain movement due to gravity*
<p>Energy: Forms, Transfer, Transformation, Waves</p>	<p>Energy: Forms, Transfer, Transformation, Waves</p>	<p>Energy: Forms, Transfer, Transformation, Waves</p>
<ul style="list-style-type: none"> • Compares electrical insulating ability of different materials* • Gives examples of electrical conductors* • Analyzes parallel circuits* • Makes inferences about the working of circuits • Recognizes a simple circuit* • Gives examples of objects that use electrical energy* • Explains that energy is needed to do work* • Explains that we can see objects that do not give off light because these objects reflect light* • Understands that black objects absorb more light than lighter colored objects • Explains why light-colored objects feel cooler than dark colored objects* • Explains how sound is produced • Makes inferences about echoes* • Understands that longer tubes and strings produce "lower" sounds than shorter tubes and strings (term "pitch" not used)* • Explains that sound moves through objects by causing particles to vibrate* • Defines volume* • Defines vibration* 	<ul style="list-style-type: none"> • Describes formation of fossil fuels • Analyzes direct current electrical circuits* • Gives examples of electrical insulators* • Analyzes the parts of a light bulb* • Distinguishes between open and closed circuits* • Explains how fuses are used in electrical circuits* • Understands that sound is a form of energy* • Relates kinetic energy to the speed of an object* • Interprets diagrams showing conversions between potential and kinetic energy* • Makes predictions about the transformation between kinetic and potential energy* • Describes the transformations of energy that may occur in electrical systems* • Explains that a turbine is a machine that is used in the transformation of mechanical to electrical energy* • Understands that black objects absorb more light than lighter colored objects • Explains why light-colored objects feel cooler than dark colored objects* • Describes the order of colors produced as white light passes through a prism* • Defines echo* • Recognizes that animals may be able to sense pitch outside of human hearing ability* 	<ul style="list-style-type: none"> • Describes the source of geothermal energy* • Explains that energy cannot be created or destroyed, only changed from one form to another* • Compares electrical conducting ability of various materials • Analyzes series circuits* • Uses analogies to explain the flow of current in an electrical wire* • Explains that batteries change chemical energy into electrical energy* • Defines kinetic energy* • Relates kinetic energy to the speed of an object* • Calculates calories given mass and temperature change* • Describes ways that energy may be changed as a result of a chemical reaction* • Explains that when energy is converted from one form to another, heat is often produced as a by-product* • Recognizes that mechanical machines produce heat* • Understands that humans perceive differences in the wavelength of visible light as differences in color* • Describes ways that light interacts with matter (e.g., transmission, refraction, absorption, scattering, and reflection)* • Recognizes that a prism can be used to separate light into its component colors* • Understands that longer tubes and strings produce lower pitched sounds than shorter tubes and strings* • Relates pitch of a sound to wavelength* • Relates amplitude, frequency, wavelength, speed, and period of waves*

<p><i>New Vocabulary:</i> boil, broken (circuit), circuit, complete (circuit), compound, condense, container, cubic, diffuse, direct (sunlight), discharge, dissolve, echo, electrical conductor, electrical energy, element, evaporate, field, fulcrum, fused (circuit), ground, ground wire, heat energy, high-pitched, hydrogen, insulate, lever, light switch, loud, low-pitched, lubricant, melt, mix, nitrogen, nonmetal, particle, penetrate, phase, physical universe, pitch, polarize, reflect, refract, simple circuit, solute, solvent, state, states of matter, substance, thaw, vapor, vibrate, vibration, waterwheel, wave</p>	<p><i>New Vocabulary:</i> air resistance, atomic structure, carbon, center of gravity, chemical property, collide, column, conduct, contract, convert, dense, electric current, electrical insulator, expand, filament, fission, fluctuate, fossil fuel, fusion, generator, glucose, gravitational attraction, hardness, insulator, kilowatt hour, kinetic, magnetize, minimize, mixture, molecular motion, natural gas, newton, parabola, parallel circuit, pendulum, physical union, prism, sea level, selenium, series circuit, silver, sound energy, spectrum, stationary, sugar, sulfur/sulphur, texture, turbine, uranium, vaporize, vertical row, vocal cords</p>	<p><i>New Vocabulary:</i> alpha particle, amplitude, atomic number, average atomic mass, battery, beta particle, boiling point, brake, centi-, change of phase, change of state, chemical change, chemistry, corrosion, current, Dmitri Mendeleev, dry ice, electrical wire, electron affinity, explosion, focal length, focal point, illumination, intensity, mass number, measurable, metric unit, milli-, phase change, physical change, S.I. system, satellite, sublimate, transmission, visible spectrum, wavelength</p>
<p><i>New Signs and Symbols:</i> none</p>	<p><i>New Signs and Symbols:</i> C₆H₁₂O₆ (glucose), Ca (calcium), C (carbon), CO (carbon monoxide), . decimal point, H₂O, H (hydrogen), O (oxygen), S (sulfur)</p>	<p><i>New Signs and Symbols:</i> Co (cobalt), CO₂ (carbon dioxide), Cr (chromium), Cs (cesium), H₂ (hydrogen molecule), kg kilogram, Mg (magnesium), mL milliliter/millilitre, Na (sodium), N (nitrogen), O₂ (oxygen molecule), Pb (lead), K (potassium)</p>

Subject: General Science
Goal Strand: Physical 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
<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> • Compares objects in terms of density* • Predicts how changes in temperature will affect the density of an object* • Defines density* • Recognizes that when one divides mass by volume, one is calculating density* • Infers that an object is more dense than an object with the same volume, based on differences in mass (as measured by a double-pan balance) • Gives examples of changes in which new substances with new chemical properties are produced* • Defines mixture* • Names the three different states of matter • Describes how water exists in three states • Recognizes that water expands as it freezes* • Describes the process of evaporation* • Recognizes that evaporation changes a liquid to a gas* • Gives examples of evaporation* • Relates surface area to evaporation • Describes the process of evaporation in terms of the changes to the molecules involved* • Describes the process of freezing • Describes applications of differential expansion of metals* • Explains that heating or cooling materials can cause their state to change* • Explains that matter can change from one physical state to another* • Recognizes signs of a chemical reaction (e.g., formation of gas, color change, precipitate) • Infers that a chemical reaction has occurred* • Relates weight to gravity (e.g., if the gravity acting on an object increases, due to a change in distance or a change in mass of the other object, the weight of an object of constant mass will also increase)* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> • Identifies the tools and units used to measure weight* • Predicts how changes in temperature will affect the density of an object* • Predicts how objects of differing density will behave when combined* • Explains that objects of differing density will layer when combined* • Describes characteristics of physical change* • Describes characteristics of a chemical change* • Gives examples of chemical change • Describes properties of solutions* • Describes properties of mixtures • Gives examples of mixtures* • Understands that evaporation can be used to separate solutions* • Describes properties of gases* • Classifies unknown substances as liquids, based on their properties* • Recognizes properties of gases* • Describes the process of condensation* • Describes the process of freezing in terms of phase changes* • Explains that removing heat will cause a substance to change from gas to liquid or from liquid to solid form* • Gives examples of substances which have undergone a change of state* • Recognizes that products formed by chemical reactions have different properties from the reactants* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> • Identifies tools needed to calculate the density of an irregularly-shaped object* • Calculates density of objects, using supplied data* • Describes physical changes in matter (e.g., changes in size, shape, freezing, melting, dissolving)* • Explains how the addition or loss of heat changes matter (e.g., physical change)* • Describes examples of physical change • Gives examples of chemical change • Infers that a chemical change has occurred* • Explains that removing heat will cause a substance to change from gas to liquid or from liquid to solid form* • Describes the law of conservation of mass* • Recognizes that the mass of a material remains the same when the material is divided or changes shape* • Understands how conservation of mass is expressed in chemical formulas and equations* • Balances equations to reflect conservation of mass* • Explains that coefficients may be adjusted to balance chemical equations* • Infers that a new compound has been formed when new properties result after combining reagents* • Understands that weight of an object may change due to a change in gravity, but the mass of this object will remain the same*

Matter: Structure and Properties	Matter: Structure and Properties	Matter: Structure and Properties
<ul style="list-style-type: none"> • Defines matter as anything that takes up space and has mass* • Recognizes that a magnifier allows one to see details that are not otherwise visible* • Compares objects in terms of mass* • Determines the volume of an object using the displacement method* • Estimates length of common objects using metric units* • Explains that as heat is applied to a substance, the particles making up the substance increase their motion • Explains that the periodic table is organized into rows and columns* • Explains that all matter is made of tiny particles called atoms* • Recognizes that atoms are composed of smaller particles (e.g., protons, neutrons, and electrons)* • Recognizes symbols for elements and compounds* • Determines the number of atoms in a compound when given its formula* 	<ul style="list-style-type: none"> • Makes inferences about the relative mass of objects based on data* • Recognizes that on a given planet, objects with the same weight will also have the same mass* • Recognizes that volume is measured in milliliters or liters* • Measures the volume of liquid in a graduated cylinder* • Understands that in the SI system, length is measured in meters, kilometers, centimeters* • Estimates length of common objects using metric units* • Recognizes that base unit for length in the SI system is the meter* • Describes the relative freedom of motion of particles in solids, liquids, and gases • Explains that as heat is applied to a substance, the particles making up the substance move farther apart • Recognizes that as heat is applied to a solid, its molecules move farther and farther apart* • Interprets diagrams showing the relative spacing and movement of matter in different phases* • Describes how elements are ordered by atomic number in the periodic table* • Determines the number of neutrons in an atom of an element given the atomic mass of the element* • Names contributions of scientists to the development of the periodic table of the elements* • Explains that all matter is made of tiny particles called atoms* • Recognizes symbols for elements and compounds* • Understands the rules of scientific nomenclature of elements and compounds • Determines the number of atoms in a compound when given its formula* • Describes characteristics of compounds • Describes how intermolecular forces affect the chemical properties of covalently bonded compounds • Recognizes that atoms interact by transferring or sharing valence electrons* 	<ul style="list-style-type: none"> • Understands that air and other gases have mass* • Evaluates to determine the best substance for a given application based on data describing physical properties of substances* • Makes inferences about appropriate uses of materials from results of tests of properties (e.g., hardness, tensile strength, conductivity)* • Describes objects in terms of mass* • Recognizes that mass is measured in grams* • Identifies the tools needed to determine the volume of an irregularly shaped object* • Describes chemical properties of substances* • Describes the relative spacing of particles in solids, liquids, and gases* • Recognizes that atomic number represents the number of protons found in the nucleus of a particular type of element* • Describes the relationship between atomic number and atomic mass* • Determines the number of protons in an atom of an element when given that atom's atomic number* • Determines the number of neutrons in an atom of an element given the atomic mass of the element* • Determines the atomic mass of an atom, given the number of protons, electrons and neutrons for this atom* • Predicts properties of elements using information about their classification (e.g., metals, non-metals)* • Understands that elements are grouped according to similarities in their properties* • Describes the properties shared by specific families or groups of elements* • Makes predictions of reactivity based on electron configuration* • Determines the electrical charge of an atom or ion • Describes the forces which hold together the components of an ionic substance* • Recognizes that compounds contain two or more types of atoms bonded together*
Force and Motion, Newton's Laws	Force and Motion, Newton's Laws	Force and Motion, Newton's Laws
<ul style="list-style-type: none"> • Describes how forces may create equilibrium for an object* • Analyzes how air resistance influences the relative 	<ul style="list-style-type: none"> • Calculates the distance an object has travelled, using geometry* • Compares the acceleration of falling objects* 	<ul style="list-style-type: none"> • Applies $F=ma$ to calculate the magnitude of a change in motion* • Analyzes examples of accelerated motion using

<ul style="list-style-type: none"> • motion of objects* • Explains how frictional forces affect motion* • Determines the relative gravitational attraction among planets based on mass and/or distance* • Describes the effects of Earth's gravity on objects* 	<ul style="list-style-type: none"> • Recognizes that for two interacting objects, the force that the first object applies to the second object is equal to the force the second object applies to the first (equal and opposite force)* • Explains how frictional forces affect motion* • Classifies forces as caused by friction* • Explains that gravitational force is hard to detect unless at least one of the objects has a lot of mass* • Explains how changes in mass and distance affect gravitational force* • Applies Newton's laws of motion to explain movement due to gravity* 	<ul style="list-style-type: none"> • Newton's laws* • Explains how frictional forces affect motion* • Gives examples to support the idea that an object will remain at rest or move in a straight line at constant speed if it is not subjected to an unbalanced force* • Explains how an object that is not being subjected to an outside force will move with constant velocity in a straight line* • Applies Newton's first law (inertia) to real world objects* • Defines inertia* • Applies Newton's laws of motion to explain movement due to gravity* • Calculates gravitational forces of objects in space*
<p>Energy: Forms, Transfer, Transformation, Waves</p>	<p>Energy: Forms, Transfer, Transformation, Waves</p>	<p>Energy: Forms, Transfer, Transformation, Waves</p>
<ul style="list-style-type: none"> • Describes formation of fossil fuels • Analyzes direct current electrical circuits* • Gives examples of electrical insulators* • Analyzes the parts of a light bulb* • Distinguishes between open and closed circuits* • Explains how fuses are used in electrical circuits* • Understands that sound is a form of energy* • Relates kinetic energy to the speed of an object* • Interprets diagrams showing conversions between potential and kinetic energy* • Makes predictions about the transformation between kinetic and potential energy* • Describes the transformations of energy that may occur in electrical systems* • Explains that a turbine is a machine that is used in the transformation of mechanical to electrical energy* • Understands that black objects absorb more light than lighter colored objects • Explains why light-colored objects feel cooler than dark colored objects* • Describes the order of colors produced as white light passes through a prism* • Defines echo* • Recognizes that animals may be able to sense pitch outside of human hearing ability* 	<ul style="list-style-type: none"> • Describes the source of geothermal energy* • Explains that energy cannot be created or destroyed, only changed from one form to another* • Compares electrical conducting ability of various materials • Analyzes series circuits* • Uses analogies to explain the flow of current in an electrical wire* • Explains that batteries change chemical energy into electrical energy* • Defines kinetic energy* • Relates kinetic energy to the speed of an object* • Calculates calories given mass and temperature change* • Describes ways that energy may be changed as a result of a chemical reaction* • Explains that when energy is converted from one form to another, heat is often produced as a by-product* • Recognizes that mechanical machines produce heat* • Understands that humans perceive differences in the wavelength of visible light as differences in color* • Describes ways that light interacts with matter (e.g., transmission, refraction, absorption, scattering, and reflection)* • Recognizes that a prism can be used to separate light into its component colors* • Understands that longer tubes and strings produce lower pitched sounds than shorter tubes and strings* • Relates pitch of a sound to wavelength* 	<ul style="list-style-type: none"> • Differentiates between parallel and series circuits* • Recognizes the major forms of energy* • Defines kinetic energy* • Gives examples of kinetic energy* • Gives examples of potential energy* • Defines a calorie as heat needed to increase the temperature of one gram of water one degree Celsius* • Classifies examples of chemical changes that show release or absorption of energy* • Gives examples that show that some chemical reactions release energy while others require input of energy* • Recognizes that light is produced by vibrations of electrons* • Describes properties of ultraviolet light* • Explains that when light shines on a colored filter, light of the color of the filter passes through, while the other portions are absorbed* • Explains that opaque items may absorb some colors of light and reflect others, so that the color seen is the color reflected by the object* • Compares the movement of sound through air, water, and/or solids* • Understands that pitch of a sound is dependent on the frequency of the vibration producing the sound* • Recognizes that loudness of sound is measured in decibels* • Recognizes the types of waves which comprise the electromagnetic spectrum*

