

Summary of Alignment to the Idaho State Science Standards

Amplify Science

This correlation provides a single example of where each Performance Expectation is addressed in Amplify Science. It is not an exhaustive list.

Kindergarten

K-PS-1: Motion and Stability: Forces and Interactions	
Standard	Correlations to Core Science Units
K-PS-1.1 With guidance and support, plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.	<i>Pushes and Pulls</i> • Lesson 1.3 • Lesson 2.2 • Lesson 3.2 • Lesson 6.3
K-PS-2.1 With guidance and support, analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.	<i>Pushes and Pulls</i> • Lesson 3.4 • Lesson 5.1 • Lesson 6.3
K-PS-2: Energy	
Standard	Correlations to Core Science Units
K-PS-2.1 Make observations to determine the effect of sunlight on Earth's surface.	<i>Sunlight and Weather</i> • Lesson 2.2 • Lesson 3.1 • Lesson 4.1
K-PS-2.2 Design and build a structure that will reduce the warming effect of sunlight on an area.	<i>Sunlight and Weather</i> • Lesson 2.2 • Lesson 2.4 • Lesson 4.4

K-LS-1: From Molecules to Organisms: Structures and Processes

Standard	Correlations to Core Science Units
K-LS-1.1 Use observations to describe patterns of how plants and animals are alike and different in terms of how they live and grow.	<i>Needs of Plants and Animals</i> • Lesson 1.4 • Lesson 3.2 • Lesson 4.4

K-ESS-1: Earth Systems

Standard	Correlations to Core Science Units
K-ESS-1.1 Use and share observations of local weather conditions to describe variations in patterns throughout the year.	<i>Sunlight and Weather</i> • Lesson 1.3 • Lesson 1.4 • Lesson 5.1
K-ESS-1.2 With guidance and support, use evidence to construct an explanation of how plants and animals interact with their environment to meet their needs.	<i>Needs of Plants and Animals</i> • Lesson 3.4 • Lesson 4.3 • Lesson 4.4

K-ESS-2: Earth and Human Activity

Standard	Correlations to Core Science Units
K-ESS-2.1 Use a model to represent the relationship between the needs of different plants and animals and the places they live.	<i>Needs of Plants and Animals</i> • Lesson 1.5 • Lesson 2.4 • Lesson 4.4

K-ESS-2.2 Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, local weather.	<i>Sunlight and Weather</i> • Lesson 5.1 • Lesson 5.3 <i>Pushes and Pulls</i> • Lesson 2.1 • Lesson 2.3
K-ESS-2.3 Communicate ideas that would enable humans to interact in a beneficial way with the land, water, air, and/or other living things in the local environment.	<i>Needs of Plants and Animals</i> • Lesson 4.2 • Lesson 4.3 • Lesson 4.4

Grade 1

1-PS-1: Waves and their Applications in Technologies for Information Transfer	
Standard	Correlations to Core Science Units
1-PS-1.1 With guidance and support, plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.	Light and Sound • Lesson 4.1 • Lesson 4.2 • Lesson 4.3
1-PS-1.2 With guidance and support, make observations to construct an evidence-based explanation that objects in darkness can only be seen when illumination.	Light and Sound • Lesson 1.3 • Lesson 1.5 • Lesson 4.1
1-PS-1.3 With guidance and support, plan and conduct investigations to determine the effect of placing materials in the path of a beam of light.	Light and Sound • Lesson 2.3 • Lesson 3.1 • Lesson 3.2
1-PS-1.4 Design and build a device that uses light or sound to communicate over a distance.	Light and Sound • Lesson 2.4 • Lesson 3.4 • Lesson 4.5
1-LS-1: From Molecules to Organisms: Structure and Processes	
Standard	Correlations to Core Science Units
1-LS-1.1 Design and build a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.	Animal and Plant Defenses • Lesson 1.3 • Lesson 1.5 • Lesson 2.8

