

Summary of Changes - Proposed Science Standards

<b>Notable Changes 1-10-2024</b>		
<ul style="list-style-type: none"> <li>Per recommendations in Public Comment the coding system was changed back to "MS" for grades 6 - 8 and "HS" for grades 9-12.</li> <li>Minor editorial changes.</li> </ul>		
<b>Notable Changes 9-15-2023</b>		
<ul style="list-style-type: none"> <li>The standards with an asterisk or ETS have embedded alignment to Engineering Standards. Pull those standards out and note this by placing the alignment at the end of the standard so teachers will be able to reference them more easily. The grade bands of Engineering, Technology, and Application of Sciences are listed in each grade and show alignment for the whole grade band.</li> <li>To keep the coding system of the standards consistent with other South Dakota Standards, change "MS" to "6-8" and "HS" to "9-12"</li> <li>Include the specific Core Ideas at the beginning of each grade level to give teachers easy access to those.</li> <li>Bolded items indicated changes.</li> </ul>		
<b>Standard Code</b>	<b>2015 Standard</b>	<b>Proposed Standard</b>
K-PS2-2	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.* (SEP: 4; DCI: PS2.A, ETS1.A; CCC: Cause/Effect)	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. (SEP: 4; DCI: PS2.A, ETS1.A; CCC: Cause/Effect) <b>Alignment may include K-2-ETS1-1</b>
K-PS2-3	Make observations to determine the effect of sunlight on Earth’s surface. (SEP: 3; DCI: PS3.B; CCC: Cause/Effect)	<b>K-PS3-1</b>
K-PS3-2	Design and build a structure that will reduce the warming effect of sunlight on an area.* (SEP: 6; DCI: PS3.B; CCC: Cause/Effect)	Design and build a structure that will reduce the warming effect of sunlight on an area. (SEP: 6; DCI: PS3.B, ETS1.B; CCC: Cause/Effect) <b>Alignment may include K-2-ETS1-2</b>
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time. (SEP: 4; DCI: ESS2.D; CCC: Patterns)	<b>Plan and carry out</b> observations of local weather conditions to describe patterns over time. (SEP: 4; DCI: ESS2.D; CCC: Patterns)
K-ESS3-2	Engage in argument from evidence for how plants and animals (including humans) can change the environment to meet their needs. (SEP: 7; DCI: ESS2.E, ESS3.C; CCC: Systems)	<b>K-ESS2-2</b>

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K-ESS3-1	Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. (SEP: 2; DCI: ESS3.A; CCC: Systems)	Use a model to represent the <b>characteristics of</b> and the relationship between various plants and animals in the places they live. (SEP: 2; DCI: ESS3.A; CCC: Systems)
K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.* (SEP: 1, 8; DCI: ESS3.B, ETS1. A; CCC: Cause/Effect)	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. (SEP: 1, 8; DCI: ESS3.B, ETS1.A; CCC: Cause/Effect) <b>Alignment may include K-2-ETS1-1</b>
K-ESS3-3	Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.* (SEP: 8; DCI: ESS3.C; ETS1.B; CCC: Cause/Effect)	Communicate solutions that will reduce the impact of humans on the land, water, air, <b>and</b> living things in the local environment. (SEP: 8; DCI: ESS3.C, ETS1.B; CCC: Cause/Effect) <b>Alignment may include K-2-ETS1-2</b>
1-PS4-4	Design and build a device that uses light or sound to solve the problem of communicating over a distance.* (SEP: 6; DCI: PS4.C; CCC: Technology)	Design and build a device that uses light or sound to solve the problem of communicating over a distance. (SEP: 6; DCI: PS4.C, ETS1.B; CCC: <b>Cause/Effect</b> ) <b>Alignment may include K-2-ETS1-2</b>
1-LS1-1	Design 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.* (SEP: 6; DCI: LS1.A, LSI.D; CCC: Structure/Function, Technology)	<b>Construct an explanation and</b> design 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. (SEP: 6; DCI: LS1.A, LSI.D, ETS1.A; CCC: Structure/Function) <b>Alignment may include K-2-ETS1-1</b>
1-ESS1-2	Make observations at different times of the year to relate the amount of daylight to the time of year. (SEP: 3; DCI: ESS1.B; CCC: Patterns)	Make observations and compare the amount of daylight at different times of the year. (SEP: 3; DCI: ESS1.B; CCC: Patterns)
2-PS1-2	Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.* (SEP: 4; DCI: PS1.A; CCC: Cause/Effect, Technology)	Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. (SEP: 4; DCI: PS1.A, <b>ETS1.C</b> ; CCC: Cause/Effect) <b>Alignment may include K-2-ETS1-3</b>
2-PS1-4	Construct an argument using reasoning and evidence that some changes caused by heating or cooling can be reversed and some cannot. (SEP: 7; DCI: PS1.B; CCC: Cause/Effect)	Construct an <b>evidence-based</b> argument using reasoning and evidence that some changes caused by heating or cooling can be reversed and some cannot. (SEP: 7; DCI: PS1.B; CCC: Cause/Effect)