	<ul style="list-style-type: none"> Relates amplitude, frequency, wavelength, speed, and period of waves* 	
<p><i>New Vocabulary:</i> air resistance, atomic structure, carbon, center of gravity, chemical property, collide, column, conduct, contract, convert, dense, electric current, electrical insulator, expand, filament, fission, fluctuate, fossil fuel, fusion, generator, glucose, gravitational attraction, hardness, insulator, kilowatt hour, kinetic, magnetize, minimize, mixture, molecular motion, natural gas, newton, parabola, parallel circuit, pendulum, physical union, prism, sea level, selenium, series circuit, silver, sound energy, spectrum, stationary, sugar, sulfur/sulphur, texture, turbine, uranium, vaporize, vertical row, vocal cords</p>	<p><i>New Vocabulary:</i> alpha particle, amplitude, atomic number, average atomic mass, battery, beta particle, boiling point, brake, centi-, change of phase, change of state, chemical change, chemistry, corrosion, current, Dmitri Mendeleev, dry ice, electrical wire, electron affinity, explosion, focal length, focal point, illumination, intensity, mass number, measurable, metric unit, milli-, phase change, physical change, S.I. system, satellite, sublimate, transmission, visible spectrum, wavelength</p>	<p><i>New Vocabulary:</i> alternating circuit, centrifugal force, charge, charged, chemical equation, coefficient, conservation of mass, decibel, electric, evacuate (container), grams, hertz, ionic, law of conservation of mass, law of gravity, loudness, Newton's first law of motion, Newton's second law of motion, Newton's third law of motion, nuclear fission, overtone, phosphorous, reaction force, sodium chloride</p>
<p><i>New Signs and Symbols:</i> C₆H₁₂O₆ (glucose), Ca (calcium), C (carbon), CO (carbon monoxide), . decimal point, H₂O, H (hydrogen), O (oxygen), S (sulfur)</p>	<p><i>New Signs and Symbols:</i> Co (cobalt), CO₂ (carbon dioxide), Cr (chromium), Cs (cesium), H₂ (hydrogen molecule), kg kilogram, Mg (magnesium), mL milliliter/millilitre, Na (sodium), N (nitrogen), O₂ (oxygen molecule), Pb (lead), K (potassium)</p>	<p><i>New Signs and Symbols:</i> a acceleration, F force, g gram, m mass</p>

Subject: General Science
Goal Strand: Physical 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
<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> Identifies the tools and units used to measure weight* Predicts how changes in temperature will affect the density of an object* Predicts how objects of differing density will behave when combined* Explains that objects of differing density will layer when combined* Describes characteristics of physical change* Describes characteristics of a chemical change* Gives examples of chemical change Describes properties of solutions* Describes properties of mixtures Gives examples of mixtures* Understands that evaporation can be used to separate solutions* Describes properties of gases* Classifies unknown substances as liquids, based on their properties* Recognizes properties of gases* Describes the process of condensation* Describes the process of freezing in terms of phase changes* Explains that removing heat will cause a substance to change from gas to liquid or from liquid to solid form* Gives examples of substances which have undergone a change of state* Recognizes that products formed by chemical reactions have different properties from the reactants* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> Identifies tools needed to calculate the density of an irregularly-shaped object* Calculates density of objects, using supplied data* Describes physical changes in matter (e.g., changes in size, shape, freezing, melting, dissolving)* Explains how the addition or loss of heat changes matter (e.g., physical change)* Describes examples of physical change Gives examples of chemical change Infers that a chemical change has occurred* Explains that removing heat will cause a substance to change from gas to liquid or from liquid to solid form* Describes the law of conservation of mass* Recognizes that the mass of a material remains the same when the material is divided or changes shape* Understands how conservation of mass is expressed in chemical formulas and equations* Balances equations to reflect conservation of mass* Explains that coefficients may be adjusted to balance chemical equations* Infers that a new compound has been formed when new properties result after combining reagents* Understands that weight of an object may change due to a change in gravity, but the mass of this object will remain the same* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> Describes constancy of mass during a physical or chemical change in a system* Classifies mixtures based on their properties* Defines solute* Understands how conservation of mass is expressed in chemical formulas and equations* Identifies reactants and products of a combustion reaction*
<p>Matter: Structure and Properties</p> <ul style="list-style-type: none"> Makes inferences about the relative mass of objects based on data* Recognizes that on a given planet, objects with the same weight will also have the same mass* Recognizes that volume is measured in milliliters or liters* 	<p>Matter: Structure and Properties</p> <ul style="list-style-type: none"> Understands that air and other gases have mass* Evaluates to determine the best substance for a given application based on data describing physical properties of substances* Makes inferences about appropriate uses of materials from results of tests of properties (e.g., hardness, 	<p>Matter: Structure and Properties</p> <ul style="list-style-type: none"> Defines chemical property* Distinguishes among examples of physical and chemical properties* Determines the number of neutrons in an atom of an element given the atomic mass of the element* Relates trends seen in the periodic table to bonding of

<ul style="list-style-type: none"> • Measures the volume of liquid in a graduated cylinder* • Understands that in the SI system, length is measured in meters, kilometers, centimeters* • Estimates length of common objects using metric units* • Recognizes that base unit for length in the SI system is the meter* • Describes the relative freedom of motion of particles in solids, liquids, and gases • Explains that as heat is applied to a substance, the particles making up the substance move farther apart • Recognizes that as heat is applied to a solid, its molecules move farther and farther apart* • Interprets diagrams showing the relative spacing and movement of matter in different phases* • Describes how elements are ordered by atomic number in the periodic table* • Determines the number of neutrons in an atom of an element given the atomic mass of the element* • Names contributions of scientists to the development of the periodic table of the elements* • Explains that all matter is made of tiny particles called atoms* • Recognizes symbols for elements and compounds* • Understands the rules of scientific nomenclature of elements and compounds • Determines the number of atoms in a compound when given its formula* • Describes characteristics of compounds • Describes how intermolecular forces affect the chemical properties of covalently bonded compounds • Recognizes that atoms interact by transferring or sharing valence electrons* 	<p>tensile strength, conductivity)*</p> <ul style="list-style-type: none"> • Describes objects in terms of mass* • Recognizes that mass is measured in grams* • Identifies the tools needed to determine the volume of an irregularly shaped object* • Describes chemical properties of substances* • Describes the relative spacing of particles in solids, liquids, and gases* • Recognizes that atomic number represents the number of protons found in the nucleus of a particular type of element* • Describes the relationship between atomic number and atomic mass* • Determines the number of protons in an atom of an element when given that atom's atomic number* • Determines the number of neutrons in an atom of an element given the atomic mass of the element* • Determines the atomic mass of an atom, given the number of protons, electrons and neutrons for this atom* • Predicts properties of elements using information about their classification (e.g., metals, non-metals)* • Understands that elements are grouped according to similarities in their properties* • Describes the properties shared by specific families or groups of elements* • Makes predictions of reactivity based on electron configuration* • Determines the electrical charge of an atom or ion • Describes the forces which hold together the components of an ionic substance* • Recognizes that compounds contain two or more types of atoms bonded together* 	<p>elements*</p> <ul style="list-style-type: none"> • Describes the properties shared by specific families or groups of elements* • Describes how atoms with similar numbers of valence electrons are grouped together on the periodic chart* • Interprets data related to electron configuration* • Recognizes characteristics of compounds* • Makes inferences from data about the formation of ionic compounds*
<p>Force and Motion, Newton's Laws</p>	<p>Force and Motion, Newton's Laws</p>	<p>Force and Motion, Newton's Laws</p>
<ul style="list-style-type: none"> • Calculates the distance an object has travelled, using geometry* • Compares the acceleration of falling objects* • Recognizes that for two interacting objects, the force that the first object applies to the second object is equal to the force the second object applies to the first (equal and opposite force)* • Explains how frictional forces affect motion* • Classifies forces as caused by friction* • Explains that gravitational force is hard to detect unless 	<ul style="list-style-type: none"> • Applies $F=ma$ to calculate the magnitude of a change in motion* • Analyzes examples of accelerated motion using Newton's laws* • Explains how frictional forces affect motion* • Gives examples to support the idea that an object will remain at rest or move in a straight line at constant speed if it is not subjected to an unbalanced force* • Explains how an object that is not being subjected to an outside force will move with constant velocity in a 	<ul style="list-style-type: none"> • Relates changes in speed or direction to unbalanced forces (2-D)*

<ul style="list-style-type: none"> at least one of the objects has a lot of mass* Explains how changes in mass and distance affect gravitational force* Applies Newton's laws of motion to explain movement due to gravity* 	<ul style="list-style-type: none"> straight line* Applies Newton's first law (inertia) to real world objects* Defines inertia* Applies Newton's laws of motion to explain movement due to gravity* Calculates gravitational forces of objects in space* 	
Energy: Forms, Transfer, Transformation, Waves	Energy: Forms, Transfer, Transformation, Waves	Energy: Forms, Transfer, Transformation, Waves
<ul style="list-style-type: none"> Describes the source of geothermal energy* Explains that energy cannot be created or destroyed, only changed from one form to another* Compares electrical conducting ability of various materials Analyzes series circuits* Uses analogies to explain the flow of current in an electrical wire* Explains that batteries change chemical energy into electrical energy* Defines kinetic energy* Relates kinetic energy to the speed of an object* Calculates calories given mass and temperature change* Describes ways that energy may be changed as a result of a chemical reaction* Explains that when energy is converted from one form to another, heat is often produced as a by-product* Recognizes that mechanical machines produce heat* Understands that humans perceive differences in the wavelength of visible light as differences in color* Describes ways that light interacts with matter (e.g., transmission, refraction, absorption, scattering, and reflection)* Recognizes that a prism can be used to separate light into its component colors* Understands that longer tubes and strings produce lower pitched sounds than shorter tubes and strings* Relates pitch of a sound to wavelength* Relates amplitude, frequency, wavelength, speed, and period of waves* 	<ul style="list-style-type: none"> Differentiates between parallel and series circuits* Recognizes the major forms of energy* Defines kinetic energy* Gives examples of kinetic energy* Gives examples of potential energy* Defines a calorie as heat needed to increase the temperature of one gram of water one degree Celsius* Classifies examples of chemical changes that show release or absorption of energy* Gives examples that show that some chemical reactions release energy while others require input of energy* Recognizes that light is produced by vibrations of electrons* Describes properties of ultraviolet light* Explains that when light shines on a colored filter, light of the color of the filter passes through, while the other portions are absorbed* Explains that opaque items may absorb some colors of light and reflect others, so that the color seen is the color reflected by the object* Compares the movement of sound through air, water, and/or solids* Understands that pitch of a sound is dependent on the frequency of the vibration producing the sound* Recognizes that loudness of sound is measured in decibels* Recognizes the types of waves which comprise the electromagnetic spectrum* 	<ul style="list-style-type: none"> Gives examples of potential energy*
<i>New Vocabulary:</i> alpha particle, amplitude, atomic number, average atomic mass, battery, beta particle, boiling point, brake, centi-, change of phase, change of state, chemical change, chemistry, corrosion, current, Dmitri Mendeleev, dry ice, electrical wire, electron	<i>New Vocabulary:</i> alternating circuit, centrifugal force, charge, charged, chemical equation, coefficient, conservation of mass, decibel, electric, evacuate (container), grams, hertz, ionic, law of conservation of mass, law of gravity, loudness, Newton's first law of	<i>New Vocabulary:</i> none

affinity, explosion, focal length, focal point, illumination, intensity, mass number, measurable, metric unit, milli-, phase change, physical change, S.I. system, satellite, sublimate, transmission, visible spectrum, wavelength	motion, Newton's second law of motion, Newton's third law of motion, nuclear fission, overtone, phosphorous, reaction force, sodium chloride	
<i>New Signs and Symbols:</i> Co (cobalt), CO ₂ (carbon dioxide), Cr (chromium), Cs (cesium), H ₂ (hydrogen molecule), kg kilogram, Mg (magnesium), mL milliliter/millilitre, Na (sodium), N (nitrogen), O ₂ (oxygen molecule), Pb (lead), K (potassium)	<i>New Signs and Symbols:</i> a acceleration, F force, g gram, m mass	<i>New Signs and Symbols:</i> none