1-LS-1.2 Obtain information to identify patterns of behavior in parents and offspring that help offspring survive.	Animal and Plant Defenses • Lesson 3.2 • Lesson 3.3 • Lesson 3.4
1-LS-1.3 Use classification supported by evidence to differentiate between living and non-living things.	Animal and Plant Defenses • ID Companion Mini-Lesson
1-LS-2: Heredity: Inheritance and Variation of Traits	
Standard	Correlations to Core Science Units
1-LS-2.1 Make observations to construct an evidence-based explanation that offspring are similar to, but not identical to, their parents.	Animal and Plant Defenses • Lesson 3.1 • Lesson 3.2 • Lesson 3.3
1-ESS-1: Earth's Place in the Universe	
Standard	Correlations to Core Science Units
1-ESS-1.1 Use observations of the Sun, Moon, and stars to describe patterns that can be predicted.	Spinning Earth • Lesson 3.3 • Lesson 4.2 • Lesson 5.3
1-ESS-1.2 Make observations at different times of year to relate the amount of daylight to the time of year.	Spinning Earth • Lesson 4.2 • Lesson 5.1 • Lesson 5.2

Grade 2

2-PS-1: Matter and Its Interactions	
Standard	Correlations to Core Science Units
2-PS-1.1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	Properties of Materials • Lesson 1.2 • Lesson 2.1 • Lesson 2.2
2-PS-1.2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.	Properties of Materials • Lesson 1.2 • Lesson 1.6 • Lesson 3.3
2-PS-1.3 Make observations to construct an evidence-based argument that objects, when disassembled, may be used to create new objects using the same set of components.	Properties of Materials • Lesson 1.2 • Lesson 1.3 • Lesson 2.1
2-PS-1.4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.	Properties of Materials • Lesson 2.1 • Lesson 2.2 • Lesson 2.4
2-LS-1: Ecosystems: Interactions, Energy, and Dynamics	
Standard	Correlations to Core Science Units
2-LS-2.1 Plan and conduct an investigation to determine the impact of light and water on the growth of plants.	Plant and Animal Relationships • Lesson 1.6 • Lesson 1.7 • Lesson 2.2

2-LS-2.2 Develop a model that demonstrates how plants depend on animals for pollination or the dispersal of seeds.

Plant and Animal Relationships

- [Lesson 3.2](#)
- [Lesson 3.3](#)
- [Lesson 3.5](#)

Properties of Materials

- [Lesson 1.2](#)
- [Lesson 2.1](#)
- [Lesson 4.1](#)

2-LS-2: Biological Evolution: Unity and Diversity

Standard	Correlations to Core Science Units
2-LS-2.1 Make observations of plants and animals to compare the diversity of life in different habitats.	<i>Plant and Animal Relationships</i> • Lesson 1.3 • Lesson 1.4 • Lesson 3.1

2-ESS-1: Earth's Place in the Universe

Standard	Correlations to Core Science Units
2-ESS-1.1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly.	<i>Changing Landforms</i> • Lesson 3.4 • Lesson 3.5 • Lesson 4.1

2-ESS-2: Earth's Systems

Standard	Correlations to Core Science Units
2-ESS-2.1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.	<i>Changing Landforms</i> • Lesson 1.3 • Lesson 2.3 • Lesson 3.4
2-ESS-2.2 Develop a model to represent the shapes and kinds of land and bodies of water in an area.	<i>Changing Landforms</i> • Lesson 1.4 • Lesson 1.5 • Lesson 3.1

2-ESS-2.3 Obtain information to identify where water is found on Earth and that it can be solid or liquid.

Changing Landforms

- [Lesson 1.5](#)
- [Lesson 2.3](#)
- [Lesson 3.3](#)

Grade 3

3-PS-2: Motion and Stability: Forces and Interactions	
Standard	Correlations to Core Science Units
3-PS-2.1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.	Balancing Forces • Lesson 1.3 • Lesson 4.2 • Lesson 5.1
3-PS-2.2 Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.	Balancing Forces • Lesson 5.1 • Lesson 5.3 Weather and Climate • Lesson 3.5 Inheritance and Traits • Lesson 1.3
3-PS-2.3 Ask questions to determine cause and effect relationships of static electricity or magnetic interactions between two objects not in contact with each other.	Balancing Forces • Lesson 2.3 • Lesson 2.4 • Lesson 5.3
3-PS-2.4 Define a simple design problem that can be solved by applying scientific ideas about magnets.	Balancing Forces • Lesson 2.3 • Lesson 2.4 • Lesson 5.3

