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| MS ESS1-1-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. | Lunar Cycle Eclipses Seasons | Lunar Cycle Eclipses Seasons | Space Interactive Notebook | Eclipses Inquiry Lab Lunar Phases Inquiry Lab - NGSS Focus Seasons - Rotation and Revolution Inquiry Lab | n/a | Lunar Cycle Escape Room Seasons, Day and Night Escape Room | Space | Full Year Resource Earth Science |
| MS ESS1-2-Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. | Galaxies and Light Years Planets (ESS1-2 and 1-3) | Galaxies Inner Planets Outer Planets | Space Interactive Notebook | Solar System Gravity Inquiry Lab | n/a | Planets Escape Room (MS ESS 1-2, MS ESS 1-3) | Space | Full Year Resource |
| MS ESS1-3-Analyze and interpret data to determine scale properties of objects in the solar system. | Planets (ESS1-2 and 1-3) | Inner Planets Outer Planets | Space Interactive Notebook | Scale Properties of Space Objects Inquiry Lab | n/a | Planets Escape Room (MS ESS 1-2, MS ESS 1-3) | Space | n/a |
| MS ESS1-4-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. | Fossils (ESS1-4, 2-3, LS4-1, 4-2) Geologic Time Scale (ESS1-4, 2-3, LS4-1) | Fossils (ESS1-4, 2-3, LS4-1, 4-2) Geologic Time Scale (ESS1-4, 2-3, LS4-1) | Earth Science Interactive Notebook | Geologic Time Inquiry Lab | n/a | n/a | n/a | Full Year Resource Earth Science |
| MS ESS2-1-Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. | Nitrogen Cycle Carbon Cycle Water Cycle (ESS2-1, 2-4, 3-1) | Nitrogen Cycle Carbon Cycle Water Cycle (ESS2-1, 2-4, 3-1) | Earth Science Interactive Notebook | Rock Cycle Inquiry Lab - NGSS Focus | n/a | Rock Cycle Escape Room | n/a | n/a |
| MS ESS2-2-Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. | Volcanoes (ESS2-2, 3-2) Plate Tectonics Continental Drift Topographic Maps | Volcanoes (ESS2-2, 3-2) Plate Tectonics Continental Drift Topographic Maps | Earth Science Interactive Notebook | Earth's Changing Surface Inquiry Lab | n/a | Plate Tectonics Escape Room (MS ESS2-2, MS ESS2-3) Topographic Escape Room | Earth Science | Full Year Resource Earth Science |
| MS ESS2-3-Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. | Fossils (ESS1-4, 2-3, LS4-1, 4-2) Geologic Time Scale (ESS1-4, 2-3, LS4-1) | Fossils (ESS1-4, 2-3, LS4-1, 4-2) Geologic Time Scale (ESS1-4, 2-3, LS4-1) | Earth Science Interactive Notebook | Pangaea Plate Movement Inquiry Lab | n/a | Plate Tectonics Escape Room (MS ESS2-2, MS ESS2-3) | n/a | Full Year Resource Earth Science |
| MS ESS2-4-Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. | Watersheds and Human Impact (ESS2-4, 3-1) Water Cycle (ESS2-1, 2-4, 3-1) Convection Currents (ESS2-4, -6) Weather Maps and Air Pressure (MS ESS2-3, -4) | Watersheds and Human Impact (ESS2-4, 3-1) Water Cycle (ESS2-1, 2-4, 3-1) Convection Currents (ESS2-4, 2-6) Weather Maps and Air Pressure (MS ESS2-3, -4) | Earth Science Interactive Notebook | Water Cycle Inquiry Lab | n/a | n/a | Earth Science | Earth Science |
| MS ESS2-5-Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. | Weather Maps and Air Pressure (MS ESS2-3, -4) Atmosphere | Air Pressure Air Masses and Fronts Atmosphere | n/a | Weather Maps and High-Low Pressure Inquiry Lab | n/a | Weather Escape Room | Weather | Full Year Resource |
| MS ESS2-6-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. | Convection Currents (ESS2-4, 2-6) Hurricanes Oceans | Convection Currents (ESS2-4, 2-6) Hurricanes Oceans | n/a | Convection Currents Inquiry Lab | n/a | n/a | Weather | n/a |