Subject: General Science
Goal Strand: Physical 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
<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> Identifies tools needed to calculate the density of an irregularly-shaped object* Calculates density of objects, using supplied data* Describes physical changes in matter (e.g., changes in size, shape, freezing, melting, dissolving)* Explains how the addition or loss of heat changes matter (e.g., physical change)* Describes examples of physical change Gives examples of chemical change Infers that a chemical change has occurred* Explains that removing heat will cause a substance to change from gas to liquid or from liquid to solid form* Describes the law of conservation of mass* Recognizes that the mass of a material remains the same when the material is divided or changes shape* Understands how conservation of mass is expressed in chemical formulas and equations* Balances equations to reflect conservation of mass* Explains that coefficients may be adjusted to balance chemical equations* Infers that a new compound has been formed when new properties result after combining reagents* Understands that weight of an object may change due to a change in gravity, but the mass of this object will remain the same* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> Describes constancy of mass during a physical or chemical change in a system* Classifies mixtures based on their properties* Defines solute* Understands how conservation of mass is expressed in chemical formulas and equations* Identifies reactants and products of a combustion reaction* 	<p>Matter: States, Chemical and Physical Changes</p> <ul style="list-style-type: none"> Gives examples of solutions* Evaluates strategies for the qualitative analysis of a given mixture* Recognizes that in a closed system, the total number of atoms always remains the same, regardless of how the atoms are arranged into molecules* Explains that when an acid is combined in equal molar quantities with a base, a neutral solution of salt in water is obtained*
<p>Matter: Structure and Properties</p> <ul style="list-style-type: none"> Understands that air and other gases have mass* Evaluates to determine the best substance for a given application based on data describing physical properties of substances* Makes inferences about appropriate uses of materials from results of tests of properties (e.g., hardness, tensile strength, conductivity)* Describes objects in terms of mass* Recognizes that mass is measured in grams* 	<p>Matter: Structure and Properties</p> <ul style="list-style-type: none"> Defines chemical property* Distinguishes among examples of physical and chemical properties* Determines the number of neutrons in an atom of an element given the atomic mass of the element* Relates trends seen in the periodic table to bonding of elements* Describes the properties shared by specific families or groups of elements* 	<p>Matter: Structure and Properties</p> <ul style="list-style-type: none"> Describes the properties shared by specific families or groups of elements*

<ul style="list-style-type: none"> • Identifies the tools needed to determine the volume of an irregularly shaped object* • Describes chemical properties of substances* • Describes the relative spacing of particles in solids, liquids, and gases* • Recognizes that atomic number represents the number of protons found in the nucleus of a particular type of element* • Describes the relationship between atomic number and atomic mass* • Determines the number of protons in an atom of an element when given that atom's atomic number* • Determines the number of neutrons in an atom of an element given the atomic mass of the element* • Determines the atomic mass of an atom, given the number of protons, electrons and neutrons for this atom* • Predicts properties of elements using information about their classification (e.g., metals, non-metals)* • Understands that elements are grouped according to similarities in their properties* • Describes the properties shared by specific families or groups of elements* • Makes predictions of reactivity based on electron configuration* • Determines the electrical charge of an atom or ion • Describes the forces which hold together the components of an ionic substance* • Recognizes that compounds contain two or more types of atoms bonded together* 	<ul style="list-style-type: none"> • Describes how atoms with similar numbers of valence electrons are grouped together on the periodic chart* • Interprets data related to electron configuration* • Recognizes characteristics of compounds* • Makes inferences from data about the formation of ionic compounds* 	
Force and Motion, Newton's Laws	Force and Motion, Newton's Laws	Force and Motion, Newton's Laws
<ul style="list-style-type: none"> • Applies $F=ma$ to calculate the magnitude of a change in motion* • Analyzes examples of accelerated motion using Newton's laws* • Explains how frictional forces affect motion* • Gives examples to support the idea that an object will remain at rest or move in a straight line at constant speed if it is not subjected to an unbalanced force* • Explains how an object that is not being subjected to an outside force will move with constant velocity in a straight line* • Applies Newton's first law (inertia) to real world objects* 	<ul style="list-style-type: none"> • Relates changes in speed or direction to unbalanced forces (2-D)* 	<ul style="list-style-type: none"> • Applies Newton's laws to examine action and reaction*

<ul style="list-style-type: none"> • Defines inertia* • Applies Newton's laws of motion to explain movement due to gravity* • Calculates gravitational forces of objects in space* 		
Energy: Forms, Transfer, Transformation, Waves	Energy: Forms, Transfer, Transformation, Waves	Energy: Forms, Transfer, Transformation, Waves
<ul style="list-style-type: none"> • Differentiates between parallel and series circuits* • Recognizes the major forms of energy* • Defines kinetic energy* • Gives examples of kinetic energy* • Gives examples of potential energy* • Defines a calorie as heat needed to increase the temperature of one gram of water one degree Celsius* • Classifies examples of chemical changes that show release or absorption of energy* • Gives examples that show that some chemical reactions release energy while others require input of energy* • Recognizes that light is produced by vibrations of electrons* • Describes properties of ultraviolet light* • Explains that when light shines on a colored filter, light of the color of the filter passes through, while the other portions are absorbed* • Explains that opaque items may absorb some colors of light and reflect others, so that the color seen is the color reflected by the object* • Compares the movement of sound through air, water, and/or solids* • Understands that pitch of a sound is dependent on the frequency of the vibration producing the sound* • Recognizes that loudness of sound is measured in decibels* • Recognizes the types of waves which comprise the electromagnetic spectrum* 	<ul style="list-style-type: none"> • Gives examples of potential energy* 	<ul style="list-style-type: none"> • Understands that renewable energy sources may be of limited usefulness because of their basis in energy sources that are not in constant supply (e.g., solar power, tidal dams)* • Calculates frequency of waves when given wavelength and speed*
<i>New Vocabulary:</i> alternating circuit, centrifugal force, charge, charged, chemical equation, coefficient, conservation of mass, decibel, electric, evacuate (container), grams, hertz, ionic, law of conservation of mass, law of gravity, loudness, Newton's first law of motion, Newton's second law of motion, Newton's third law of motion, nuclear fission, overtone, phosphorous, reaction force, sodium chloride	<i>New Vocabulary:</i> none	<i>New Vocabulary:</i> none
<i>New Signs and Symbols:</i> a acceleration, F force, g gram, m mass	<i>New Signs and Symbols:</i> none	<i>New Signs and Symbols:</i> none

Subject: General Science
Goal Strand: Physical 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
Matter: States, Chemical and Physical Changes <ul style="list-style-type: none"> • Describes constancy of mass during a physical or chemical change in a system* • Classifies mixtures based on their properties* • Defines solute* • Understands how conservation of mass is expressed in chemical formulas and equations* • Identifies reactants and products of a combustion reaction* 	Matter: States, Chemical and Physical Changes <ul style="list-style-type: none"> • Gives examples of solutions* • Evaluates strategies for the qualitative analysis of a given mixture* • Recognizes that in a closed system, the total number of atoms always remains the same, regardless of how the atoms are arranged into molecules* • Explains that when an acid is combined in equal molar quantities with a base, a neutral solution of salt in water is obtained* 	Matter: States, Chemical and Physical Changes <ul style="list-style-type: none"> • Analyzes data about phase changes in matter*
Matter: Structure and Properties <ul style="list-style-type: none"> • Defines chemical property* • Distinguishes among examples of physical and chemical properties* • Determines the number of neutrons in an atom of an element given the atomic mass of the element* • Relates trends seen in the periodic table to bonding of elements* • Describes the properties shared by specific families or groups of elements* • Describes how atoms with similar numbers of valence electrons are grouped together on the periodic chart* • Interprets data related to electron configuration* • Recognizes characteristics of compounds* • Makes inferences from data about the formation of ionic compounds* 	Matter: Structure and Properties <ul style="list-style-type: none"> • Describes the properties shared by specific families or groups of elements* 	Matter: Structure and Properties
Force and Motion, Newton's Laws <ul style="list-style-type: none"> • Relates changes in speed or direction to unbalanced forces (2-D)* 	Force and Motion, Newton's Laws <ul style="list-style-type: none"> • Applies Newton's laws to examine action and reaction* 	Force and Motion, Newton's Laws
Energy: Forms, Transfer, Transformation, Waves <ul style="list-style-type: none"> • Gives examples of potential energy* 	Energy: Forms, Transfer, Transformation, Waves <ul style="list-style-type: none"> • Understands that renewable energy sources may be of limited usefulness because of their basis in energy sources that are not in constant supply (e.g., solar power, tidal dams)* • Calculates frequency of waves when given wavelength and speed* 	Energy: Forms, Transfer, Transformation, Waves

<i>New Vocabulary: none</i>	<i>New Vocabulary: none</i>	<i>New Vocabulary: none</i>
<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: Physical Science
RIT Score Range: Above 250

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop Above 250
Matter: States, Chemical and Physical Changes <ul style="list-style-type: none"> • Gives examples of solutions* • Evaluates strategies for the qualitative analysis of a given mixture* • Recognizes that in a closed system, the total number of atoms always remains the same, regardless of how the atoms are arranged into molecules* • Explains that when an acid is combined in equal molar quantities with a base, a neutral solution of salt in water is obtained* 	Matter: States, Chemical and Physical Changes <ul style="list-style-type: none"> • Analyzes data about phase changes in matter*
Matter: Structure and Properties <ul style="list-style-type: none"> • Describes the properties shared by specific families or groups of elements* 	Matter: Structure and Properties
Force and Motion, Newton's Laws <ul style="list-style-type: none"> • Applies Newton's laws to examine action and reaction* 	Force and Motion, Newton's Laws
Energy: Forms, Transfer, Transformation, Waves <ul style="list-style-type: none"> • Understands that renewable energy sources may be of limited usefulness because of their basis in energy sources that are not in constant supply (e.g., solar power, tidal dams)* • Calculates frequency of waves when given wavelength and speed* 	Energy: Forms, Transfer, Transformation, Waves
<i>New Vocabulary: none</i>	<i>New Vocabulary: none</i>
<i>New Signs and Symbols: none</i>	<i>New Signs and Symbols: none</i>

Subject: General Science
 Goal Strand: Life Science
 RIT Score Range: Below 171

Skills and Concepts to Develop Below 171	Skills and Concepts to Introduce 171 - 180
Cells, Organisms Structure and Function	Cells, Organisms Structure and Function
	<ul style="list-style-type: none"> Identifies external parts of plants Describes the large scale external anatomy of humans* Describes functions of specific organs* Recognizes similarities and differences in diverse species* Groups organisms based on similarities*
Organisms Reproduce, Transmit Genes; Evolution	Organisms Reproduce, Transmit Genes; Evolution
<ul style="list-style-type: none"> Orders the stages of a vertebrate life cycle showing metamorphosis (e.g., frog, salamander)* 	<ul style="list-style-type: none"> Describes simple life cycles of animals Analyzes the life cycle of plants from reproduction and growth, through maturation and death* Compares the process of reproduction in the major phyla of living things*
Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy
	<ul style="list-style-type: none"> Explains how physical characteristics of organisms help them to survive in their environments and reproduce* Identifies habitats of various organisms* Describes behavioral adaptations (terminology not used) that allow an organism to survive in a particular environment* Compares features of organisms (e.g., appendages, reproductive rates, camouflage, defensive structures) for their adaptive potential* Explains that to be able to live and grow, plants and animals require resources (e.g., food, water, light, and air)* Describes the basic needs of plants and animals*
<i>New Vocabulary:</i> life cycle	<i>New Vocabulary:</i> bean, body, branch, bud, burrow, cat, caterpillar, cave, cycle, den, drown, enemy, fall, feline, frog, fruit, grow, head, hibernate, hind, neck, need, nest, protect, seed, seedling, shoulder, spider, spring, stage, summer, survive, toad, turtle, waist, wing, wolf, worm
<i>New Signs and Symbols:</i> none	<i>New Signs and Symbols:</i> none

Subject: General Science
Goal Strand: Life 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
Cells, Organisms Structure and Function	Cells, Organisms Structure and Function <ul style="list-style-type: none"> • Identifies external parts of plants • Describes the large scale external anatomy of humans* • Describes functions of specific organs* • Recognizes similarities and differences in diverse species* • Groups organisms based on similarities* 	Cells, Organisms Structure and Function <ul style="list-style-type: none"> • Identifies characteristics of organisms* • Describes functions of structures of animals • Describes the large scale external anatomy of humans* • Explains that the function of a plant's root is to absorb water* • Recognizes that the heart acts as a pump* • Describes the structure and basic functions (movement and support) of the skeletal system • Describes characteristics of each of the human senses* • Describes how tools enhance the senses* • Classifies commonly-known organisms (e.g., cat, dog, apple) based on external characteristics • Groups organisms based on similarities* • Sorts living and non-living things using different characteristics* • Compares basic needs of different organisms in their environment* • Recognizes the importance of oxygen to the survival of animals* • Sorts organisms and objects as living or non-living • Differentiates among living and nonliving things* • Predicts how life forms will maintain homeostasis through particular changes*
Organisms Reproduce, Transmit Genes; Evolution <ul style="list-style-type: none"> • Orders the stages of a vertebrate life cycle showing metamorphosis (e.g., frog, salamander)* 	Organisms Reproduce, Transmit Genes; Evolution <ul style="list-style-type: none"> • Describes simple life cycles of animals • Analyzes the life cycle of plants from reproduction and growth, through maturation and death* • Compares the process of reproduction in the major phyla of living things* 	Organisms Reproduce, Transmit Genes; Evolution <ul style="list-style-type: none"> • Describes how environmental changes cause species to evolve over time, thus producing new species*
Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy <ul style="list-style-type: none"> • Explains how physical characteristics of organisms help them to survive in their environments and reproduce* • Identifies habitats of various organisms* • Describes behavioral adaptations (terminology not used) that allow an organism to survive in a particular 	Ecosystem Interactions, Survival, Matter, Energy <ul style="list-style-type: none"> • Explains how physical characteristics of organisms help them to survive in their environments and reproduce* • Gives examples of features that help plants and animals survive in different places* • Gives examples of foods that come from plants*