3-LS-1: From Molecules to Organisms: Structures and Processes

Standard	Correlations to Core Science Units
3-LS-1.1 Develop models to demonstrate that living things, although they have unique and diverse life cycles, all have birth, growth, reproduction, and death in common.	<i>Inheritance and Traits</i> • Lesson 1.1 • Lesson 2.1 • Lesson 2.2

3-LS-2: Ecosystems: Interactions, Energy, and Dynamics

Standard	Correlations to Core Science Units
3-LS-2.1 Construct an argument that some animals form groups that help members survive.	<i>Inheritance and Traits</i> • Lesson 1.1 • Lesson 3.1 • Lesson 3.2

3-LS-3: Heredity: Inheritance and Variation of Traits

Standard	Correlations to Core Science Units
3-LS-3.1 Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.	<i>Inheritance and Traits</i> • Lesson 2.3 • Lesson 2.4 • Lesson 2.6
3-LS-3.2 Use evidence to support the explanation that traits can be influenced by the environment.	<i>Inheritance and Traits</i> • Lesson 2.6 • Lesson 3.4 • Lesson 3.6

3-LS-3.3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	<i>Environments and Survival</i> • Lesson 1.2 • Lesson 1.4 • Lesson 2.1
3-ESS-1: Earth's Systems	
Standard	Correlations to Core Science Units
3-ESS-1.1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	<i>Weather and Climate</i> • Lesson 3.2 • Lesson 3.3 • Lesson 4.2
3-ESS-1.2 Obtain and combine information to describe climates in different regions of the world.	<i>Weather and Climate</i> • Lesson 3.2 • Lesson 3.3 • Lesson 3.5
3-ESS-2: Earth and Human Activity	
Standard	Correlations to Core Science Units
3-ESS-2.1 Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.	<i>Weather and Climate</i> • Lesson 4.2 • Lesson 4.3 • Lesson 4.4

Grade 4

4-PS-1: Energy	
Standard	Correlations to Core Science Units
4-PS-1.1 Use evidence to construct an explanation relating the speed of an object to the energy of that object.	Energy Conversions • Lesson 3.4 • Lesson 4.2 Waves, Energy, and Information • Lesson 2.4
4-PS-1.2 Make observations to provide evidence that energy can be transferred by heat, sound, light, and electric currents.	Energy Conversions • Lesson 1.5 • Lesson 4.2 Waves, Energy, and Information • Lesson 1.4 • Lesson 2.4
4-PS-1.3 Ask questions and predict outcomes about the changes in energy that occur when objects collide.	Energy Conversions • Lesson 1.5 • Lesson 4.2 Waves, Energy, and Information • Lesson 2.4 • Lesson 2.5
4-PS-1.4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.	Energy Conversions • Lesson 2.1 • Lesson 3.1 • Lesson 4.2

4-PS-2: Waves and their Applications in Technologies for Information Transfer	
Standard	Correlations to Core Science Units
4-PS-2.1 Develop a model of a simple mechanical wave to describe patterns of amplitude and wavelength and that waves can cause objects to move.	<i>Waves, Energy, and Information</i> • Lesson 1.4 • Lesson 3.1 • Lesson 3.4
4-PS-2.2 Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.	<i>Vision and Light</i> • Lesson 2.1 • Lesson 2.3 • Lesson 2.5
4-PS-2.3 Generate and compare multiple solutions that use patterns to transfer information.	<i>Waves, Energy, and Information</i> • Lesson 3.4 • Lesson 3.5 • Lesson 4.1
4-LS-1: From Molecules to Organisms: Structures and Processes	
Standard	Correlations to Core Science Units
4-LS-1.1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	<i>Vision and Light</i> • Lesson 1.4 • Lesson 3.3 • Lesson 3.5
4-LS-1.2 Use a model to describe how animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	<i>Vision and Light</i> • Lesson 2.1 • Lesson 3.3 • Lesson 3.4

4-ESS-1: Earth's Place in the Universe

Standard	Correlations to Core Science Units
4-ESS-1.1 Identify evidence from patterns in rock formations and fossils in rock layers for changes in a landscape over time to support an explanation for changes in a landscape over time.	Earth's Features • Lesson 2.6 • Lesson 3.2 • Lesson 3.4