| 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. | Rock Cycle (mineral dist.) Watersheds (ESS2-4, 3-1) Water Cycle (ESS2-1, 2-4, 3-1) Weathering, Erosion, and Deposition | Rock Cycle (mineral dist.) Watersheds (ESS2-4, 3-1) Water Cycle (ESS2-1, 2-4, 3-1) Weathering and Erosion | n/a | Groundwater Distribution Inquiry Lab Fossil Fuel Distribution Inquiry Lab Mineral Distribution Inquiry Lab | n/a | Properties of Minerals Escape Room Renewable and Nonrenewable Energy Escape Room (MS ESS3-1, MS ESS3-4) | Earth Science | Full Year Resource Life Science (watershed_aquifer) Earth Science |

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| 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. | Volcanoes (ESS2-2, 3-2) Earthquakes Catastrophic Events Hurricanes | Volcanoes (ESS2-2, 3-2) Earthquakes Catastrophic Events Hurricanes | Earth Science Interactive Notebook | Natural Hazards Inquiry Lab | n/a | n/a | Earth Science | n/a |
| MS ESS3-3-Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. | Short and Long Term Environmental Impacts (MS ESS3-3, -4) Nonrenewable Energy Resources (MS ESS3-3, -4) Renewable Energy Resources (MS ESS3-3, -4) Biotic and Abiotic Factors (MS ESS3-3, -4, LS2-1, -3, -4) | Short and Long Term Environmental Impacts (MS ESS3-3, -4) Nonrenewable Resources (MS ESS3-3, -4) Renewable Resources (MS ESS3-3, -4) Abiotic and Biotic Factors (MS ESS3-3, -4, LS2-1, -3, -4) | Ecosystems Interactive Notebook | Water Pollution Inquiry Lab | Project Save the Oceans (MS ESS3-3, MS-ETS1-1, -2, -3, -4) Project Wind and Sky (MS ESS3-3, MS-ETS 1-1, -2, -3, -4) | n/a | Ecosystems | n/a |
| MS ESS3-4-Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems. | Short and Long Term Environmental Impacts to Organisms (MS ESS3-3, -4) Nonrenewable Resources (MS ESS3-3, -4) Renewable Resources (MS ESS3-3, -4) Biotic and Abiotic Factors (MS ESS3-3, -4, LS2-1, -3, -4) | Short and Long Term Environmental Impacts (MS ESS3-3, -4) Nonrenewable Resources (MS ESS3-3, -4) Renewable Resources (MS ESS3-3, -4) Abiotic and Biotic Factors (MS ESS3-3, -4, LS2-1, -3, -4) | Ecosystems Interactive Notebook | Human Impact Inquiry Lab | n/a | Renewable and Nonrenewable Energy Escape Room (MS ESS3-1, MS ESS3-4) | Ecosystems | n/a |
| MS ESS3-5-Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century. | Short and Long Term Environmental Impacts to Organisms (MS ESS3-3, -4) | Short and Long Term Environmental Impacts (MS ESS3-3, -4) | n/a | Greenhouse Effect Inquiry Lab | n/a | n/a | Ecosystems | n/a |
| MS LS1-1-Conduct an investigation to provide evidence that living things are made of cells either one cell or many different numbers and types of cells. | Cell Theory (MS LS1-1, -2, -3) Plant and Animal Cells (MS LS1-1, -2, -3) Prokaryotic and Eukaryotic Cells (MS LS1-1, -2, -3) Characteristics of Organisms (MS LS1-1, -2, -3) | Cell Theory (MS LS1-1, -2, -3) Plant and Animal Cells (MS LS1-1, -2, -3) Prokaryotic and Eukaryotic Cells (MS LS1-1, -2, -3) Characteristics of Organisms (MS LS1-1, -2, -3) | Structure of Life Interactive Notebook | Cell Theory Inquiry Lab | n/a | Body Systems Escape Room (MS LS1-1 and MS LS1-2) Cells Escape Room (MS LS1-1, LS1-2, LS1-3) Prokaryotic and Eukaryotic Escape Room (MS LS1-1, MS LS1-2, MS LS1-4) | Body Systems & Cells | Full Year Resource Life Science (body systems) |