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2-LS2-2	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. (SEP: 2; DCI: LS2.A, ETS1.B; CCC: Structure/Function)	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. (SEP: 2; DCI: LS2.A, ETS1.B; CCC: Structure/Function) <b>Alignment may include K-2ETS1-2</b>
2-ESS1-1	Use information from several sources to provide evidence that Earth events can occur quickly or slowly. (SEP: 6; DCI: ESS1.C; CCC: Stability/Change)	Use information from several sources to <b>construct an explanation</b> that Earth events <b>like volcanic explosions, earthquakes, weather, erosion, etc.</b> can occur quickly or slowly. (SEP: 6; DCI: ESS1.C; CCC: Stability/Change)
2-ESS2-1	Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. (SEP: 6; DCI: ESS2.A, ETS1.C; CCC: Stability/Change, Technology)	Compare multiple solutions <b>to develop a model</b> designed to slow or prevent wind or water from changing the shape of the land. (SEP: 6; DCI: ESS2.A, ETS1.C; CCC: Stability/Change) <b>Alignment may include K-2-ETS1-3</b>
2-ESS2-2	Develop a model to represent the shapes and kinds of land and bodies of water in an area. (SEP: 2; DCI: ESS2.B ; CCC: Patterns)	<b>Obtain and evaluate information about</b> the shapes and kinds of land and bodies of water in your local areas. (SEP: 8; DCI: ESS2.B; CCC: <b>Stability/Change</b> )
2-ESS2-3	Obtain information to identify where water is found on Earth and that it can be solid or liquid. (SEP: 8; DCI: ESS2.C; CCC: Patterns)	Obtain information to identify where water is found on Earth and that it can be solid, liquid, <b>or gas.</b> (SEP: 8; DCI: ESS2.C; CCC: Patterns)
3-PS2-4	Define a simple design problem that can be solved by applying scientific ideas about magnets.* (SEP: 1; DCI: PS2.B; CCC: Technology)	Define a simple design problem that can be solved by applying scientific ideas about magnets. (SEP: 1; DCI: PS2.B, ETS1.A; CCC: <b>Cause/Effect</b> ) <b>Alignment may include 3-5-ETS1-1</b>
3-LS4-4	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.* (SEP: 7; DCI: LS2.C, LS4.D; CCC: Systems, Technology)	Make an <b>evidence-based</b> claim about the <b>validity</b> of a solution to a change in the environment that affects the types of plants and animals that live there. (SEP: 7; DCI: LS2.C, LS4.D, ETS1.A; CCC: Systems) <b>Alignment may include 3-5-ETS1-1</b>
3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. (SEP: 4; DCI: ESS2.D; CCC: Patterns)	Represent data in tables and graphical displays to describe weather conditions during a particular season. (SEP: 4; DCI: ESS2.D; CCC: Patterns)
3-ESS3-1	Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.* (SEP: 7; DCI: ESS3.B ; CCC: Cause/Effect, Technology)	Make an <b>evidence-based</b> claim about the validity of a design solution that reduces the impacts of a weather-related hazard. (SEP: 7; DCI: ESS3.B, ETS1.A; CCC: Cause/Effect) <b>Alignment may include 3-5-ETS1-1</b>