	<p>environment*</p> <ul style="list-style-type: none"> • Compares features of organisms (e.g., appendages, reproductive rates, camouflage, defensive structures) for their adaptive potential* • Explains that to be able to live and grow, plants and animals require resources (e.g., food, water, light, and air)* • Describes the basic needs of plants and animals* 	
<i>New Vocabulary:</i> life cycle	<i>New Vocabulary:</i> bean, body, branch, bud, burrow, cat, caterpillar, cave, cycle, den, drown, enemy, fall, feline, frog, fruit, grow, head, hibernate, hind, neck, need, nest, protect, seed, seedling, shoulder, spider, spring, stage, summer, survive, toad, turtle, waist, wing, wolf, worm	<i>New Vocabulary:</i> absorb, active, adapt, alive, ball-and-socket joint, bone, bristle, bush, camouflage, clam, climate, defense, drink, feel, growth, hear, herb, human, knee, living, magnifying glass, mate, mineral, mouth, movement, protection, reproduction, rib, see, segment, sense, shell, shrub, sight, signal, sleep, smell, spears, swim, taste, touch, vine, vitamin
<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: Life 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
<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Identifies external parts of plants Describes the large scale external anatomy of humans* Describes functions of specific organs* Recognizes similarities and differences in diverse species* Groups organisms based on similarities* 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Identifies characteristics of organisms* Describes functions of structures of animals Describes the large scale external anatomy of humans* Explains that the function of a plant's root is to absorb water* Recognizes that the heart acts as a pump* Describes the structure and basic functions (movement and support) of the skeletal system Describes characteristics of each of the human senses* Describes how tools enhance the senses* Classifies commonly-known organisms (e.g., cat, dog, apple) based on external characteristics Groups organisms based on similarities* Sorts living and non-living things using different characteristics* Compares basic needs of different organisms in their environment* Recognizes the importance of oxygen to the survival of animals* Sorts organisms and objects as living or non-living Differentiates among living and nonliving things* Predicts how life forms will maintain homeostasis through particular changes* 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Recognizes that a flower will turn into the fruit and produce seeds Describes seed dispersal in plants* Describes the basic structures which make up a seed (e.g., seed coat)* Recognizes that one function of a plant root is support* Predicts how a change to one organ or system will affect another organ or system* Describes the function of the circulatory system Recognizes the components which make up the digestive system* Describes how things feel to the touch* Recognizes that living organisms can be classified using different characteristics* Classifies organisms by their external characteristics* Infers the type of resources needed for an animal to survive* Recognizes that all living organisms are made up of cells Explains why cells are called "building blocks"* Recognizes that energy is required for the chemical reactions in cells to occur*
<p>Organisms Reproduce, Transmit Genes; Evolution</p> <ul style="list-style-type: none"> Describes simple life cycles of animals Analyzes the life cycle of plants from reproduction and growth, through maturation and death* Compares the process of reproduction in the major phyla of living things* 	<p>Organisms Reproduce, Transmit Genes; Evolution</p> <ul style="list-style-type: none"> Describes how environmental changes cause species to evolve over time, thus producing new species* 	<p>Organisms Reproduce, Transmit Genes; Evolution</p> <ul style="list-style-type: none"> Recognizes that animals pass through a life cycle consisting of birth, growth and development to adulthood, reproduction, and death Orders the four stages of an insect life cycle (complete metamorphosis) Explains that mammals give birth to live young* Describes the concept of extinction* Gives examples of extinct organisms* Recognizes that biological adaptations include structural, behavioral, or physiological changes*

Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy
<ul style="list-style-type: none"> • Explains how physical characteristics of organisms help them to survive in their environments and reproduce* • Identifies habitats of various organisms* • Describes behavioral adaptations (terminology not used) that allow an organism to survive in a particular environment* • Compares features of organisms (e.g., appendages, reproductive rates, camouflage, defensive structures) for their adaptive potential* • Explains that to be able to live and grow, plants and animals require resources (e.g., food, water, light, and air)* • Describes the basic needs of plants and animals* 	<ul style="list-style-type: none"> • Explains how physical characteristics of organisms help them to survive in their environments and reproduce* • Gives examples of features that help plants and animals survive in different places* • Gives examples of foods that come from plants* 	<ul style="list-style-type: none"> • Explains how physical characteristics of organisms help them to survive in their environments and reproduce* • Explains how physical features of organisms help them to survive in their environments* • Describes structural adaptations that allow an organism to survive in a particular environment* • Explains how behavioral characteristics of organisms help them to survive in their environment* • Explains how the specific adaptations of an organism allow it survive in a particular environment* • Recognizes that camouflage allows an organism to blend in with its surroundings* • Explains how human population growth modifies the environment* • Recognizes that food chains (generally) begin with a plant* • Describes the organization of a simple food web* • Explains that green plants can make their own food from sunlight* • Locates the producer in an ecological pyramid*
<p><i>New Vocabulary:</i> bean, body, branch, bud, burrow, cat, caterpillar, cave, cycle, den, drown, enemy, fall, feline, frog, fruit, grow, head, hibernate, hind, neck, need, nest, protect, seed, seedling, shoulder, spider, spring, stage, summer, survive, toad, turtle, waist, wing, wolf, worm</p>	<p><i>New Vocabulary:</i> absorb, active, adapt, alive, ball-and-socket joint, bone, bristle, bush, camouflage, clam, climate, defense, drink, feel, growth, hear, herb, human, knee, living, magnifying glass, mate, mineral, mouth, movement, protection, reproduction, rib, see, segment, sense, shell, shrub, sight, signal, sleep, smell, spears, swim, taste, touch, vine, vitamin</p>	<p><i>New Vocabulary:</i> bark, cell theory, cellular, circulatory system, consumer, developmental sequence, digestion, digestive system, esophagus, exercise, extinct, food chain, food web, hibernation, hide, ingestion, intestine, larva, muscular system, nervous system, nymph, organ, petal, producer, protective coloration, pupa, rabbit, reproductive system, respiratory, respiratory system, response, seed coat, spines (bristles), stages of growth, system, unicellular, weather cycle</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: Life 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
<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> • Identifies characteristics of organisms* • Describes functions of structures of animals • Describes the large scale external anatomy of humans* • Explains that the function of a plant's root is to absorb water* • Recognizes that the heart acts as a pump* • Describes the structure and basic functions (movement and support) of the skeletal system • Describes characteristics of each of the human senses* • Describes how tools enhance the senses* • Classifies commonly-known organisms (e.g., cat, dog, apple) based on external characteristics • Groups organisms based on similarities* • Sorts living and non-living things using different characteristics* • Compares basic needs of different organisms in their environment* • Recognizes the importance of oxygen to the survival of animals* • Sorts organisms and objects as living or non-living • Differentiates among living and nonliving things* • Predicts how life forms will maintain homeostasis through particular changes* 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> • Recognizes that a flower will turn into the fruit and produce seeds • Describes seed dispersal in plants* • Describes the basic structures which make up a seed (e.g., seed coat)* • Recognizes that one function of a plant root is support* • Predicts how a change to one organ or system will affect another organ or system* • Describes the function of the circulatory system • Recognizes the components which make up the digestive system* • Describes how things feel to the touch* • Recognizes that living organisms can be classified using different characteristics* • Classifies organisms by their external characteristics* • Infers the type of resources needed for an animal to survive* • Recognizes that all living organisms are made up of cells • Explains why cells are called "building blocks"* • Recognizes that energy is required for the chemical reactions in cells to occur* 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> • Recognizes that the function of a plant's stem is to carry water, minerals, and food to other parts of the plant* • Identifies the external structures that perform particular functions in animals* • Explains that the major functions of a plant's root are to carry absorbed water and minerals and to provide support • Infers that a plant may not be able to live if its roots cannot absorb minerals* • Relates structures involved in embryonic and fetal development to their functions* • Describes the structure and function of the organs making up a flower (e.g., stigma, anthers, petals, pistil)* • Recognizes that the function of a plant leaf is to take in light and air* • Describes the structure and function of the respiratory system* • Describes the structure and function of the human reproductive system* • Describes the structure and function of the muscular system* • Describes the function of skeletal muscle* • Recognizes that the skeletal system's functions include production of red blood cells, support, protection of organs and movement* • Orders the organs of the digestive system to show how food travels within it* • Recognizes the components which make up the digestive system* • Traces the path that food takes as it is digested* • Describes the events that take place as food is digested* • Describes the structure and function of the excretory system* • Describes the structure and function of the nervous

		<ul style="list-style-type: none"> system (large scale)* Describes the idea that in complex, multi-cellular organisms, cells have specialized functions, communicate with each other, and are mutually dependent* Identifies the cell membrane in a cell diagram when given its function only* Identifies the cell membrane in a cell diagram when given its name only* Predicts how oxygen and carbon dioxide levels within a system are affected by respiration* Recognizes that photosynthesis is the process plants use to produce food using the energy of the Sun Gives examples of lipids* Lists factors which contribute to heart disease*
Organisms Reproduce, Transmit Genes; Evolution	Organisms Reproduce, Transmit Genes; Evolution	Organisms Reproduce, Transmit Genes; Evolution
<ul style="list-style-type: none"> Describes how environmental changes cause species to evolve over time, thus producing new species* 	<ul style="list-style-type: none"> Recognizes that animals pass through a life cycle consisting of birth, growth and development to adulthood, reproduction, and death Orders the four stages of an insect life cycle (complete metamorphosis) Explains that mammals give birth to live young* Describes the concept of extinction* Gives examples of extinct organisms* Recognizes that biological adaptations include structural, behavioral, or physiological changes* 	<ul style="list-style-type: none"> 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 the process of development for members of different animal phyla* Differentiates between examples of insect life cycles showing incomplete and complete metamorphosis* Orders the three stages of an insect life cycle (incomplete metamorphosis)* Recognizes biological evolution as a type of change over time* Describes how the present form and function of an organism could have evolved from prior form and function* Compares adaptations of plants and animals in different biomes*
Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy
<ul style="list-style-type: none"> Explains how physical characteristics of organisms help them to survive in their environments and reproduce* Gives examples of features that help plants and animals survive in different places* Gives examples of foods that come from plants* 	<ul style="list-style-type: none"> Explains how physical characteristics of organisms help them to survive in their environments and reproduce* Explains how physical features of organisms help them to survive in their environments* Describes structural adaptations that allow an organism to survive in a particular environment* Explains how behavioral characteristics of organisms help them to survive in their environment* 	<ul style="list-style-type: none"> Describes structures that allow an organism to obtain information from its environment* Recognizes that examining the structural characteristics of organisms can help one determine the environment in which an organism lives* Infers that living things must be adapted to their environment to be able to survive* Assesses features of organisms (e.g., appendages,

	<ul style="list-style-type: none"> • Explains how the specific adaptations of an organism allow it survive in a particular environment* • Recognizes that camouflage allows an organism to blend in with its surroundings* • Explains how human population growth modifies the environment* • Recognizes that food chains (generally) begin with a plant* • Describes the organization of a simple food web* • Explains that green plants can make their own food from sunlight* • Locates the producer in an ecological pyramid* 	<p>reproductive rates, camouflage, defensive structures) for their survival potential*</p> <ul style="list-style-type: none"> • Describes the role of biotic factors in limiting the size of populations* • Explains how energy is supplied to an ecosystem primarily as sunlight • Describes how energy flows through a food web, from producers to consumers* • Builds a simple food chain, using a given set of organisms • Recognizes the producer in a food chain* • Differentiates between consumers that eat plants and consumers that eat other consumers* • Understands that the role of a decomposer is to recycle matter from dead plants and animals* • Gives examples of decomposers* • Matches a decomposer to its specific role in an ecosystem* • Describes the organization of a pyramid of numbers*
<p><i>New Vocabulary:</i> absorb, active, adapt, alive, ball-and-socket joint, bone, bristle, bush, camouflage, clam, climate, defense, drink, feel, growth, hear, herb, human, knee, living, magnifying glass, mate, mineral, mouth, movement, protection, reproduction, rib, see, segment, sense, shell, shrub, sight, signal, sleep, smell, spears, swim, taste, touch, vine, vitamin</p>	<p><i>New Vocabulary:</i> bark, cell theory, cellular, circulatory system, consumer, developmental sequence, digestion, digestive system, esophagus, exercise, extinct, food chain, food web, hibernation, hide, ingestion, intestine, larva, muscular system, nervous system, nymph, organ, petal, producer, protective coloration, pupa, rabbit, reproductive system, respiratory, respiratory system, response, seed coat, spines (bristles), stages of growth, system, unicellular, weather cycle</p>	<p><i>New Vocabulary:</i> absorption, air pollution, algae, anus, bladder, blue-green algae, body system, change over time, chlorophyll, circulate, complete metamorphosis, control, decompose, development, diet, digest, ecology, ecosystem, eliminate, embryo, evolution, excrete, food pyramid (ecological), fungi, generation, genetics, heart disease, heredity, kidney, large intestine, liver, message, omnivore, organ system, osmosis, ovary, overweight, paramecia, passage of materials, pistil, pollen, pollination, prairie dog, red blood cell, regulate, respiration, rodent, sedimentary rock, skeletal system, skull, small intestine, smoking, source of energy, species, sperm, stamen, sugar, synthesis, tube, umbilical cord, urinary bladder, uterus, vein, virus, yeast, yolk sac</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: Life 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
<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Recognizes that a flower will turn into the fruit and produce seeds Describes seed dispersal in plants* Describes the basic structures which make up a seed (e.g., seed coat)* Recognizes that one function of a plant root is support* Predicts how a change to one organ or system will affect another organ or system* Describes the function of the circulatory system Recognizes the components which make up the digestive system* Describes how things feel to the touch* Recognizes that living organisms can be classified using different characteristics* Classifies organisms by their external characteristics* Infers the type of resources needed for an animal to survive* Recognizes that all living organisms are made up of cells Explains why cells are called "building blocks"* Recognizes that energy is required for the chemical reactions in cells to occur* 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Recognizes that the function of a plant's stem is to carry water, minerals, and food to other parts of the plant* Identifies the external structures that perform particular functions in animals* Explains that the major functions of a plant's root are to carry absorbed water and minerals and to provide support Infers that a plant may not be able to live if its roots cannot absorb minerals* Relates structures involved in embryonic and fetal development to their functions* Describes the structure and function of the organs making up a flower (e.g., stigma, anthers, petals, pistil)* Recognizes that the function of a plant leaf is to take in light and air* Describes the structure and function of the respiratory system* Describes the structure and function of the human reproductive system* Describes the structure and function of the muscular system* Describes the function of skeletal muscle* Recognizes that the skeletal system's functions include production of red blood cells, support, protection of organs and movement* Orders the organs of the digestive system to show how food travels within it* Recognizes the components which make up the digestive system* Traces the path that food takes as it is digested* Describes the events that take place as food is digested* Describes the structure and function of the excretory system* Describes the structure and function of the nervous 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Recognizes that the function of a plant's stem is to carry water, minerals, and food to other parts of the plant* Identifies the external structures that perform particular functions in animals* Recognizes that photosynthesis/energy capture occurs within a plant's leaves* Describes the structure and function of the organs making up a flower (e.g., stigma, anthers, petals, pistil)* Sequences the levels of organization in an organism to relate the parts to each other and to the whole* Describes the relationship between structure and function at the organ's level of organization Describes the organization seen within the plant reproductive system* Recognizes structures of the respiratory system* Describes the structure and function of the cells and tissues which make up the circulatory system Describes the structure and function of a plant's reproductive system* Describes the function of the digestive system Recognizes that the nervous system interacts with other systems of the body* Describes the cell theory* Recognizes that cells are the fundamental units and building blocks of life (the cell is the smallest unit which can reproduce itself) Gives examples of cells which perform specialized functions* Contrasts active transport and osmosis* Identifies the cell membrane when given its function within the cell* Describes the process of embryo growth and differentiation* Defines metabolism as the sum of chemical reactions in

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* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.