| MS LS1-2-Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. | Cell Theory (MS LS1-1, -2, -3) Plant and Animal Cells (MS LS1-1, -2, -3) Prokaryotic and Eukaryotic Cells (MS LS1-1, -2, -3) Characteristics of Organisms (MS LS1-1, -2, -3) | Cell Theory (MS LS1-1, -2, -3) Plant and Animal Cells (MS LS1-1, -2, -3) Prokaryotic and Eukaryotic Cells (MS LS1-1, -2, -3) Characteristics of Organisms (MS LS1-1, -2, -3) | Structure of Life Interactive Notebook | Plant and Animal Cell Comparison Inquiry Lab | n/a | Body Systems Escape Room (MS LS1-1 and MS LS1-2) Cells Escape Room (MS LS1-1, LS1-2, LS1-3) Prokaryotic and Eukaryotic Escape Room (MS LS1-1, MS LS1-2, MS LS1-4) | Body Systems & Cells | Life Science |
| MS LS1-3-Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. | Cell Theory (MS LS1-1, -2, -3) Plant and Animal Cells (MS LS1-1, -2, -3) Prokaryotic and Eukaryotic Cells (MS LS1-1, -2, -3) Characteristics of Organisms (MS LS1-1, -2, -3) | Cell Theory (MS LS1-1, -2, -3) Plant and Animal Cells (MS LS1-1, -2, -3) Prokaryotic and Eukaryotic Cells (MS LS1-1, -2, -3) Characteristics of Organisms (MS LS1-1, -2, -3) | Structure of Life Interactive Notebook | Cells to Systems Inquiry Lab | n/a | Cells Escape Room (MS LS1-1, LS1-2, LS1-3) | Body Systems & Cells | Life Science |
| MS LS1-4-Use 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. | Symbiosis Organism Relationships (MS LS1-4, 2-2) Sexual and Asexual Reproduction (MS LS1-4, 3-1, -2, 4-4) | Symbiosis Organism Relationships (MS LS1-4, 2-2) Sexual and Asexual Reproduction (MS LS1-4, 3-1, -2, 4-4) | n/a | Pollination Inquiry Lab | n/a | Body Systems Escape Room (MS LS1-1 and MS LS1-2) Cells Escape Room (MS LS1-1, LS1-2, LS1-3) Prokaryotic and Eukaryotic Escape Room (MS LS1-1, MS LS1-2, MS LS1-4) | Ecosystems | Full Year Resource Life Science (adaptation) |

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| MS LS1-5-Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. | Tropisms and Turgor Pressure Genetics (MS LS1-5, 3-1, 4-4) Inherited Traits (MS LS1-5, 3-1) | Tropisms and Turgor Pressure Genetics (MS LS1-5, 3-1, 4-4) Inherited Traits (MS LS1-5, 3-1) | Ecosystems Interactive Notebook | Natural and Artificial Selection Inquiry Lab (MS LS1-4, MS LS4-6) | n/a | n/a | Body Systems & Cells | Full Year Resource Life Science |
| MS LS1-6-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. | Photosynthesis Food Webs (MS LS1-6, 2-1, -3) Energy Pyramids (MS LS1-6, 2-3) | Photosynthesis Food Webs (MS LS1-6, 2-1, -3) Energy Pyramids (MS LS1-6, 2-3) | Chemistry Interactive Notebook, photosynthesis page | Food Chains, Webs, Pyramids Inquiry Lab | n/a | Prokaryotic and Eukaryotic Escape Room (MS LS1-1, MS LS1-2, MS LS1-4) Cells Escape Room (MS LS1-1, LS1-2, LS1-3) Body Systems Escape Room (MS LS1-1 and MS LS1-2) | Ecosystems | Life Science |
| MS LS1-7-Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. | Digestive System Molecules Balancing Chemical Equations Physical and Chemical Changes | Digestive System Molecules Balancing Chemical Equations Chemical Changes and Physical Changes | n/a | Food Chemistry Inquiry Lab | n/a | n/a | Body Systems & Cells | n/a |
| MS LS1-8 - Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories. | Nervous System | Nervous System | Structure of Life Interactive Notebook | Nervous System Inquiry Lab | n/a | n/a | n/a | n/a |