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4-PS3-4	Design, test, and refine a device that converts energy from one form to another. * (SEP: 6; DCI: PS3.B, PS3.D, ETS1.A; CCC: Energy/Matter)	Design, test, and refine a device that converts energy from one form to another. (SEP: 6; DCI: PS3.B, PS3.D, ETS1.A; CCC: Energy/Matter) <b>Alignment may include 3-5-ETS1-1</b>
4-PS4-3	Create and compare multiple solutions that use patterns to transfer information.* (SEP: 6; DCI: PS4.C, ETS1.C; CCC: Patterns, Technology)	Create and compare multiple solutions that use patterns to transfer information. (SEP: 6; DCI: PS4.C, ETS1.C; CCC: Patterns) <b>Alignment may include 3-5-ETS1-3</b>
4-ESS3-1	Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. (SEP: 8; DCI: ESS3.A; CCC: Cause/Effect, Technology)	Obtain and combine information to describe that energy and fuels are derived from natural resources and <b>how</b> their uses affect the environment. (SEP: 8; DCI: ESS3.A; CCC: Cause/Effect)
4-ESS3-2	Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. (SEP: 6; DCI: ESS3.B, ETS1.B; CCC: Cause/Effect, Technology)	Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. (SEP: 6; DCI: ESS3.B, ETS1.B; CCC: Cause/Effect) <b>Alignment may include 3-5-ETS1-2</b>
5-PS1-2	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. (SEP: 5; DCI: PS1.A, PS1.B; CCC: Scale/Prop.)	Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total <b>mass</b> of matter is conserved. (SEP: 5; DCI: PS1.A, PS1.B; CCC: Scale/Prop.)
5-PS1-4	Conduct an investigation to determine whether the mixing of two or more substances results in new substances. (SEP: 3; DCI: PS1.B; CCC: Cause/Effect)	<b>Plan and carry out</b> an investigation to determine <b>if</b> the mixing of two or more substances results in new substances. (SEP: 3; DCI: PS1.B; CCC: Cause/Effect)
5-PS2-1	Support an argument that the gravitational force exerted by Earth on objects is directed down. (SEP: 7; DCI: PS2.B; CCC: Cause/Effect)	Support an <b>evidence-based argument</b> that the gravitational force exerted by Earth on objects is directed toward the <b>center</b> of the Earth. (SEP: 7; DCI: PS2.B; CCC: Cause/Effect)
5-LS1-1	Support an argument that plants get the materials they need for growth chiefly from air and water. (SEP: 7; DCI: LS1.C; CCC: Energy/Matter)	Engage in an <b>evidence-based</b> argument that plants get the materials they need for growth chiefly from air and water. (SEP: 7; DCI: LS1.C; CCC: Energy/Matter)
5-ESS2-1	Develop a model to describe the interaction of geosphere, biosphere, hydrosphere, and/or atmosphere. (SEP: 2; DCI: ESS2.A; CCC: Systems)	Develop a model to describe the interaction of geosphere, biosphere, hydrosphere, and atmosphere. (SEP: 2; DCI: ESS2.A; CCC: Systems)

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5-ESS2-2	Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. (SEP: 5; DCI: ESS2.C; CCC: Scale/Prop.)	Describe and graph the amounts and percentages of <b>salt</b> water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. (SEP: <b>4</b> ; DCI: ESS2.C; CCC: Scale/Prop.)
MS-PS1-3	Obtain and evaluate information to describe that synthetic materials come from natural resources and impact society. (SEP: 8; DCI: PS1.A, PS1.B; CCC: Structure/Function, Technology )	Obtain and evaluate information to describe that synthetic materials come from natural resources and impact society. (SEP: 8; DCI: PS1.A, PS1.B; CCC: Structure/Function)
MS-PS1-6	Design, construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.* (SEP: 6; DCI: PS1.B, ETS1.B, ETS1.C; CCC: Energy/Matter)	Design, construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes. (SEP: 6; DCI: PS1.B, ETS1.B, ETS1.C; CCC: Energy/Matter) <b>Alignment may include 6-8-ETS1-2; 6-8-ETS1-3; 6-8-ETS1-4</b>
MS-PS2-1	Design a solution to a problem involving the motion of two colliding objects that illustrates Newton’s Third Law.* (SEP: 6; DCI: PS2.A; CCC: Systems, Technology)	Design a solution to a problem involving the motion of two colliding objects that illustrates Newton’s Third Law. (SEP: 6; DCI: PS2.A, ETS1.B; CCC: Systems) <b>Alignment may include 6-8-ETS1-1</b>
MS-PS2-5	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. (SEP: 3; DCI: PS2.B; CCC: Cause/Effect )	Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other <b>when</b> the objects are not in contact. (SEP: 3; DCI: PS2.B; CCC: Cause/Effect)
MS-PS3-1	Construct and analyze graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object. (SEP: 4; DCI: PS3.A; CCC: Scale/Prop.)	Construct and analyze graphical displays of data to describe the relationships of kinetic energy to the mass and to the speed of an object. (SEP: 4; DCI: PS3.A; CCC: Scale/Prop.)
MS-PS3-3	Design, construct, and test a device that either minimizes or maximizes thermal energy transfer.* (SEP: 6; DCI: PS3.A, PS3.B, ETS1.A, ETS1.B, ; CCC: Energy/Matter)	Design, construct, and test a device that either minimizes or maximizes thermal energy transfer. (SEP: 6; DCI: PS3.A, PS3.B, CCC: Energy/Matter) <b>Alignment may include 6-8-ETS1-1 and 6-8-ETS1-2</b>
MS-PS4-3	Obtain, evaluate and communicate information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals. (SEP: 8; DCI: PS4.C; CCC: Structure, Technology)	Obtain, evaluate, and communicate information to support the <b>evidence-based claim</b> for the reliability of digitized signals to encode and transmit information <b>compared to analog signals</b> . (SEP: 8; DCI: PS4.C; CCC: Structure and Function)