4-ESS-2: Earth's Systems

Standard	Correlations to Core Science Units
4-ESS-2.1 Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.	Earth's Features • Lesson 2.2 • Lesson 4.1 • Lesson 4.4
4-ESS-2.2 Analyze and interpret data from maps to describe patterns of Earth's features.	Earth's Features • Lesson 1.6 • Lesson 4.2 • Lesson 4.5

4-ESS-3: Earth and Human Activity

Standard	Correlations to Core Science Units
4-ESS-3.1 Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.	Energy Conversions • Lesson 3.1 • Lesson 3.3 • Lesson 4.5

4-ESS-3.2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

Waves, Energy, and Information

- [Lesson 1.3](#)

Earth's Features

- [Lesson 4.3](#)

Energy Conversions

- [Lesson 3.3](#)
- [Lesson 3.4](#)

Grade 5

5-PS-1: Matter and its Interactions	
Standard	Correlations to Core Science Units
5-PS-1.1 Develop a model to describe that matter is made of particles too small to be seen.	Modeling Matter Lesson 1.3 Lesson 1.6 Lesson 2.2
5-PS-1.2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.	The Earth System Lesson 2.5 Lesson 5.3 Modeling Matter Lesson 1.3 Lesson 2.4
5-PS-1.3 Make observations and measurements to identify materials based on their properties.	The Earth System Lesson 5.1 Lesson 5.2 Modeling Matter Lesson 1.2 - Lesson 1.8
5-PS-1.4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances.	The Earth System Lesson 5.2 Lesson 5.4 Modeling Matter Lesson 3.4

5-PS-2: Motion and Stability: Forces and Interaction	
Standard	Correlations to Core Science Units
5-PS-2.1 Support an argument that Earth’s gravitational force exerted on objects is directed downward.	<i>Patterns of Earth and Sky</i> • Lesson 2.4 • Lesson 2.5 • Lesson 3.6
5-PS-3: Energy	
Standard	Correlations to Core Science Units
5-PS-3.1 Use models to describe that energy in animals’ food (use for body repair, growth, motion, and to maintain body warmth) was once energy from the Sun.	<i>Ecosystem Restoration</i> • Lesson 2.2 • Lesson 2.3 • Lesson 2.5
5-LS-1: From Molecules to Organisms: Structures and Processes	
Standard	Correlations to Core Science Units
5-LS-1.1 Support an argument that plants get what they need for growth chiefly from air, water, and energy from the Sun.	<i>Ecosystem Restoration</i> • Lesson 2.2 • Lesson 2.3 • Lesson 2.7

5-LS-2: Ecosystems: Interactions, Energy, and Dynamics	
Standard	Correlations to Core Science Units
5-LS-2.1 Analyze and interpret data from fossils to provide evidence of the types of organisms and the environments that existed long ago and compare those to living organisms and their environments.	<i>Environments and Survival</i> • Lesson 2.2 • Lesson 2.3 • Lesson 2.5
5-LS-2.2 Construct an argument with evidence for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.	<i>Environments and Survival</i> • Lesson 2.1 • Lesson 2.4 • Lesson 3.2
5-LS-2.3 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals living there may change.	<i>Environments and Survival</i> • Lesson 1.2 • Lesson 1.4 • Lesson 2.1
5-LS-2.4 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.	<i>Ecosystem Restoration</i> • Lesson 1.7 • Lesson 3.2 • Lesson 3.4

5-ESS-1: Earth's Place in the Universe	
Standard	Correlations to Core Science Units
5-ESS-1.1 Support an argument that differences in the apparent brightness of the Sun compared to other stars is due to their relative distances from the Earth.	<i>Patterns of Earth and Sky</i> • Lesson 1.3 • Lesson 1.6 • Lesson 1.7
5-ESS-1.2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.	<i>Patterns of Earth and Sky</i> • Lesson 2.2 • Lesson 2.3 • Lesson 3.3
5-ESS-2: Earth's Systems	
Standard	Correlations to Core Science Units
5-ESS-2.1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.	<i>The Earth System</i> • Lesson 1.3 • Lesson 3.3 • Lesson 4.2
5-ESS-2.2 Describe and graph the relative amounts of fresh and salt water in various reservoirs, to interpret and analyze the distribution of water on Earth.	<i>The Earth System</i> • Lesson 1.1 • Lesson 3.2 <i>Ecosystem Restoration</i> • Lesson 2.1