| MS LS2-1-Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. | Biotic and Abiotic Factors (MS ESS3-3, -4, LS2-1, -3, -4) Biodiversity (MS LS2-1, -3) Food Webs (MS LS1-6, 2-1, -3) | Abiotic and Biotic Factors (MS ESS3-3, -4, LS2-1, -3, -4) Biodiversity (MS LS2-1, -3) Food Webs (MS LS1-6, 2-1, -3) | n/a | Population Resources Inquiry Lab | n/a | Food Web Escape Room (MS LS1-6, LS2-1, LS 2-2, LS2-4, LS2-5) | Ecosystems | Full Year Resource Life Science |
| MS LS2-2-Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. | Organism Relationships (MS LS1-4, 2-2) | Organism Relationships (MS LS1-4, 2-2) | Ecosystems Interactive Notebook | Ecosystem Patterns Inquiry Lab | n/a | Biome Escape Room (covers MS LS 2-2, 2-5, and 2-1) | Ecosystems | Full Year Resource Life Science |
| MS LS2-3-Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. | Biotic and Abiotic Factors (MS ESS3-3, -4, LS2-1, -3, -4) Biodiversity (MS LS2-1, -3) Food Webs (MS LS1-6, 2-1, -3) Energy Pyramids (MS LS1-6, 2-3) | Abiotic and Biotic Factors (MS ESS3-3, -4, LS2-1, -3, -4) Biodiversity (MS LS2-1, -3) Food Webs (MS LS1-6, 2-1, -3) Energy Pyramids (MS LS1-6, 2-3) | Ecosystems Interactive Notebook | Food Chains, Food Webs, and Energy Pyramids Inquiry Lab | n/a | Food Web and Energy in and Ecosystem Escape Room (MS LS1-6, LS2-1, LS 2-2, LS2-4, LS2-5) Biotic and Abiotic Factors Escape Room Photosynthesis Escape Room | Ecosystems | Life Science |
| MS LS2-4-Construct an argument supported by empirical evidence that shows changes to physical or biological components of an ecosystem affect populations | Biotic and Abiotic Factors (MS ESS3-3, -4, LS2-1, -3, -4) Short and Long Term Environmental Impacts to Organisms (MS ESS3-3, -4) | Abiotic and Biotic Factors (MS ESS3-3, -4, LS2-1, -3, -4) Short and Long Term Environmental Impacts to Organisms (MS ESS3-3, -4) | Ecosystems Interactive Notebook | Human Impact on Oceans Inquiry Lab | n/a | Food Web Escape Room (MS LS1-6, LS2-1, LS 2-2, LS2-4, LS2-5) | Ecosystems | Life Science |
| MS LS2-5-Evaluate competing design solutions for maintaining biodiversity and ecosystem services. | | | n/a | Designs for Biodiversity Inquiry Lab | n/a | Food Web Escape Room (MS LS1-6, LS2-1, LS 2-2, LS2-4, LS2-5) | Ecosystems | Life Science |
| MS LS3-1-Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism. | Mitosis and Meiosis Inherited Traits (MS LS1-5, 3-1) Sexual and Asexual Reproduction (MS LS1-4, 3-1, -2, 4-4) Genetics (MS LS1-5, 3-1, 4-4) | Mitosis and Meiosis Inherited Traits (MS LS1-5, 3-1) Sexual and Asexual Reproduction (MS LS1-4, 3-1, -2, 4-4) Genetics (MS LS1-5, 3-1, 4-4) | Structure of Life Interactive Notebook | Mutations Inquiry Lab | n/a | n/a | Body Systems & Cells | Full Year Resource Life Science |
| MS LS3-2-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. | Sexual and Asexual Reproduction (MS LS1-4, 3-1, -2, 4-4) | Sexual and Asexual Reproduction (MS LS1-4, 3-1, -2, 4-4) | Structure of Life Interactive Notebook | Asexual vs Sexual Reproduction Inquiry Lab | n/a | n/a | Body Systems & Cells | Life Science |

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| MS LS4-1-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. | Fossils (ESS1-4, 2-3, LS4-1, 4-2) Geologic Time Scale (ESS1-4, 2-3, LS4-1) | Fossils (ESS1-4, 2-3, LS4-1, 4-2) Geologic Time Scale (ESS1-4, 2-3, LS4-1) | Earth Science Interactive Notebook | Fossil Evidence Inquiry Lab | n/a | n/a | n/a | Full Year Resource |