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MS-LS1-1	Plan and carry out an investigation to provide evidence that living things are made of cells; either one cell or many different types and numbers of cells. (SEP: 3; DCI: LS1.A; CCC: Scale/Prop., Technology)	Plan and carry out an investigation to provide evidence that living things are made of cells; either one cell or many different types and numbers of cells. (SEP: 3; DCI: LS1.A; CCC: Scale/Prop.)
MS-LS1-3	Construct an argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. (SEP: 7 ; DCI: LS1.A; CCC: Systems)	Construct an argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells, <b>tissues, and organs</b> . (SEP: 7; DCI: LS1.A; CCC: Systems)
MS-LS1-4	Construct an argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. (SEP: 7; DCI: LS1.B; CCC: Cause/Effect)	Construct an <b>evidence-based</b> argument to support an explanation for <b>a)</b> how characteristic animal behaviors affect the probability of successful reproduction of animals; and <b>b)</b> how specialized structures affect the probability of successful reproduction of plants. (SEP: 7; DCI: LS1.B; CCC: Cause/Effect)
MS-LS2-2	Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. (SEP: 6; DCI: LS2.A; CCC: Patterns)	Construct an explanation that predicts patterns ( <b>relationships</b> ) of interactions among organisms across multiple ecosystems. (SEP: 6; DCI: LS2.A; CCC: Patterns)
MS-LS2-4	Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. (SEP: 7; DCI: LS2.C ; CCC: Stability/Change)	Construct an <b>evidence-based</b> argument that articulates how changes to physical or biological components of an ecosystem affect populations. (SEP: 7; DCI: LS2.C; CCC: Stability/Change)
MS-LS2-5	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.* (SEP: 7; DCI: LS2.C, LS4.D, ETS1.B ; CCC: Stability/Change, Technology)	Evaluate competing design solutions for maintaining biodiversity and ecosystem <b>preservation practices</b> and services. (SEP: 7; DCI: LS2.C, LS4.D, CCC: Stability/Change) <b>Alignment may include 6-8-ETS1-2</b>
MS-LS4-5	Obtain, evaluate, and communicate information about how technological advances have changed the way humans influence the inheritance of desired traits in organisms. * (SEP: 8; DCI: LS4.B; CCC: Cause/Effect, Technology)	Obtain, evaluate, and communicate information about how technological advances have changed the way humans influence the inheritance of desired traits in organisms. (SEP: 8; DCI: LS4.B, <b>ETS1.A</b> ; CCC: Cause/Effect) <b>Alignment may include 6-8-ETS1-1; 6-8-ETS1-4</b>