5-ESS-3: Earth and Human Activity	
Standard	Correlations to Core Science Units
5-ESS-3.1 Obtain and combine information about ways communities protect Earth’s resources and environment using scientific ideas.	<i>The Earth System</i> • Lesson 1.2 • Lesson 1.3 <i>Ecosystem Restoration</i> • Lesson 1.8 • Lesson 2.6

Grades 6-8

MS-PS-1: Matter and its Interactions	
Standard	Correlations to Core Science Units
MS-PS-1.1 Develop models to describe the atomic composition of simple molecules and extended structures.	Chemical Reactions • Lesson 1.6 • Lesson 4.4 Phase Change • Lesson 1.5 • Lesson 1.6
MS-PS-1.2 Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.	Chemical Reactions • Lesson 2.1 • Lesson 2.2 • Lesson 4.3
MS-PS-1.3 Construct a scientific explanation, based on evidence, to describe that synthetic materials come from natural resources.	Chemical Reactions • Lesson 2.1 • Lesson 2.2 • Lesson 4.3
MS-PS-1.4 Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.	Phase Change • Lesson 1.6 • Lesson 2.1 Thermal Energy • Lesson 1.4 • Lesson 3.3

MS-PS-1.5 Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.	Chemical Reactions • Lesson 3.4 • Lesson 4.3 • Lesson 4.4
MS-PS-1.6 Undertake a design project to construct, test, and/or modify a device that either releases or absorbs thermal energy by chemical processes.	Phase Change Engineering Internship • Day 7 Force and Motion Engineering Internship • Day 7 Chemical Reactions • Lesson 2.5
MS-PS-2: Motion and Stability: Forces and Interaction	
Standard	Correlations to Core Science Units
MS-PS-2.1 Apply Newton’s Third Law to design a solution to a problem involving the motion of two colliding objects.	Force and Motion • Lesson 4.3 • Lesson 4.4 Force and Motion Engineering Internship • Day 7 Magnetic Fields • Lesson 2.4
MS-PS-2.2 Plan and conduct an investigation to provide evidence that the change in an object’s motion depends on the sum of the forces on the object and the mass of the object.	Force and Motion • Lesson 1.6 • Lesson 2.1 • Lesson 2.3

MS-PS-2.3 Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.	Magnetic Fields Lesson 4.3 Lesson 4.4 Force and Motion Lesson 2.1
MS-PS-2.4 Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.	Magnetic Fields Lesson 1.3 Lesson 3.2 Lesson 4.3
MS-PS-2.5 Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.	Magnetic Fields Lesson 1.5 Lesson 2.1 Lesson 3.2
MS-PS-3: Energy	
Standard	Correlations to Core Science Units
MS-PS-3.1 Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.	Force and Motion Lesson 2.1 Lesson 3.3 Lesson 4.3
MS-PS-3.2 Develop a model to describe the relationship between the relative positions of objects interacting at a distance and the relative potential energy in the system.	Magnetic Fields Lesson 2.4 Lesson 3.3 Lesson 4.3

MS-PS-3.3 Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.	Phase Change Engineering Internship • Day 4 • Day 7 Thermal Energy • Lesson 3.3 • Lesson 4.3
MS-PS-3.4 Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.	Thermal Energy • Lesson 3.3 • Lesson 3.4 • Lesson 4.3
MS-PS-3.5 Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.	Thermal Energy • Lesson 2.4 Harnessing Human Energy • Lesson 2.1 Force and Motion • Lesson 3.3 Magnetic Fields • Lesson 2.4

MS-PS-4: Waves and Their Applications in Technologies for Information Transfer	
Standard	Correlations to Core Science Units
MS-PS-4.1 Use diagrams of a simple wave to explain that (1) a wave has a repeating pattern with a specific amplitude, frequency, and wavelength, and (2) the amplitude of a wave is related to the energy in the wave.	Light Waves • Lesson 2.4 Thermal Energy • Lesson 2.4 • Lesson 3.4 Chemical Reactions • Lesson 1.3
MS-PS-4.2 Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.	Light Waves • Lesson 2.3 • Lesson 2.4 • Lesson 4.3
MS-PS-4.3 Present qualitative scientific and technical information to support the claim that digitized signals (0s and 1s) can be used to encode and transmit information.	Light Waves • Lesson 3.1 Chemical Reactions • Lesson 3.1 • Lesson 3.2