Blank cells indicate data are limited or unavailable for this range or document version.

	<p>system (large scale)*</p> <ul style="list-style-type: none"> • Describes the idea that in complex, multi-cellular organisms, cells have specialized functions, communicate with each other, and are mutually dependent* • Identifies the cell membrane in a cell diagram when given its function only* • Identifies the cell membrane in a cell diagram when given its name only* • Predicts how oxygen and carbon dioxide levels within a system are affected by respiration* • Recognizes that photosynthesis is the process plants use to produce food using the energy of the Sun • Gives examples of lipids* • Lists factors which contribute to heart disease* 	<p>the body*</p> <ul style="list-style-type: none"> • Describes the role of enzymes in digestion* • Explains that cells obtain food and oxygen from the outside environment* • Describes the process of photosynthesis in terms of its location within the cell, reactants, and products* • Recognizes that oxygen is an essential product of photosynthesis* • Gives examples of carbohydrates* • Classifies biomolecules as carbohydrates*
Organisms Reproduce, Transmit Genes; Evolution	Organisms Reproduce, Transmit Genes; Evolution	Organisms Reproduce, Transmit Genes; Evolution
<ul style="list-style-type: none"> • Recognizes that animals pass through a life cycle consisting of birth, growth and development to adulthood, reproduction, and death • Orders the four stages of an insect life cycle (complete metamorphosis) • Explains that mammals give birth to live young* • Describes the concept of extinction* • Gives examples of extinct organisms* • Recognizes that biological adaptations include structural, behavioral, or physiological changes* 	<ul style="list-style-type: none"> • 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 the process of development for members of different animal phyla* • Differentiates between examples of insect life cycles showing incomplete and complete metamorphosis* • Orders the three stages of an insect life cycle (incomplete metamorphosis)* • Recognizes biological evolution as a type of change over time* • Describes how the present form and function of an organism could have evolved from prior form and function* • Compares adaptations of plants and animals in different biomes* 	<ul style="list-style-type: none"> • 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* • Identifies examples of inherited traits* • Defines mutation* • Predicts patterns of inheritance for simple-dominant recessive alleles in dihybrid crosses (Mendelian inheritance)* • Predicts how variations provide an advantage in survival and reproduction • Defines a gene pool as the collection of inheritable genes in a population* • Explains how DNA from ancient species can be compared with modern species to determine evolutionary relationships*
Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy
<ul style="list-style-type: none"> • Explains how physical characteristics of organisms help them to survive in their environments and reproduce* • Explains how physical features of organisms help them to survive in their environments* • Describes structural adaptations that allow an organism to survive in a particular environment* • Explains how behavioral characteristics of organisms help them to survive in their environment* 	<ul style="list-style-type: none"> • Describes structures that allow an organism to obtain information from its environment* • Recognizes that examining the structural characteristics of organisms can help one determine the environment in which an organism lives* • Infers that living things must be adapted to their environment to be able to survive* • Assesses features of organisms (e.g., appendages, 	<ul style="list-style-type: none"> • Describes how the structure of a plant or animal complements the environment in which it is found* • Explains how an organism's body structures allow it to survive in a given environment* • Assesses features of organisms (e.g., appendages, reproductive rates, camouflage, defensive structures) for their adaptive potential* • Predicts how biotic factors will affect population

<ul style="list-style-type: none"> • Explains how the specific adaptations of an organism allow it survive in a particular environment* • Recognizes that camouflage allows an organism to blend in with its surroundings* • Explains how human population growth modifies the environment* • Recognizes that food chains (generally) begin with a plant* • Describes the organization of a simple food web* • Explains that green plants can make their own food from sunlight* • Locates the producer in an ecological pyramid* 	<p>reproductive rates, camouflage, defensive structures) for their survival potential*</p> <ul style="list-style-type: none"> • Describes the role of biotic factors in limiting the size of populations* • Explains how energy is supplied to an ecosystem primarily as sunlight • Describes how energy flows through a food web, from producers to consumers* • Builds a simple food chain, using a given set of organisms • Recognizes the producer in a food chain* • Differentiates between consumers that eat plants and consumers that eat other consumers* • Understands that the role of a decomposer is to recycle matter from dead plants and animals* • Gives examples of decomposers* • Matches a decomposer to its specific role in an ecosystem* • Describes the organization of a pyramid of numbers* 	<p>density*</p> <ul style="list-style-type: none"> • Recognizes abiotic and biotic factors can affect all levels of an ecosystem, from individual to community* • Predicts the plant stage likely to succeed a given plant stage in the succession of a particular ecosystem* • Describes how capture of light by plants serves as the basis of all food chains* • Explains how organisms are related within food chains* • Infers how changes in one portion of a food chain will affect other parts of the food chain • Explains why numbers of organisms decrease as trophic level within a food chain increases* • Predicts which link in a food chain will be made up of the fewest number of organisms* • Describes how producers, carnivores, herbivores and decomposers interact to form a food chain*
<p><i>New Vocabulary:</i> bark, cell theory, cellular, circulatory system, consumer, developmental sequence, digestion, digestive system, esophagus, exercise, extinct, food chain, food web, hibernation, hide, ingestion, intestine, larva, muscular system, nervous system, nymph, organ, petal, producer, protective coloration, pupa, rabbit, reproductive system, respiratory, respiratory system, response, seed coat, spines (bristles), stages of growth, system, unicellular, weather cycle</p>	<p><i>New Vocabulary:</i> absorption, air pollution, algae, anus, bladder, blue-green algae, body system, change over time, chlorophyll, circulate, complete metamorphosis, control, decompose, development, diet, digest, ecology, ecosystem, eliminate, embryo, evolution, excrete, food pyramid (ecological), fungi, generation, genetics, heart disease, heredity, kidney, large intestine, liver, message, omnivore, organ system, osmosis, ovary, overweight, paramecia, passage of materials, pistil, pollen, pollination, prairie dog, red blood cell, regulate, respiration, rodent, sedimentary rock, skeletal system, skull, small intestine, smoking, source of energy, species, sperm, stamen, sugar, synthesis, tube, umbilical cord, urinary bladder, uterus, vein, virus, yeast, yolk sac</p>	<p><i>New Vocabulary:</i> active transport, allele, atmospheric pollution, body fat, capillary, carbohydrate, cellulose, chromosome, cleavage, coniferous tree, constitute, cross (genetic), crossing over, dihybrid cross, dominant, environmental condition, enzyme, excretory system, fat, gastrulation, gene, gene frequency, gene pool, genetic material, genotype, gestation, heterozygous, implantation, infectious disease, inherited, involuntary responses, lichen, lipids, lubricate, lymphatic system, Mendelian ratio, moisture, monohybrid cross, moss, mutation, nucleic acid, nucleolus, oak, overcrowding, ovulation, phenotype, pigment, plasma, platelet, population growth, prehistoric, protoplasm, pure, recessive, replication, selective breeding, semipermeable, sponge, starch, stigma, stress, synthesize, trait, white blood cell, xylem</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> → flow of energy (food chains)</p>

Subject: General Science
Goal Strand: Life 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
<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Recognizes that the function of a plant's stem is to carry water, minerals, and food to other parts of the plant* Identifies the external structures that perform particular functions in animals* Explains that the major functions of a plant's root are to carry absorbed water and minerals and to provide support Infers that a plant may not be able to live if its roots cannot absorb minerals* Relates structures involved in embryonic and fetal development to their functions* Describes the structure and function of the organs making up a flower (e.g., stigma, anthers, petals, pistil)* Recognizes that the function of a plant leaf is to take in light and air* Describes the structure and function of the respiratory system* Describes the structure and function of the human reproductive system* Describes the structure and function of the muscular system* Describes the function of skeletal muscle* Recognizes that the skeletal system's functions include production of red blood cells, support, protection of organs and movement* Orders the organs of the digestive system to show how food travels within it* Recognizes the components which make up the digestive system* Traces the path that food takes as it is digested* Describes the events that take place as food is digested* Describes the structure and function of the excretory system* Describes the structure and function of the nervous 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Recognizes that the function of a plant's stem is to carry water, minerals, and food to other parts of the plant* Identifies the external structures that perform particular functions in animals* Recognizes that photosynthesis/energy capture occurs within a plant's leaves* Describes the structure and function of the organs making up a flower (e.g., stigma, anthers, petals, pistil)* Sequences the levels of organization in an organism to relate the parts to each other and to the whole* Describes the relationship between structure and function at the organ's level of organization Describes the organization seen within the plant reproductive system* Recognizes structures of the respiratory system* Describes the structure and function of the cells and tissues which make up the circulatory system Describes the structure and function of a plant's reproductive system* Describes the function of the digestive system Recognizes that the nervous system interacts with other systems of the body* Describes the cell theory* Recognizes that cells are the fundamental units and building blocks of life (the cell is the smallest unit which can reproduce itself) Gives examples of cells which perform specialized functions* Contrasts active transport and osmosis* Identifies the cell membrane when given its function within the cell* Describes the process of embryo growth and differentiation* Defines metabolism as the sum of chemical reactions in 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Understands that a plant's roots generally do not produce food via photosynthesis* Recognizes that the ovary of a plant will develop into a fruit* Recognizes that seeds contain embryos* Describes the structure and specialization of function of the cells and tissues found within a typical plant leaf* Describes transpiration in plants* Describes the function of tissues within the respiratory system* Defines neuron* Describes the characteristics shared by all living organisms Describes the idea that cells of multicellular organisms have specialized functions* Infers that most cell functions involve chemical reactions* Analyzes the structures, functions, and processes used by the cell in information feedback* Describes ways in which materials enter the cell* Identifies the cell membrane when given its function within the cell* Describes the role of enzymes in cellular reactions* Describes the structure and mechanism of action of enzymes* Describes the chemical reactions used by the cell in respiration Compares respiration in plant and animal cells* Compares the process of anaerobic respiration in different organisms* Compares the processes of photosynthesis and respiration Recognizes that hormones are chemical messengers* Defines homeostasis*

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Blank cells indicate data are limited or unavailable for this range or document version.

<p>system (large scale)*</p> <ul style="list-style-type: none"> • Describes the idea that in complex, multi-cellular organisms, cells have specialized functions, communicate with each other, and are mutually dependent* • Identifies the cell membrane in a cell diagram when given its function only* • Identifies the cell membrane in a cell diagram when given its name only* • Predicts how oxygen and carbon dioxide levels within a system are affected by respiration* • Recognizes that photosynthesis is the process plants use to produce food using the energy of the Sun • Gives examples of lipids* • Lists factors which contribute to heart disease* 	<p>the body*</p> <ul style="list-style-type: none"> • Describes the role of enzymes in digestion* • Explains that cells obtain food and oxygen from the outside environment* • Describes the process of photosynthesis in terms of its location within the cell, reactants, and products* • Recognizes that oxygen is an essential product of photosynthesis* • Gives examples of carbohydrates* • Classifies biomolecules as carbohydrates* 	
<p>Organisms Reproduce, Transmit Genes; Evolution</p>	<p>Organisms Reproduce, Transmit Genes; Evolution</p>	<p>Organisms Reproduce, Transmit Genes; Evolution</p>
<ul style="list-style-type: none"> • 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 the process of development for members of different animal phyla* • Differentiates between examples of insect life cycles showing incomplete and complete metamorphosis* • Orders the three stages of an insect life cycle (incomplete metamorphosis)* • Recognizes biological evolution as a type of change over time* • Describes how the present form and function of an organism could have evolved from prior form and function* • Compares adaptations of plants and animals in different biomes* 	<ul style="list-style-type: none"> • 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* • Identifies examples of inherited traits* • Defines mutation* • Predicts patterns of inheritance for simple-dominant recessive alleles in dihybrid crosses (Mendelian inheritance)* • Predicts how variations provide an advantage in survival and reproduction • Defines a gene pool as the collection of inheritable genes in a population* • Explains how DNA from ancient species can be compared with modern species to determine evolutionary relationships* 	<ul style="list-style-type: none"> • Recognizes terminology used to describe the stages of embryo development* • Recognizes that replication is the cellular process in which DNA is copied* • Classifies examples of mutations as inversions, deletions, substitutions and point mutations* • Describes patterns of inheritance seen for single gene traits* • Determines the parents involved in a monohybrid cross, given the outcome of that cross and the genotype and/or phenotype of the other parent* • Predicts patterns of inheritance for simple-dominant recessive alleles in dihybrid crosses (Mendelian inheritance)* • Predicts probabilities of inheritance for sex-linked alleles* • Describes how new varieties of plants and animals are produced through selective breeding (artificial selection)* • Recognizes factors that allow speciation to occur* • Gives examples of vestigial structures in humans* • Recognizes examples of mimicry* • Evaluates survival of organisms in particular environmental conditions* • Explains how a given form of an organism may be more likely to survive in a particular ecosystem, causing a change in the abundance of that form of the organism within that population*

Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy
<ul style="list-style-type: none"> • Describes structures that allow an organism to obtain information from its environment* • Recognizes that examining the structural characteristics of organisms can help one determine the environment in which an organism lives* • Infers that living things must be adapted to their environment to be able to survive* • Assesses features of organisms (e.g., appendages, reproductive rates, camouflage, defensive structures) for their survival potential* • Describes the role of biotic factors in limiting the size of populations* • Explains how energy is supplied to an ecosystem primarily as sunlight • Describes how energy flows through a food web, from producers to consumers* • Builds a simple food chain, using a given set of organisms • Recognizes the producer in a food chain* • Differentiates between consumers that eat plants and consumers that eat other consumers* • Understands that the role of a decomposer is to recycle matter from dead plants and animals* • Gives examples of decomposers* • Matches a decomposer to its specific role in an ecosystem* • Describes the organization of a pyramid of numbers* 	<ul style="list-style-type: none"> • Describes how the structure of a plant or animal complements the environment in which it is found* • Explains how an organism's body structures allow it to survive in a given environment* • Assesses features of organisms (e.g., appendages, reproductive rates, camouflage, defensive structures) for their adaptive potential* • Predicts how biotic factors will affect population density* • Recognizes abiotic and biotic factors can affect all levels of an ecosystem, from individual to community* • Predicts the plant stage likely to succeed a given plant stage in the succession of a particular ecosystem* • Describes how capture of light by plants serves as the basis of all food chains* • Explains how organisms are related within food chains* • Infers how changes in one portion of a food chain will affect other parts of the food chain • Explains why numbers of organisms decrease as trophic level within a food chain increases* • Predicts which link in a food chain will be made up of the fewest number of organisms* • Describes how producers, carnivores, herbivores and decomposers interact to form a food chain* 	<ul style="list-style-type: none"> • Gives an example of a vestigial structure* • Assesses features of organisms (e.g., appendages, reproductive rates, camouflage, defensive structures) for their competitive potential* • Recognizes factors that affect the number of organisms an ecosystem is able to support* • Recognizes that living organisms are capable of producing populations of infinite size, but are limited by the amount of resources available in the environment (i.e., carrying capacity and limiting factors)* • Identifies biotic factors in an environment that affect population density* • Classifies abiotic and biotic factors in an environment • Describes responses of an ecosystem to the events that cause it to change* • Recognizes that plants convert light energy into stored energy* • Classifies organisms according to the function they serve in a food chain* • Explains why numbers of organisms decrease as trophic level within a food chain increases* • Predicts which link in a food chain will be made up of the fewest number of organisms* • Recognizes that food webs are comprised of more than one food chain* • Recognizes that individual food chains occur within a food web*
<p><i>New Vocabulary:</i> absorption, air pollution, algae, anus, bladder, blue-green algae, body system, change over time, chlorophyll, circulate, complete metamorphosis, control, decompose, development, diet, digest, ecology, ecosystem, eliminate, embryo, evolution, excrete, food pyramid (ecological), fungi, generation, genetics, heart disease, heredity, kidney, large intestine, liver, message, omnivore, organ system, osmosis, ovary, overweight, paramecia, passage of materials, pistil, pollen, pollination, prairie dog, red blood cell, regulate, respiration, rodent, sedimentary rock, skeletal system, skull, small intestine, smoking, source of energy, species, sperm, stamen, sugar, synthesis, tube, umbilical cord, urinary bladder, uterus, vein, virus, yeast, yolk sac</p>	<p><i>New Vocabulary:</i> active transport, allele, atmospheric pollution, body fat, capillary, carbohydrate, cellulose, chromosome, cleavage, coniferous tree, constitute, cross (genetic), crossing over, dihybrid cross, dominant, environmental condition, enzyme, excretory system, fat, gastrulation, gene, gene frequency, gene pool, genetic material, genotype, gestation, heterozygous, implantation, infectious disease, inherited, involuntary responses, lichen, lipids, lubricate, lymphatic system, Mendelian ratio, moisture, monohybrid cross, moss, mutation, nucleic acid, nucleolus, oak, overcrowding, ovulation, phenotype, pigment, plasma, platelet, population growth, prehistoric, protoplasm, pure, recessive, replication, selective breeding, semipermeable, sponge, starch, stigma, stress, synthesize, trait, white blood cell, xylem</p>	<p><i>New Vocabulary:</i> abiotic factor, adrenalin, amoeba, artificial selection, axon, bacteria of decay, biologist, blood sugar level, brain, breeder, cellular respiration, cellular structure, conservation biologist, deletion, electrochemical impulse, energy releasing process, estrogen, fermentation, follicle-stimulating hormone, guard cell, hormone, inorganic, insulin, inversion, life span, natural selection, neuron, neurotransmitter, pancreas, parathormone, protist, purebred, rate of entry, specialization, specimen, stimulus, stomate, substitution, substratum, synapse, translocation, transportation, vestigial structure</p>

<i>New Signs and Symbols: none</i>	<i>New Signs and Symbols: → flow of energy (food chains)</i>	<i>New Signs and Symbols: none</i>
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Subject: General Science
Goal Strand: Life 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
<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Recognizes that the function of a plant's stem is to carry water, minerals, and food to other parts of the plant* Identifies the external structures that perform particular functions in animals* Recognizes that photosynthesis/energy capture occurs within a plant's leaves* Describes the structure and function of the organs making up a flower (e.g., stigma, anthers, petals, pistil)* Sequences the levels of organization in an organism to relate the parts to each other and to the whole* Describes the relationship between structure and function at the organ's level of organization Describes the organization seen within the plant reproductive system* Recognizes structures of the respiratory system* Describes the structure and function of the cells and tissues which make up the circulatory system Describes the structure and function of a plant's reproductive system* Describes the function of the digestive system Recognizes that the nervous system interacts with other systems of the body* Describes the cell theory* Recognizes that cells are the fundamental units and building blocks of life (the cell is the smallest unit which can reproduce itself) Gives examples of cells which perform specialized functions* Contrasts active transport and osmosis* Identifies the cell membrane when given its function within the cell* Describes the process of embryo growth and differentiation* Defines metabolism as the sum of chemical reactions in 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Understands that a plant's roots generally do not produce food via photosynthesis* Recognizes that the ovary of a plant will develop into a fruit* Recognizes that seeds contain embryos* Describes the structure and specialization of function of the cells and tissues found within a typical plant leaf* Describes transpiration in plants* Describes the function of tissues within the respiratory system* Defines neuron* Describes the characteristics shared by all living organisms Describes the idea that cells of multicellular organisms have specialized functions* Infers that most cell functions involve chemical reactions* Analyzes the structures, functions, and processes used by the cell in information feedback* Describes ways in which materials enter the cell* Identifies the cell membrane when given its function within the cell* Describes the role of enzymes in cellular reactions* Describes the structure and mechanism of action of enzymes* Describes the chemical reactions used by the cell in respiration Compares respiration in plant and animal cells* Compares the process of anaerobic respiration in different organisms* Compares the processes of photosynthesis and respiration Recognizes that hormones are chemical messengers* Defines homeostasis* 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> Describes the major function of a plant's leaves* Describes the purpose for the germination of pollen and growth of pollen tubes* Describes the relationship between structure and function at the tissue level of organization* Compares the function of mitochondria and chloroplast within the cell* Describes the structures, functions, and processes used by the cell in enabling cellular movement (unicellular organisms)* Determines the function of a cell based on the presence and abundance of organelles found in that cell* Describes characteristics of the cell membrane that allow it to regulate import and export of cellular materials* Compares photosynthesis and respiration in terms of reactants and products* Describes the structure of lipids* Describes the structure of amino acids and proteins*

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<p>the body*</p> <ul style="list-style-type: none"> • Describes the role of enzymes in digestion* • Explains that cells obtain food and oxygen from the outside environment* • Describes the process of photosynthesis in terms of its location within the cell, reactants, and products* • Recognizes that oxygen is an essential product of photosynthesis* • Gives examples of carbohydrates* • Classifies biomolecules as carbohydrates* 		
<p>Organisms Reproduce, Transmit Genes; Evolution</p>	<p>Organisms Reproduce, Transmit Genes; Evolution</p>	<p>Organisms Reproduce, Transmit Genes; Evolution</p>
<ul style="list-style-type: none"> • 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* • Identifies examples of inherited traits* • Defines mutation* • Predicts patterns of inheritance for simple-dominant recessive alleles in dihybrid crosses (Mendelian inheritance)* • Predicts how variations provide an advantage in survival and reproduction • Defines a gene pool as the collection of inheritable genes in a population* • Explains how DNA from ancient species can be compared with modern species to determine evolutionary relationships* 	<ul style="list-style-type: none"> • Recognizes terminology used to describe the stages of embryo development* • Recognizes that replication is the cellular process in which DNA is copied* • Classifies examples of mutations as inversions, deletions, substitutions and point mutations* • Describes patterns of inheritance seen for single gene traits* • Determines the parents involved in a monohybrid cross, given the outcome of that cross and the genotype and/or phenotype of the other parent* • Predicts patterns of inheritance for simple-dominant recessive alleles in dihybrid crosses (Mendelian inheritance)* • Predicts probabilities of inheritance for sex-linked alleles* • Describes how new varieties of plants and animals are produced through selective breeding (artificial selection)* • Recognizes factors that allow speciation to occur* • Gives examples of vestigial structures in humans* • Recognizes examples of mimicry* • Evaluates survival of organisms in particular environmental conditions* • Explains how a given form of an organism may be more likely to survive in a particular ecosystem, causing a change in the abundance of that form of the organism within that population* • Gives an example of a vestigial structure* 	<ul style="list-style-type: none"> • Describes simple life cycles of plants* • Evaluates the importance of mutation in producing genetic variation* • Predicts probabilities of inheritance for simple dominant-recessive alleles in monohybrid crosses (Mendelian inheritance)* • Describes incomplete dominance* • Classifies given characteristics as examples of phenotype* • Describes assumptions of the theory of evolution (e.g., species vary, tendency of species to produce more offspring than the environment will support)* • Interprets evolutionary tree diagrams to determine ancestors of a given group of organisms*
<p>Ecosystem Interactions, Survival, Matter, Energy</p>	<p>Ecosystem Interactions, Survival, Matter, Energy</p>	<p>Ecosystem Interactions, Survival, Matter, Energy</p>
<ul style="list-style-type: none"> • Describes how the structure of a plant or animal complements the environment in which it is found* • Explains how an organism's body structures allow it to 	<ul style="list-style-type: none"> • Assesses features of organisms (e.g., appendages, reproductive rates, camouflage, defensive structures) for their competitive potential* 	<ul style="list-style-type: none"> • Gives examples of environmental conditions that may influence the characteristics of an organism* • Recognizes the stages of succession seen in an

<p>survive in a given environment*</p> <ul style="list-style-type: none"> Assesses features of organisms (e.g., appendages, reproductive rates, camouflage, defensive structures) for their adaptive potential* Predicts how biotic factors will affect population density* Recognizes abiotic and biotic factors can affect all levels of an ecosystem, from individual to community* Predicts the plant stage likely to succeed a given plant stage in the succession of a particular ecosystem* Describes how capture of light by plants serves as the basis of all food chains* Explains how organisms are related within food chains* Infers how changes in one portion of a food chain will affect other parts of the food chain Explains why numbers of organisms decrease as trophic level within a food chain increases* Predicts which link in a food chain will be made up of the fewest number of organisms* Describes how producers, carnivores, herbivores and decomposers interact to form a food chain* 	<ul style="list-style-type: none"> Recognizes factors that affect the number of organisms an ecosystem is able to support* Recognizes that living organisms are capable of producing populations of infinite size, but are limited by the amount of resources available in the environment (i.e., carrying capacity and limiting factors)* Identifies biotic factors in an environment that affect population density* Classifies abiotic and biotic factors in an environment Describes responses of an ecosystem to the events that cause it to change* Recognizes that plants convert light energy into stored energy* Classifies organisms according to the function they serve in a food chain* Explains why numbers of organisms decrease as trophic level within a food chain increases* Predicts which link in a food chain will be made up of the fewest number of organisms* Recognizes that food webs are comprised of more than one food chain* Recognizes that individual food chains occur within a food web* 	<p>ecosystem (e.g., pioneer, climax, etc.)*</p> <ul style="list-style-type: none"> Gives examples of pioneer plants* Defines climax community* Recognizes that producers convert light energy into chemical energy* Describes the organization of a pyramid of biomass*
<p><i>New Vocabulary:</i> active transport, allele, atmospheric pollution, body fat, capillary, carbohydrate, cellulose, chromosome, cleavage, coniferous tree, constitute, cross (genetic), crossing over, dihybrid cross, dominant, environmental condition, enzyme, excretory system, fat, gastrulation, gene, gene frequency, gene pool, genetic material, genotype, gestation, heterozygous, implantation, infectious disease, inherited, involuntary responses, lichen, lipids, lubricate, lymphatic system, Mendelian ratio, moisture, monohybrid cross, moss, mutation, nucleic acid, nucleolus, oak, overcrowding, ovulation, phenotype, pigment, plasma, platelet, population growth, prehistoric, protoplasm, pure, recessive, replication, selective breeding, semipermeable, sponge, starch, stigma, stress, synthesize, trait, white blood cell, xylem</p>	<p><i>New Vocabulary:</i> abiotic factor, adrenalin, amoeba, artificial selection, axon, bacteria of decay, biologist, blood sugar level, brain, breeder, cellular respiration, cellular structure, conservation biologist, deletion, electrochemical impulse, energy releasing process, estrogen, fermentation, follicle-stimulating hormone, guard cell, hormone, inorganic, insulin, inversion, life span, natural selection, neuron, neurotransmitter, pancreas, parathormone, protist, purebred, rate of entry, specialization, specimen, stimulus, stomate, substitution, substratum, synapse, translocation, transportation, vestigial structure</p>	<p><i>New Vocabulary:</i> geotropism, germination, maturation, pioneer (plant)</p>
<p><i>New Signs and Symbols:</i> → flow of energy (food chains)</p>	<p><i>New Signs and Symbols:</i> none</p>	<p><i>New Signs and Symbols:</i> none</p>

Subject: General Science
Goal Strand: Life 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 Above 240
<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> • Understands that a plant's roots generally do not produce food via photosynthesis* • Recognizes that the ovary of a plant will develop into a fruit* • Recognizes that seeds contain embryos* • Describes the structure and specialization of function of the cells and tissues found within a typical plant leaf* • Describes transpiration in plants* • Describes the function of tissues within the respiratory system* • Defines neuron* • Describes the characteristics shared by all living organisms • Describes the idea that cells of multicellular organisms have specialized functions* • Infers that most cell functions involve chemical reactions* • Analyzes the structures, functions, and processes used by the cell in information feedback* • Describes ways in which materials enter the cell* • Identifies the cell membrane when given its function within the cell* • Describes the role of enzymes in cellular reactions* • Describes the structure and mechanism of action of enzymes* • Describes the chemical reactions used by the cell in respiration • Compares respiration in plant and animal cells* • Compares the process of anaerobic respiration in different organisms* • Compares the processes of photosynthesis and respiration • Recognizes that hormones are chemical messengers* • Defines homeostasis* 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> • Describes the major function of a plant's leaves* • Describes the purpose for the germination of pollen and growth of pollen tubes* • Describes the relationship between structure and function at the tissue level of organization* • Compares the function of mitochondria and chloroplast within the cell* • Describes the structures, functions, and processes used by the cell in enabling cellular movement (unicellular organisms)* • Determines the function of a cell based on the presence and abundance of organelles found in that cell* • Describes characteristics of the cell membrane that allow it to regulate import and export of cellular materials* • Compares photosynthesis and respiration in terms of reactants and products* • Describes the structure of lipids* • Describes the structure of amino acids and proteins* 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> • Describes the structures, functions, and processes used by the cell in enabling cellular movement (unicellular organisms)* • Draws conclusions from data relating to osmosis in cells and cell models* • Differentiates between biomolecules in terms of structure and function within the cell*