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MS-ESS1-4		<b>Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history. (SEP: 6; DCI: ESS1.C; CCC: Scale/Prop.)</b>
MS-ESS3-1	Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. (SEP: 6; DCI: ESS3.A ; CCC: Cause/Effect , Technology)	Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. (SEP: 6; DCI: ESS3.A; CCC: Cause/Effect)
MS-ESS3-2	Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. (SEP: 4; DCI: ESS3.B; CCC: Patterns, Technology)	Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. (SEP: 4; DCI: ESS3.B; CCC: Patterns)
MS-ESS3-3	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.* (SEP: 6 ; DCI: ESS3.C; CCC: Cause/Effect, Technology)	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. (SEP: 6; DCI: ESS3.C, ETS2.B; CCC: Cause/Effect) <b>Alignment may include 6-8-ETS1-1</b>
HS-PS1-6	Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.* (SEP: 6; DCI: PS1.B, ETS1.C; CCC: Stability/Change)	Refine the design of a chemical <b>reaction</b> system by specifying a change in conditions that would produce increased amounts of products at equilibrium. (SEP: 6; DCI: PS1.B, ETS1.C; CCC: Stability/Change) <b>Alignment may include 9-12-ETS1-3</b>
HS-PS2-3	Design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.* (SEP: 6; DCI: PS2.A, ETS1.A, ETS1.C; CCC: Cause/Effect )	Design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision. (SEP: 6; DCI: PS2.A, ETS1.A, ETS1.C; CCC: Cause/Effect) <b>Alignment may include 9-12-ETS1-1, 9-12-ETS1-3</b>
HS-PS2-4	Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects. (SEP: 5; DCI: PS2.B; CCC: Patterns)	<b>(a)</b> Use mathematical representations of Newton's Law of Gravitation to describe and predict gravitational force between objects. <b>(b)</b> Use mathematical representations of Coulomb's Law to describe and predict electrostatic force between objects. (SEP: 5; DCI: PS2.B; CCC: Patterns)

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HS-PS2-6	Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.* (SEP: 8; DCI: PS1.A, PS2.B; CCC: Structure/Function)	Communicate scientific and technical information about why the molecular-level structure ( <b>intermolecular forces</b> ) is important in the functioning of designed materials. (SEP: 8; DCI: PS1.A, PS2.B, ETS1.A; CCC: Structure/Function) <b>Alignment may include 9-12-ETS1-1</b>
HS-PS3-2	Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects). (SEP: 2 ; DCI: PS3.A; CCC: Energy/Matter)	Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of the energy associated with the motion and relative position of particles (objects). (SEP: 2; DCI: PS3.A; CCC: Energy/Matter)
HS-PS3-3	Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy. (SEP: 6; DCI: PS3.A, PS3.D, ETS1.A; CCC: Energy/Matter, Technology)	Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy. (SEP: 6; DCI: PS3.A, PS3.D, <b>ETS1.C</b> ; CCC: Energy/Matter) <b>Alignment may include 9-12-ETS1-2</b>
HS-PS3-4	Plan and carry out an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (Second Law of Thermodynamics). (SEP: 3; DCI: PS3.B, PS3.D; CCC: Systems)	Plan and carry out an investigation to provide evidence for the <b>Second Law of Thermodynamics</b> . (SEP: 3; DCI: PS3.B, PS3.D; CCC: Systems)
HS-PS4-2	Evaluate questions about the advantages of using a digital transmission and storage of information. (SEP: 1; DCI: PS4.A; CCC: Stability/Change, Technology)	Evaluate questions about the advantages of using a digital transmission and storage of information. (SEP: 1; DCI: PS4.A, <b>ETS2.A</b> ; CCC: Stability/Change) <b>Alignment may include 9-12-ETS1-1</b>
HS-PS4-4	Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter. (SEP: 8; DCI: PS4.B; CCC: Cause/Effect)	<b>Engage in an evidence-based argument</b> for the effects that different frequencies of electromagnetic radiation have when absorbed by matter. (SEP: 7; DCI: PS4.B; CCC: Cause/Effect)