MS-LS-1: From Molecules to Organisms: Structures and Processes	
Standard	Correlations to Core Science Units
MS-LS-1.1 Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.	Microbiome Lesson 2.4 Lesson 2.6 Lesson 2.8
MS-LS-1.2 Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	Microbiome Lesson 1.2 Metabolism Lesson 3.3 Traits and Reproduction Lesson 2.2
MS-LS-1.3 Make a claim supported by evidence for how a living organisms is a system of interacting subsystems composed of groups of cells.	Metabolism Lesson 2.1 Lesson 2.6 Lesson 4.2
MS-LS-1.4 Construct a scientific argument based on evidence to defend a claim of life for a specific object or organism.	Traits and Reproduction Lesson 3.1 Lesson 3.2 Natural Selection Lesson 4.3

MS-LS-1.5 Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.	Traits and Reproduction • Lesson 4.1 Natural Selection • Lesson 3.2 • Lesson 3.3 • Lesson 4.3
MS-LS-1.6 Develop a conceptual model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as matter moves through an organism.	Matter and Energy in Ecosystems • Lesson 1.5 • Lesson 1.6 • Lesson 3.4
MS-LS-2: Ecosystems: Interactions, Energy, and Dynamics	
Standard	Correlations to Core Science Units
MS-LS-2.1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.	Populations and Resources • Lesson 2.3 • Lesson 3.3 • Lesson 4.3
MS-LS-2.2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.	Populations and Resources • Lesson 2.4 • Lesson 2.7 • Lesson 3.3
MS-LS-2.3 Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.	Matter and Energy in Ecosystems • Lesson 3.4 Populations and Resources • Lesson 1.2 • Lesson 2.2 • Lesson 2.3

MS-LS-2.4 Develop a model to describe the flow of energy through the trophic levels of an ecosystem.	<i>Populations and Resources</i> • Lesson 3.4 • Lesson 4.1 • Lesson 4.3
MS-LS-2.5 Construct an argument supported by evidence that changes to physical or biological components of an ecosystem affect populations.	<i>Populations and Resources</i> • Lesson 1.3 • Lesson 4.1 • Lesson 4.3 <i>Natural Selection Engineering Internship</i> • Day 8
MS-LS-2.6 Design and evaluate solutions for maintaining biodiversity and ecosystem services.	<i>Populations and Resources</i> • Lesson 1.3 • Lesson 4.1 • Lesson 4.3 <i>Natural Selection Engineering Internship</i> • Day 8

MS-LS-3: Heredity: Inheritance and Variation of Traits	
Standard	Correlations to Core Science Units
MS-LS-3.1 Develop and use a model to describe why mutations may result in harmful, beneficial, or neutral effects to the structure and function of the organism.	<i>Traits and Reproduction</i> • Lesson 1.3 • Lesson 2.4 • Lesson 4.3
MS-LS-3.2 Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.	<i>Traits and Reproduction</i> • Lesson 3.3 • Lesson 4.3 • Lesson 4.4
MS-LS-4: Biological Evolution: Unity and Diversity	
Standard	Correlations to Core Science Units
MS-LS-4.1 Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.	<i>Evolutionary History</i> • Lesson 2.4 • Lesson 2.5 • Lesson 3.3
MS-LS-4.2 Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer relationships.	<i>Evolutionary History</i> • Lesson 3.2 • Lesson 4.3 <i>Natural Selection</i> • Lesson 1.4 • Lesson 3.3