Organisms Reproduce, Transmit Genes; Evolution	Organisms Reproduce, Transmit Genes; Evolution	Organisms Reproduce, Transmit Genes; Evolution
<ul style="list-style-type: none"> • Recognizes terminology used to describe the stages of embryo development* • Recognizes that replication is the cellular process in which DNA is copied* • Classifies examples of mutations as inversions, deletions, substitutions and point mutations* • Describes patterns of inheritance seen for single gene traits* • Determines the parents involved in a monohybrid cross, given the outcome of that cross and the genotype and/or phenotype of the other parent* • Predicts patterns of inheritance for simple-dominant recessive alleles in dihybrid crosses (Mendelian inheritance)* • Predicts probabilities of inheritance for sex-linked alleles* • Describes how new varieties of plants and animals are produced through selective breeding (artificial selection)* • Recognizes factors that allow speciation to occur* • Gives examples of vestigial structures in humans* • Recognizes examples of mimicry* • Evaluates survival of organisms in particular environmental conditions* • Explains how a given form of an organism may be more likely to survive in a particular ecosystem, causing a change in the abundance of that form of the organism within that population* • Gives an example of a vestigial structure* 	<ul style="list-style-type: none"> • Describes simple life cycles of plants* • Evaluates the importance of mutation in producing genetic variation* • Predicts probabilities of inheritance for simple dominant-recessive alleles in monohybrid crosses (Mendelian inheritance)* • Describes incomplete dominance* • Classifies given characteristics as examples of phenotype* • Describes assumptions of the theory of evolution (e.g., species vary, tendency of species to produce more offspring than the environment will support)* • Interprets evolutionary tree diagrams to determine ancestors of a given group of organisms* 	
Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy
<ul style="list-style-type: none"> • Assesses features of organisms (e.g., appendages, reproductive rates, camouflage, defensive structures) for their competitive potential* • Recognizes factors that affect the number of organisms an ecosystem is able to support* • Recognizes that living organisms are capable of producing populations of infinite size, but are limited by the amount of resources available in the environment (i.e., carrying capacity and limiting factors)* • Identifies biotic factors in an environment that affect population density* • Classifies abiotic and biotic factors in an environment 	<ul style="list-style-type: none"> • Gives examples of environmental conditions that may influence the characteristics of an organism* • Recognizes the stages of succession seen in an ecosystem (e.g., pioneer, climax, etc.)* • Gives examples of pioneer plants* • Defines climax community* • Recognizes that producers convert light energy into chemical energy* • Describes the organization of a pyramid of biomass* 	

<ul style="list-style-type: none"> • Describes responses of an ecosystem to the events that cause it to change* • Recognizes that plants convert light energy into stored energy* • Classifies organisms according to the function they serve in a food chain* • Explains why numbers of organisms decrease as trophic level within a food chain increases* • Predicts which link in a food chain will be made up of the fewest number of organisms* • Recognizes that food webs are comprised of more than one food chain* • Recognizes that individual food chains occur within a food web* 		
<p><i>New Vocabulary:</i> abiotic factor, adrenalin, amoeba, artificial selection, axon, bacteria of decay, biologist, blood sugar level, brain, breeder, cellular respiration, cellular structure, conservation biologist, deletion, electrochemical impulse, energy releasing process, estrogen, fermentation, follicle-stimulating hormone, guard cell, hormone, inorganic, insulin, inversion, life span, natural selection, neuron, neurotransmitter, pancreas, parathormone, protist, purebred, rate of entry, specialization, specimen, stimulus, stomate, substitution, substratum, synapse, translocation, transportation, vestigial structure</p>	<p><i>New Vocabulary:</i> geotropism, germination, maturation, pioneer (plant)</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: Life Science
RIT Score Range: Above 240

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop Above 240
<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> • Describes the major function of a plant's leaves* • Describes the purpose for the germination of pollen and growth of pollen tubes* • Describes the relationship between structure and function at the tissue level of organization* • Compares the function of mitochondria and chloroplast within the cell* • Describes the structures, functions, and processes used by the cell in enabling cellular movement (unicellular organisms)* • Determines the function of a cell based on the presence and abundance of organelles found in that cell* • Describes characteristics of the cell membrane that allow it to regulate import and export of cellular materials* • Compares photosynthesis and respiration in terms of reactants and products* • Describes the structure of lipids* • Describes the structure of amino acids and proteins* 	<p>Cells, Organisms Structure and Function</p> <ul style="list-style-type: none"> • Describes the structures, functions, and processes used by the cell in enabling cellular movement (unicellular organisms)* • Draws conclusions from data relating to osmosis in cells and cell models* • Differentiates between biomolecules in terms of structure and function within the cell*
<p>Organisms Reproduce, Transmit Genes; Evolution</p> <ul style="list-style-type: none"> • Describes simple life cycles of plants* • Evaluates the importance of mutation in producing genetic variation* • Predicts probabilities of inheritance for simple dominant-recessive alleles in monohybrid crosses (Mendelian inheritance)* • Describes incomplete dominance* • Classifies given characteristics as examples of phenotype* • Describes assumptions of the theory of evolution (e.g., species vary, tendency of species to produce more offspring than the environment will support)* • Interprets evolutionary tree diagrams to determine ancestors of a given group of organisms* 	<p>Organisms Reproduce, Transmit Genes; Evolution</p>

Ecosystem Interactions, Survival, Matter, Energy	Ecosystem Interactions, Survival, Matter, Energy
<ul style="list-style-type: none"> • Gives examples of environmental conditions that may influence the characteristics of an organism* • Recognizes the stages of succession seen in an ecosystem (e.g., pioneer, climax, etc.)* • Gives examples of pioneer plants* • Defines climax community* • Recognizes that producers convert light energy into chemical energy* • Describes the organization of a pyramid of biomass* 	
<i>New Vocabulary:</i> geotropism, germination, maturation, pioneer (plant)	<i>New Vocabulary:</i> none
<i>New Signs and Symbols:</i> none	<i>New Signs and Symbols:</i> none

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

Skills and Concepts to Develop Below 171	Skills and Concepts to Introduce 171 - 180
Earth Materials, Weather, Climate, Water	Earth Materials, Weather, Climate, Water
	<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*
Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time
Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe
<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, dew, weather</i>
<i>New Signs and Symbols: none</i>	<i>New Signs and Symbols: none</i>

Subject: General Science
Goal Strand: Earth Systems 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
Earth Materials, Weather, Climate, Water	Earth Materials, Weather, Climate, Water	Earth Materials, Weather, Climate, Water
	<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* 	<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* • Recognizes processes that make up the water cycle* • Describes different types of Earth materials • Analyzes precipitation in weather systems* • 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's energy can be stored in objects as heat* • Explains that tiny rocks come from the weathering and breakage of larger rocks* • Explains how recycling protects the environment* • Gives examples of natural resources*
Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time
Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe
<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* 	<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*
<i>New Vocabulary:</i> none	<i>New Vocabulary:</i> atmosphere, carbon dioxide, cloud, dew, weather	<i>New Vocabulary:</i> anemometer, autumn, axis, barometer, beach, body of water, crystal, daylight, fossil, grain, hydrometer, hygrometer, land, metal, natural resource, night, recycle, revolve, rotate, sand, Saturn, shadow, stone, store, stream, tar, tilt, 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 Systems 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
<p>Earth Materials, Weather, Climate, Water</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>Earth Materials, Weather, Climate, Water</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* • Recognizes processes that make up the water cycle* • Describes different types of Earth materials • Analyzes precipitation in weather systems* • 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's energy can be stored in objects as heat* • Explains that tiny rocks come from the weathering and breakage of larger rocks* • Explains how recycling protects the environment* • Gives examples of natural resources* 	<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Describes the distribution of water on Earth • Gives examples of forms of precipitation* • Classifies rain, sleet, snow, etc., as precipitation* • 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)* • Recognizes that the Sun's light energy is transformed to heat energy upon hitting Earth's surface* • 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*
<p>Earth's Surface; Plate Tectonics; Geologic Time</p>	<p>Earth's Surface; Plate Tectonics; Geologic Time</p>	<p>Earth's Surface; Plate Tectonics; Geologic Time</p> <ul style="list-style-type: none"> • Explains how volcanoes cause pollution* • 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 • Explains that fossils provide evidence about organisms that lived long ago*
<p>Earth, Moon, Sun, Solar System, and Universe</p> <ul style="list-style-type: none"> • Recognizes that the Sun is not a planet* • Describes the Sun, Moon, stars, and Earth* 	<p>Earth, Moon, Sun, Solar System, and Universe</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* 	<p>Earth, Moon, Sun, Solar System, and Universe</p> <ul style="list-style-type: none"> • Recognizes that day and night are caused by the Earth's rotation on its axis* • Recognizes that the Sun is a medium-sized star • Compares the Sun to other stars and star systems

	<ul style="list-style-type: none"> • 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* 	<ul style="list-style-type: none"> • 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, dew, weather	<i>New Vocabulary:</i> anemometer, autumn, axis, barometer, beach, body of water, crystal, daylight, fossil, grain, hydrometer, hygrometer, land, metal, natural resource, night, recycle, revolve, rotate, sand, Saturn, shadow, stone, store, stream, tar, tilt, winter	<i>New Vocabulary:</i> asteroid, comet, condense, crack, decay, dust, Earth's surface, erosion, evaporate, flood, fresh water, granite, humidity, lava, lignite, magma, melt, meteor, moon (satellite), obsidian, petrification, Polaris, remains, reservoir, sea, Sirius, slate, thunder, Venus, wearing away/down, weathering
<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 Systems 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
<p>Earth Materials, Weather, Climate, Water</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* • Recognizes processes that make up the water cycle* • Describes different types of Earth materials • Analyzes precipitation in weather systems* • 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's energy can be stored in objects as heat* • Explains that tiny rocks come from the weathering and breakage of larger rocks* • Explains how recycling protects the environment* • Gives examples of natural resources* 	<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Describes the distribution of water on Earth • Gives examples of forms of precipitation* • Classifies rain, sleet, snow, etc., as precipitation* • 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)* • Recognizes that the Sun's light energy is transformed to heat energy upon hitting Earth's surface* • 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* 	<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Defines a spring as underground water which seeps onto the Earth's surface* • Analyzes processes which comprise the water cycle* • 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 physical characteristics of different rocks and minerals (e.g., color, hardness, texture, pattern, layering, particle size)* • Describes the process of sedimentary rock formation* • Defines humidity* • Understands that meteorologists use multiple measurements of weather conditions to make forecasts* • 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* • 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* • Describes curbside recycling* • Recognizes applied uses of water (use in making electricity, transportation, recreation)*

		<ul style="list-style-type: none"> Recognizes simple conservation measures used to protect the environment (e.g., recycling, water conservation)*
Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time
	<ul style="list-style-type: none"> Explains how volcanoes cause pollution* 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 Explains that fossils provide evidence about organisms that lived long ago* 	<ul style="list-style-type: none"> 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* Describes relative dating techniques* Recognizes that the fossil record gives geological evidence that documents when many life forms appeared, diversified, and went extinct*
Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe
<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* 	<ul style="list-style-type: none"> Recognizes that day and night are caused by the Earth's rotation on its axis* 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* 	<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* Analyzes diagrams showing how the relative intensity of sunlight differs in summer and winter* 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

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* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.

Blank cells indicate data are limited or unavailable for this range or document version.

	<ul style="list-style-type: none"> • 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"> • 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* • 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, crystal, daylight, fossil, grain, hydrometer, hygrometer, land, metal, natural resource, night, recycle, revolve, rotate, sand, Saturn, shadow, stone, store, stream, tar, tilt, winter</p>	<p><i>New Vocabulary:</i> asteroid, comet, condense, crack, decay, dust, Earth's surface, erosion, evaporate, flood, fresh water, granite, humidity, lava, lignite, magma, melt, meteor, moon (satellite), obsidian, petrification, Polaris, remains, reservoir, sea, Sirius, slate, thunder, Venus, wearing away/down, weathering</p>	<p><i>New Vocabulary:</i> air pressure, basalt, canyon, cavern, compaction, crater, dam, deposition, Earth's crust, evolution, fault line, faulting, float, folding, forecast, formation, full moon, glaciation, glacier, igneous rock, individual consumption, irrigation, landslide, marble, metamorphic rock, meteorite, meteorologist, new moon, nitrogen cycle, oil well, parent material, porous rock, pumice, rainfall, relative age, rock cycle, rock layer, running water, sand dune, saturation, sea level, sediment, sedimentary rock, sedimentation, seismograph, sinkhole, species, sublimation, tidal wave, transpiration, vegetation, water pressure, water supply, well, wind speed</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 Systems 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
<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Describes the distribution of water on Earth • Gives examples of forms of precipitation* • Classifies rain, sleet, snow, etc., as precipitation* • 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)* • Recognizes that the Sun's light energy is transformed to heat energy upon hitting Earth's surface* • 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* 	<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Defines a spring as underground water which seeps onto the Earth's surface* • Analyzes processes which comprise the water cycle* • 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 physical characteristics of different rocks and minerals (e.g., color, hardness, texture, pattern, layering, particle size)* • Describes the process of sedimentary rock formation* • Defines humidity* • Understands that meteorologists use multiple measurements of weather conditions to make forecasts* • 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* • 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* • Describes curbside recycling* • Recognizes applied uses of water (use in making electricity, transportation, recreation)* 	<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Differentiates among artesian wells, springs and geysers* • Describes the composition of the Earth's bodies of water* • Orders steps of the water cycle* • Describes processes that make up the water cycle* • Analyzes processes which comprise the water cycle* • Classifies natural resources as renewable or non-renewable • Defines non-renewable natural resources* • Gives examples of renewable and non-renewable resources* • 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 • Analyzes humidity in weather systems* • Describes how weather conditions are measured* • Explains how barometric pressure is interpreted • Explains how uneven heating at the shore/ocean interface by the Sun creates winds* • Compares weathering and erosion* • Compares agents of erosion* • Describes sequences within the rock cycle that minerals could pass through* • Understands that for alternative energy resources to be most useful, they must be renewable, or based on different non-renewable resources than are currently in use • Defines (environmental) conservation

	<ul style="list-style-type: none"> Recognizes simple conservation measures used to protect the environment (e.g., recycling, water conservation)* 	
Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time
<ul style="list-style-type: none"> Explains how volcanoes cause pollution* 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 Explains that fossils provide evidence about organisms that lived long ago* 	<ul style="list-style-type: none"> 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* Describes relative dating techniques* Recognizes that the fossil record gives geological evidence that documents when many life forms appeared, diversified, and went extinct* 	<ul style="list-style-type: none"> 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* 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*
Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe
<ul style="list-style-type: none"> Recognizes that day and night are caused by the Earth's rotation on its axis* 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* 	<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* Analyzes diagrams showing how the relative intensity of sunlight differs in summer and winter* 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 	<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 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

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Blank cells indicate data are limited or unavailable for this range or document version.