| MS LS4-2-Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. | Fossils (ESS1-4, 2-3, LS4-1, 4-2) | Fossils (ESS1-4, 2-3, LS4-1, 4-2) | n/a | Comparing Skeletal Structures Inquiry Lab | n/a | n/a | n/a | n/a |
| MS LS4-3-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. | n/a | n/a | n/a | Comparative Embryology Inquiry Lab | n/a | n/a | Body Systems & Cells | n/a |
| MS LS4-4-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. | Genetics (MS LS1-5, 3-1, 4-4) Sexual and Asexual Reproduction (MS LS1-4, 3-1, -2, 4-4) | Genetics (MS LS1-5, 3-1, 4-4) Sexual and Asexual Reproduction (MS LS1-4, 3-1, -2, 4-4) | n/a | Genetic Variation Inquiry Lab | Project Birdman (MS-ETS 1-1, -2, -3, -4, MS LS4-4, MS LS 4-6) | n/a | Body Systems & Cells | Life Science |
| MS LS4-5-Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms. | | | n/a | Selecting Breeding: CRISPR Technology Inquiry Lab | n/a | n/a | Body Systems & Cells | n/a |
| MS LS4-6-Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. | Natural Selection | Natural Selection | n/a | Natural Selection Inquiry Lab | Project Birdman (MS-ETS 1-1, -2, -3, -4, MS LS4-4, MS LS 4-6) | n/a | Ecosystems | Full Year Resource Life Science |
| MS PS1-1 - Develop models to describe the atomic composition of simple molecules and extended structures. | Atoms Elements and Compounds Molecules Counting Atoms and Elements Organic Compounds | Atoms Elements, Compounds, and Mixtures Molecules Counting Atoms and Elements Organic Compounds | Chemistry Interactive Notebook | Molecules Inquiry Lab | n/a | Atoms Escape Game Periodic Table Escape Room | Chemistry | Full Year Resource Physical Science |
| MS PS1-2 - Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred | Chemical Bonds Physical and Chemical Changes Density of a Regular-Shaped Object Density of an Irregular-Shaped Object | Chemical Bonds Chemical Changes and Physical Changes Density of a Regular-Shaped Object Density of an Irregular-Shaped Object | Chemistry Interactive Notebook | Chemical Changes and Physical Changes Inquiry Lab | n/a | Physical and Chemical Changes | Chemistry | Physical Science |
| MS PS1-3 - Gather and make sense of information to describe that synthetic materials come from natural resources and impact society | n/a | n/a | n/a | Synthetic Materials Inquiry Lab | n/a | Density Escape Room | Chemistry | n/a |
| MS PS1-4 - 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. | Conduction, Convection, and Radiation (MS PS1-3, -6, 4-4) Energy Transformations (MS PS1-6) | Conduction, Convection, and Radiation (MS PS1-3, -6, 4-4) Energy Transformations (MS PS1-6) | n/a | Heat Transfer Inquiry Lab | n/a | | n/a | Physical Science |
| MS PS1-5 - 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. | Balancing Chemical Equations | Balancing Chemical Equations | Chemistry Interactive Notebook | Law of Conservation of Mass Inquiry Lab | n/a | Counting Atoms and Balancing Equations Escape Game | Chemistry | Physical Science |
| MS PS1-6 - Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes | Conduction, Convection, and Radiation (MS PS1-3, -6, 4-4) Energy Transformations (MS PS1-4) | Conduction, Convection, and Radiation (MS PS1-3, -6, 4-4) Energy Transformations (MS PS1-4) | n/a | Exothermic and Endothermic Reactions Inquiry Lab | n/a | | Energy | Physical Science |