MS-LS-4.3 Analyze visual evidence to compare patterns of similarities in the anatomical structures across multiple species of similar classification levels to identify relationships.	Evolutionary History • Lesson 3.1 • Lesson 4.3 Natural Selection • Lesson 1.4 • Lesson 3.3
MS-LS-4.4 Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.	Natural Selection • Lesson 2.4 • Lesson 4.3 • Lesson 4.4
MS-LS-4.5 Obtain, evaluate, and communicate information about how technologies allow humans to influence the inheritance of desired traits in organisms.	Natural Selection • Lesson 3.2 • Lesson 4.3 Traits and Reproduction • Lesson 2.1 • Lesson 3.5
MS-LS-4.5 Use mathematical models to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.	Natural Selection • Lesson 1.4 • Lesson 2.4 • Lesson 4.3
MS-ESS-1: Earth's Place in the Universe	
Standard	Correlations to Core Science Units
MS-ESS-1.1 Develop and use a model of the Earth-Sun-Moon system to describe the cyclic patterns of lunar phases, eclipses of the Sun and Moon, and seasons.	Earth, Moon, and Sun • Lesson 1.3 • Lesson 2.4 • Lesson 3.1

MS-ESS-1.2 Develop and use a model to describe the role of gravity in the orbital motions within galaxies and the solar system.	<i>Earth, Moon, and Sun</i> • Lesson 1.3 • Lesson 2.2 • Lesson 4.4
MS-ESS-1.3 Analyze and interpret data to determine scale properties of objects in the solar system.	<i>Geology on Mars</i> • Lesson 1.1 • Lesson 1.3 <i>Plate Motion</i> • Lesson 3.2
MS-ESS-1.4 Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to analyze Earth’s history.	<i>Plate Motion</i> • Lesson 3.1 • Lesson 3.2 • Lesson 4.2

MS-ESS-2: Earth's Systems	
Standard	Correlations to Core Science Units
MS-ESS-2.1 Develop a model to describe the cycling of Earth's materials and the internal and external flows of energy that drive the rock cycle processes.	Rock Transformations • Lesson 3.4 • Lesson 4.3 Earth's Changing Climate • Lesson 1.3 • Lesson 2.3
MS-ESS-2.2 Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.	Rock Transformations • Lesson 3.4 Plate Motion • Lesson 4.1 • Lesson 4.2
MS-ESS-2.3 Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.	Plate Motion • Lesson 2.5 • Lesson 3.3 • Lesson 4.3
MS-ESS-2.4 Develop a model to describe the cycling of water through Earth's systems driven by energy from the Sun and the force of gravity.	Weather Patterns • Lesson 1.2 • Lesson 2.1 • Lesson 2.3
MS-ESS-2.5 Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.	Weather Patterns • Lesson 3.2 • Lesson 3.3 • Lesson 4.3

MS-ESS-2.6 Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.	<i>Ocean, Atmosphere, and Climate</i> • Lesson 1.4 • Lesson 3.2 • Lesson 3.3
MS-ESS-3: Earth and Human Activity	
Standard	Correlations to Core Science Units
MS-ESS-3.1 Construct a scientific explanation based on evidence for how Earth's mineral, energy, and groundwater resources are unevenly distributed as a result of past and current geologic processes.	<i>Rock Transformations</i> • Lesson 2.3 • Lesson 3.2 • Lesson 3.4
MS-ESS-3.2 Analyze and interpret data on natural hazards to forecast future catastrophic events to mitigate their effects.	<i>Plate Motion</i> • Lesson 1.3 • Lesson 4.3 <i>Plate Motion Engineering Internship</i> • Day 9 <i>Ocean, Atmosphere, and Climate</i> • Lesson 2.3
MS-ESS-3.3 Apply scientific practices to design a method for monitoring human activity and increasing beneficial human influences on the environment.	<i>Earth's Changing Climate</i> • Lesson 1.2 • Lesson 2.1 • Lesson 3.3
MS-ESS-3.4 Construct an argument based on evidence for how changes in human population and per-capita consumption of natural resources positively and negatively affect Earth's systems.	<i>Earth's Changing Climate</i> • Lesson 3.1 • Lesson 4.3 <i>Ocean, Atmosphere, and Climate</i> • Lesson 2.4

MS-ESS-3.5 Ask questions to interpret evidence of the factors that cause climate variability throughout Earth’s history.

Earth’s Changing Climate

- [Lesson 3.3](#)
- [Lesson 4.3](#)

Ocean, Atmosphere, and Climate

- [Lesson 2.1](#)
- [Lesson 4.2](#)