<ul style="list-style-type: none"> • 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"> • 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* • 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"> • 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 • Describes the use of spectroscopes in astronomy*
<p><i>New Vocabulary:</i> asteroid, comet, condense, crack, decay, dust, Earth's surface, erosion, evaporate, flood, fresh water, granite, humidity, lava, lignite, magma, melt, meteor, moon (satellite), obsidian, petrification, Polaris, remains, reservoir, sea, Sirius, slate, thunder, Venus, wearing away/down, weathering</p>	<p><i>New Vocabulary:</i> air pressure, basalt, canyon, cavern, compaction, crater, dam, deposition, Earth's crust, evolution, fault line, faulting, float, folding, forecast, formation, full moon, glaciation, glacier, igneous rock, individual consumption, irrigation, landslide, marble, metamorphic rock, meteorite, meteorologist, new moon, nitrogen cycle, oil well, parent material, porous rock, pumice, rainfall, relative age, rock cycle, rock layer, running water, sand dune, saturation, sea level, sediment, sedimentary rock, sedimentation, seismograph, sinkhole, species, sublimation, tidal wave, transpiration, vegetation, water pressure, water supply, well, wind speed</p>	<p><i>New Vocabulary:</i> agent, artesian well, ash, atomic energy, cosmic rays, Earth process, electrical field, erode, fault, fault zone, frequency, geyser, ground water, Halley's Comet, igneous, mercury barometer, mercury thermometer, meteoroid, mudstone, natural resources, nonrenewable, Northern Hemisphere, nuclear reaction, ore, period of revolution, petrified wood, petroleum, plains, plant matter, preserve, recycling, reef, renewable, renewable resource, San Andreas fault, sandstone, satellite, seawater, sedimentary, shale, shore, spectroscope, tide action, undisturbed</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> Ca (calcium), Cl (chlorine), Cu (copper), K (potassium), Na (sodium), NO₃ (nitrate)</p>

Subject: General Science

Goal Strand: Earth Systems 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
<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Defines a spring as underground water which seeps onto the Earth's surface* • Analyzes processes which comprise the water cycle* • 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 physical characteristics of different rocks and minerals (e.g., color, hardness, texture, pattern, layering, particle size)* • Describes the process of sedimentary rock formation* • Defines humidity* • Understands that meteorologists use multiple measurements of weather conditions to make forecasts* • 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* • 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* • Describes curbside recycling* • Recognizes applied uses of water (use in making electricity, transportation, recreation)* 	<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Differentiates among artesian wells, springs and geysers* • Describes the composition of the Earth's bodies of water* • Orders steps of the water cycle* • Describes processes that make up the water cycle* • Analyzes processes which comprise the water cycle* • Classifies natural resources as renewable or non-renewable • Defines non-renewable natural resources* • Gives examples of renewable and non-renewable resources* • 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 • Analyzes humidity in weather systems* • Describes how weather conditions are measured* • Explains how barometric pressure is interpreted • Explains how uneven heating at the shore/ocean interface by the Sun creates winds* • Compares weathering and erosion* • Compares agents of erosion* • Describes sequences within the rock cycle that minerals could pass through* • Understands that for alternative energy resources to be most useful, they must be renewable, or based on different non-renewable resources than are currently in use • Defines (environmental) conservation 	<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • 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)* • Identifies rocks and minerals based on physical properties* • Describes the process of metamorphic rock formation* • 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* • Interprets data related to formation of Earth materials* • Describes the formation of extrusive and intrusive rocks* • Describes how sedimentation occurs* • Describes sequences within the rock cycle that minerals could pass through* • Explains how algal blooms are produced* • Explains that the most important reason to conserve fossil fuels is to allow time for the development of alternative energy sources*

<ul style="list-style-type: none"> Recognizes simple conservation measures used to protect the environment (e.g., recycling, water conservation)* 		
Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time
<ul style="list-style-type: none"> 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* Describes relative dating techniques* Recognizes that the fossil record gives geological evidence that documents when many life forms appeared, diversified, and went extinct* 	<ul style="list-style-type: none"> 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* 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"> 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 structure of the geological time scale*
Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe
<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* Analyzes diagrams showing how the relative intensity of sunlight differs in summer and winter* 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 	<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 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 	<ul style="list-style-type: none"> Describes how the Earth's tilt affects weather patterns* 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* Recognizes that the information present in the light emitted by stars has allowed us to determine the composition of stars* Analyzes the formation of the solar system*

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<ul style="list-style-type: none"> 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* • 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"> • 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 • Describes the use of spectrosopes in astronomy* 	
<p><i>New Vocabulary:</i> air pressure, basalt, canyon, cavern, compaction, crater, dam, deposition, Earth's crust, evolution, fault line, faulting, float, folding, forecast, formation, full moon, glaciation, glacier, igneous rock, individual consumption, irrigation, landslide, marble, metamorphic rock, meteorite, meteorologist, new moon, nitrogen cycle, oil well, parent material, porous rock, pumice, rainfall, relative age, rock cycle, rock layer, running water, sand dune, saturation, sea level, sediment, sedimentary rock, sedimentation, seismograph, sinkhole, species, sublimation, tidal wave, transpiration, vegetation, water pressure, water supply, well, wind speed</p>	<p><i>New Vocabulary:</i> agent, artesian well, ash, atomic energy, cosmic rays, Earth process, electrical field, erode, fault, fault zone, frequency, geyser, ground water, Halley's Comet, igneous, mercury barometer, mercury thermometer, meteoroid, mudstone, natural resources, nonrenewable, Northern Hemisphere, nuclear reaction, ore, period of revolution, petrified wood, petroleum, plains, plant matter, preserve, recycling, reef, renewable, renewable resource, San Andreas fault, sandstone, satellite, seawater, sedimentary, shale, shore, spectroscopy, tide action, undisturbed</p>	<p><i>New Vocabulary:</i> algal bloom, alternative energy source, conserve, convergent plate boundary, DDT, delta, divergent plate boundary, embed, erupt, extrusive, flow, lowland, oceanic crust, rock face, seashell, subduction boundary, surface wind</p>
<p><i>New Signs and Symbols:</i> none</p>	<p><i>New Signs and Symbols:</i> Ca (calcium), Cl (chlorine), Cu (copper), K (potassium), Na (sodium), NO₃ (nitrate)</p>	<p><i>New Signs and Symbols:</i> none</p>

Subject: General Science

Goal Strand: Earth Systems 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
<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Differentiates among artesian wells, springs and geysers* • Describes the composition of the Earth's bodies of water* • Orders steps of the water cycle* • Describes processes that make up the water cycle* • Analyzes processes which comprise the water cycle* • Classifies natural resources as renewable or non-renewable • Defines non-renewable natural resources* • Gives examples of renewable and non-renewable resources* • 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 • Analyzes humidity in weather systems* • Describes how weather conditions are measured* • Explains how barometric pressure is interpreted • Explains how uneven heating at the shore/ocean interface by the Sun creates winds* • Compares weathering and erosion* • Compares agents of erosion* • Describes sequences within the rock cycle that minerals could pass through* • Understands that for alternative energy resources to be most useful, they must be renewable, or based on different non-renewable resources than are currently in use • Defines (environmental) conservation 	<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • 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)* • Identifies rocks and minerals based on physical properties* • Describes the process of metamorphic rock formation* • 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* • Interprets data related to formation of Earth materials* • Describes the formation of extrusive and intrusive rocks* • Describes how sedimentation occurs* • Describes sequences within the rock cycle that minerals could pass through* • Explains how algal blooms are produced* • Explains that the most important reason to conserve fossil fuels is to allow time for the development of alternative energy sources* 	<p>Earth Materials, Weather, Climate, Water</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* • Predicts the movement of air that will result from uneven heating of air at the ocean shore interface* • Recognizes that oxygen is an agent of chemical weathering* • Recognizes agents of chemical weathering*

Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time
<ul style="list-style-type: none"> • 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* • 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"> • 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 structure of the geological time scale* 	<ul style="list-style-type: none"> • 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*
Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe
<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 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 	<ul style="list-style-type: none"> • Describes how the Earth's tilt affects weather patterns* • 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* • Recognizes that the information present in the light emitted by stars has allowed us to determine the composition of stars* • 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*

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<p>speed*</p> <ul style="list-style-type: none"> Analyzes the effect of gravity on tides Describes the use of spectroscopes in astronomy* 		
<p><i>New Vocabulary:</i> agent, artesian well, ash, atomic energy, cosmic rays, Earth process, electrical field, erode, fault, fault zone, frequency, geyser, ground water, Halley's Comet, igneous, mercury barometer, mercury thermometer, meteoroid, mudstone, natural resources, nonrenewable, Northern Hemisphere, nuclear reaction, ore, period of revolution, petrified wood, petroleum, plains, plant matter, preserve, recycling, reef, renewable, renewable resource, San Andreas fault, sandstone, satellite, seawater, sedimentary, shale, shore, spectroscope, tide action, undisturbed</p>	<p><i>New Vocabulary:</i> algal bloom, alternative energy source, conserve, convergent plate boundary, DDT, delta, divergent plate boundary, embed, erupt, extrusive, flow, lowland, oceanic crust, rock face, seashell, subduction boundary, surface wind</p>	<p><i>New Vocabulary:</i> conglomerate, ebb tide, flood tide, high tide, low tide, Richter scale, siltstone</p>
<p><i>New Signs and Symbols:</i> Ca (calcium), Cl (chlorine), Cu (copper), K (potassium), 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 Systems 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
<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • 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)* • Identifies rocks and minerals based on physical properties* • Describes the process of metamorphic rock formation* • 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* • Interprets data related to formation of Earth materials* • Describes the formation of extrusive and intrusive rocks* • Describes how sedimentation occurs* • Describes sequences within the rock cycle that minerals could pass through* • Explains how algal blooms are produced* • Explains that the most important reason to conserve fossil fuels is to allow time for the development of alternative energy sources* 	<p>Earth Materials, Weather, Climate, Water</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* • Predicts the movement of air that will result from uneven heating of air at the ocean shore interface* • Recognizes that oxygen is an agent of chemical weathering* • Recognizes agents of chemical weathering* 	<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Compares wind speed of storms* • Predicts where sedimentation will occur in a meandering stream*
<p>Earth's Surface; Plate Tectonics; Geologic Time</p> <ul style="list-style-type: none"> • 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 	<p>Earth's Surface; Plate Tectonics; Geologic Time</p> <ul style="list-style-type: none"> • 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* 	<p>Earth's Surface; Plate Tectonics; Geologic Time</p> <ul style="list-style-type: none"> • Predicts what will result from the collision of two oceanic plates*

<ul style="list-style-type: none"> 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 structure of the geological time scale* 	<ul style="list-style-type: none"> Predicts what will result from the collision of two oceanic plates* 	
Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe
<ul style="list-style-type: none"> Describes how the Earth's tilt affects weather patterns* 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* Recognizes that the information present in the light emitted by stars has allowed us to determine the composition of stars* 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* 	<ul style="list-style-type: none"> Describes uses of satellites in astronomy and in other fields*
<i>New Vocabulary:</i> algal bloom, alternative energy source, conserve, convergent plate boundary, DDT, delta, divergent plate boundary, embed, erupt, extrusive, flow, lowland, oceanic crust, rock face, seashell, subduction boundary, surface wind	<i>New Vocabulary:</i> conglomerate, ebb tide, flood tide, high tide, low tide, Richter scale, siltstone	<i>New Vocabulary:</i> none
<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 Systems 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>Earth Materials, Weather, Climate, Water</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* • Predicts the movement of air that will result from uneven heating of air at the ocean shore interface* • Recognizes that oxygen is an agent of chemical weathering* • Recognizes agents of chemical weathering* 	<p>Earth Materials, Weather, Climate, Water</p> <ul style="list-style-type: none"> • Compares wind speed of storms* • Predicts where sedimentation will occur in a meandering stream* 	<p>Earth Materials, Weather, Climate, Water</p>
<p>Earth's Surface; Plate Tectonics; Geologic Time</p> <ul style="list-style-type: none"> • 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* 	<p>Earth's Surface; Plate Tectonics; Geologic Time</p> <ul style="list-style-type: none"> • Predicts what will result from the collision of two oceanic plates* 	<p>Earth's Surface; Plate Tectonics; Geologic Time</p> <ul style="list-style-type: none"> • Describes the movement of P, S, and L waves through the Earth*
<p>Earth, Moon, Sun, Solar System, and Universe</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 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 	<p>Earth, Moon, Sun, Solar System, and Universe</p> <ul style="list-style-type: none"> • Describes uses of satellites in astronomy and in other fields* 	<p>Earth, Moon, Sun, Solar System, and Universe</p>

larger planet will require more force than when leaving a smaller planet, due to differences in gravity between the two planets*		
<i>New Vocabulary:</i> conglomerate, ebb tide, flood tide, high tide, low tide, Richter scale, siltstone	<i>New Vocabulary:</i> none	<i>New Vocabulary:</i> none
<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 Systems Science
RIT Score Range: Above 250

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop Above 250
Earth Materials, Weather, Climate, Water	Earth Materials, Weather, Climate, Water
<ul style="list-style-type: none"> • Compares wind speed of storms* • Predicts where sedimentation will occur in a meandering stream* 	
Earth's Surface; Plate Tectonics; Geologic Time	Earth's Surface; Plate Tectonics; Geologic Time
<ul style="list-style-type: none"> • Predicts what will result from the collision of two oceanic plates* 	<ul style="list-style-type: none"> • Describes the movement of P, S, and L waves through the Earth*
Earth, Moon, Sun, Solar System, and Universe	Earth, Moon, Sun, Solar System, and Universe
<ul style="list-style-type: none"> • Describes uses of satellites in astronomy and in other fields* 	
<i>New Vocabulary: none</i>	<i>New Vocabulary: none</i>
<i>New Signs and Symbols: none</i>	<i>New Signs and Symbols: none</i>