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| MS PS2-1-Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects. | Balanced and Unbalanced Forces (MS PS2-1, -2) Newton's Laws (MS PS2-1, -2) Motion Graphing (MS PS2-1, -2) Net Force (MS PS2-1, -2) | Balanced and Unbalanced Forces (MS PS2-1, -2) Newton's Laws - Third Law (MS PS2-1, -2) Motion Graphing (MS PS2-1, -2) Net Force (MS PS2-1, -2) | Force and Motion Interactive Notebook | Newton's 3rd Law Inquiry Lab | n/a | Newton's Laws Escape Room (MS PS2-1, MS PS2-2) | Force & Motion | n/a |
| MS PS2-2-Plan 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. | Balanced and Unbalanced Forces (MS PS2-1, -2) Newton's Laws (MS PS2-1, -2) Motion Graphing (MS PS2-1, -2) Net Force (MS PS2-1, -2) | Balanced and Unbalanced Forces (MS PS2-1, -2) Newton's Laws - First Law (MS PS2-1, -2) Newton's Laws - Second Law (MS PS2-1, -2) Newton's Laws - Third Law (MS PS2-1, -2) Motion Graphing (MS PS2-1, -2) Net Force (MS PS2-1, -2) | Force and Motion Interactive Notebook | Newton's 2nd Law Inquiry Lab | Project Inhabit Mars (MS-ETS 1-1, -2, -3, -4, MS PS 2-2) Project Move (MS-ETS 1-1, -2, -3, -4, MS PS 2-2) Project Skydive (MS PS 2-2, MS-ETS 1-1, -2, -3, -4) | Speed, Velocity, Acceleration Escape Room (MS PS2-2, MS PS3-1) Newton's Laws Escape Room (MS PS2-1, MS PS2-2) Net Force Escape Room | Force & Motion | Full Year Resource |
| MS PS2-3-Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. | Electric and Magnetic Forces | Electric and Magnetic Forces | Force and Motion Interactive Notebook | Electromagnetism Inquiry Lab | n/a | Electromagnetic Escape Room (also MS PS2-5) | Energy | Physical Science |
| MS PS2-4-Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects. | n/a | n/a | n/a | Gravity and Mass Inquiry Lab | n/a | n/a | Space | |
| 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. | n/a | n/a | n/a | Electrical Forces Inquiry Lab | n/a | Electromagnetic Escape Room (also MS PS2-5) | Force & Motion | Full Year Resource Physical Science |
| MS PS3-1-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. | Potential and Kinetic Energy (MS PS3-1, -5) | Kinetic and Potential Energy (MS PS3-1, -5) | Force and Motion Interactive Notebook | Kinetic Energy Inquiry Lab | n/a | Graphing Escape Room (MS PS3-1, MS3-1) Potential and Kinetic Energy Escape Room (MS PS3-1, MS PS3-2, MS PS3-5) Speed, Velocity, Acceleration Escape Room (MS PS2-2, MS PS3-1) | Force & Motion | Full Year Resource Physical Science |
| MS PS3-2-Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system. | n/a | n/a | Force and Motion Interactive Notebook | Potential Energy Inquiry Lab | Project Thrills (MS PS3-2, MS PS3-5, MS-ETS 1-1, -2, -3, -4) | n/a | Force & Motion | Physical Science |
| MS PS3-3-Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.* | Conduction, Convection, and Radiation (MS PS1-3, -6, 4-4) | Conduction, Convection, and Radiation (MS PS1-3, -6, 4-4) | n/a | Thermal Energy Transfer Inquiry Lab | n/a | Energy Transformation Escape Room (MS PS3-3 and PS3-4) Heat Transfer Escape Room (MS PS3-3, MS PS3-4) Potential and Kinetic Energy Escape Room (MS PS3-1, MS PS3-2, MS PS3-5) | Energy | n/a |
| MS PS3-4-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. | Energy Transformations | Energy Transformations | n/a | Calorimetry Inquiry Lab | n/a | Energy Transformation Escape Room (MS PS3-3 and PS3-4) Heat Transfer Escape Room (MS PS3-3, MS PS3-4) | Energy | Physical Science (energy transformation) |