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HS-PS4-5	Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.* (SEP: 8; DCI: PS3.D, PS4.A, PS4.B, PS4.C; CCC: Cause/Effect, Technology)	Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy. (SEP: 8; DCI: PS3.D, PS4.A, PS4.B, PS4.C, <b>ETS2.A</b> ; CCC: Cause/Effect) <b>Alignment may include 9-12-ETS1-1</b>
HS-LS1-1	Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. (SEP: 6; DCI: LS1.A; CCC: Structure/Function)	Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells, <b>tissues, and organs</b> . (SEP: 6; DCI: LS1.A; CCC: Structure/Function)
HS-LS2-7	Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.* (SEP: 6; DCI: LS2.C, LS4.D, ETS1.B; CCC: Stability/Change)	Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity. (SEP: 6; DCI: LS2.C, LS4.D, ETS1.B, <b>ETS1.C</b> ; CCC: Stability/Change) <b>Alignment may include 9-12-ETS1-2 and 9-12-ETS1-3</b>
HS-LS4-6	Use a simulation to research and analyze possible solutions for the adverse impacts of human activity on biodiversity. (SEP: 5; DCI: LS4.C, LS4.D, ETS1.B; CCC: Cause/Effect)	Use a simulation to research and analyze possible solutions for the adverse impacts of human activity on biodiversity. (SEP: 5; DCI: LS4.C, LS4.D, ETS1.B; CCC: Cause/Effect) <b>Alignment may include 9-12-ETS1-3 and 9-12-ETS1-4</b>
HS-LS4-7	Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy. (SEP: 4; DCI: LS4.A ; CCC: Patterns)	Remove this standard
HS-ESS1-4	Use mathematical or computational representations to predict the motion of orbiting objects in the solar system. (SEP: 5; DCI: ESS1.B; CCC: Scale/Prop., Technology)	Use mathematical or computational representations to predict the motion of orbiting objects in the solar system. (SEP: 5; DCI: ESS1.B; CCC: Scale/Prop.)
	No standard	<b>HS-ESS2-1 Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features. (SEP: 2; DCI: ESS2.A, ESS2.B; CCC: Stability/Change)</b>

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HS-ESS2-1	Analyze geoscience data to make the claim that one change to Earth’s surface can create feedback that cause changes to other Earth systems. (SEP: 2; DCI: ESS2.A, ESS2.B; CCC: Stability/Change)	9-12-ESS2-2
HS-ESS2-2	Develop a model based on evidence of Earth’s interior to describe the cycling of matter by thermal convection. (SEP: 4; DCI: ESS2.A, ESS2.D; CCC: Stability/Change, Technology)	9-12-ESS2-3 Develop a model based on evidence of Earth’s interior to describe the cycling of matter by thermal convection. (SEP: 4; DCI: ESS2.A, ESS2.D; CCC: Stability/Change)
HS-ESS2-3	Use a model to describe how variations in the flow of energy into and out of Earth’s systems result in changes in climate. (SEP: 2; DCI: ESS2.A, ESS2.B, PS4.A; CCC: Energy/Matter, Technology)	9-12-ESS2-4 Use a model to describe how variations in the flow of energy into and out of Earth’s systems result in changes in climate. (SEP: 2; DCI: ESS2.A, ESS2.B, PS4.A; CCC: Energy/Matter)
HS-ESS2-4	Plan and carry out an investigation of the properties of water and its effects on Earth materials and surface processes. (SEP: 2; DCI: ESS1.B, ESS2.A, ESS2.D; CCC: Cause/Effect)	9-12-ESS2-5 Plan and carry out an investigation of the properties of water and its effects on <b>Earth's</b> materials and surface processes ( <b>erosion, water pollution, etc.</b> ). (SEP: 2; DCI: ESS1.B, ESS2.A, ESS2.D; CCC: Cause/Effect)
HS-ESS3-1	Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity. (SEP: 6; DCI: ESS3.A, ESS3.B ; CCC: Cause/Effect, Technology)	Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity. (SEP: 6; DCI: ESS3.A, ESS3.B; CCC: Cause/Effect)
HS-ESS3-2	Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.* (SEP: 7; DCI: ESS3.A, ETS1.B; CCC: Technology)	Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios. (SEP: 7; DCI: ESS3.A, ETS1.B; CCC: <b>Energy and Matter</b> ) <b>Alignment may include 9-12-ETS1-3</b>
HS-ESS3-3	Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity. (SEP: 5; DCI: ESS3.C; CCC: Stability/Change, Technology)	Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity. (SEP: 5; DCI: ESS3.C; CCC: Stability/Change)
HS-ESS3-4	Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.* (SEP: 6; DCI: ESS3.C, ETS1.B; CCC: Stability/Change, Technology)	Evaluate or refine a technological solution that reduces impacts of human activities on natural systems. (SEP: 6; DCI: ESS3.C, ETS1.B; CCC: Stability/Change) <b>Alignment may include 9-12-ETS1-3</b>