| MS PS3-5-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. | Potential and Kinetic Energy (MS PS3-1, -5) | Kinetic and Potential Energy (MS PS3-1, -5) | Energy Interactive Notebook | Kinetic Energy Transfer Inquiry Lab | Project Electric (MS PS3-5, MS-ETS 1-1, -2, -3, -4) | Potential and Kinetic Energy Escape Room (MS PS3-1, MS PS3-2, MS PS3-5) | Energy | Physical Science |
| MS PS4-1-Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave. | Properties of Waves (MS PS4-1, -2) | Properties of Waves (MS PS4-1, -2) | Energy Interactive Notebook | Wave Models Inquiry Lab | Project Thrills (MS PS3-2, MS PS3-5, MS-ETS 1-1, -2, -3, -4) | Waves Escape Room (MS PS4-1, MS PS4-2) | Energy | Full Year Resource |
| MS PS4-2-Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. | Properties of Waves (MS PS4-1, -2) | Properties of Waves (MS PS4-1, -2) | Energy Interactive Notebook | Wave Characteristic Inquiry Lab | n/a | Waves Escape Room (MS PS4-1, MS PS4-2) | Energy | Physical Science |

| Suggested 5E Section: | SUITABLE for all E's 5E Lessons - Lab Member Links | EXPLORATION Station Labs - Lab Member Links | EXPLANATION INBs - Lab Member Links | ELABORATION Inquiry Labs - Lab Member Links also EXPLORATION | STEM Challenges - Lab Member Links | EVALUATION Escape Games - Lab Member Links | Game Boards - Lab Member Links | VARIES Bell Ringers - Lab Member Links |
|--|---|--|--|--|--|--|------------------------------------|---|
| NGSS Standards (shared standards in parentheses) | <i>*includes Station Labs and INBs</i> | <i>*included in 5E Lessons</i> | <i>*included in 5E Lessons</i> | <i>*NOT included in 5E Lessons</i> | <i>*NOT included in 5E Lessons</i> | <i>*NOT included in 5E Lessons</i> | <i>*NOT included in 5E Lessons</i> | <i>*NOT included in 5E Lessons</i> |
| MS PS4-3-Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals. | n/a | n/a | n/a | Communication Signals Inquiry Lab | n/a | n/a | Energy | n/a |
| MS ETS1.A - Defining and delimiting engineering problems. | n/a | n/a | n/a | n/a | All STEM Challenges | Engineering Design Process Escape Room (MS ETS1.A and ETS1.B) | n/a | n/a |
| MS ETS1.B - Developing possible solutions | n/a | n/a | n/a | n/a | All STEM Challenges | Engineering Design Process Escape Room (MS ETS1.A and ETS1.B) | n/a | n/a |
| MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. | n/a | n/a | n/a | n/a | ALL STEM Challenges meet this standard | n/a | n/a | |
| MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. | n/a | n/a | n/a | n/a | ALL STEM Challenges meet this standard | n/a | n/a | |
| MS-ETS1-3 Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. | n/a | n/a | n/a | n/a | ALL STEM Challenges meet this standard | n/a | n/a | |
| MS-ETS1-4 Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved. | n/a | n/a | n/a | n/a | ALL STEM Challenges meet this standard | n/a | n/a | |
| MS Crosscutting Concepts: patterns cause and effect scale, proportion, and quantity structure and function stability and change | n/a | n/a | n/a | n/a | n/a | Graphing Escape Room (MS PS3-1, MS) | n/a | n/a |
| Scientific practices include planning and carrying out investigations, analyzing and interpreting data, using mathematical and computational thinking, constructing explanations and designing solutions, engaging in argumentation based on evidence | n/a | n/a | n/a | n/a | n/a | Measurement Escape Room Scientific Method Escape Room | n/a | n/a |