



Dover Area School District Curriculum K-U-D
Grade 5 Science

	Eligible Content	Know	Understand	Do
3.1.5.A3. Compare and contrast the similarities and differences in life cycles of different organisms.	~S5.B.1.1.1 Recognize that all organisms are composed of cells. ~S5.B.1.1.2 Explain the concept of the cell as the basic structural unit of all living things. ~S5.B.1.1.3 Compare the structure and function of basic cell parts in organisms.	Life cycle, molt	Animals and plants have different life cycles.	Compare and contrast organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
3.1.5.A9. Science as Inquiry Standard ~Understand how theories are developed. ~Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. ~Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. ~Describe relationships using inference and prediction. ~Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientists to analyze and quantify results of investigations. ~Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. ~Analyze alternative explanations and understanding that science advances through legitimate skepticism. ~Use mathematics in all aspects of scientific inquiry. ~Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.	~S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~ S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.1.1 Design a simple, controlled experiment (fair test) identifying the independent and dependent variables, how the dependent variable will be measured and which variables will be held constant. ~S5.A.2.1.2 Describe relationships between variables through interpretation of data and observations. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes.	Arthropod, Classify, Classification System, Conifer, Dichotomous Key, Invertebrate, Kingdom, Vertebrate, Phylum, Species, Nonvascular, Vascular	Scientists classify organisms in order to identify them and compare their characteristics Students should understand the biological levels of classification	Accurately use a dichotomous key to identify organisms Accurately create a dichotomous key to analyze organisms' similarities and differences
3.1.5.B1. Differentiate between inherited and acquired characteristics of plants and animals.		Adaptation, Exoskeleton, Extinct species, Instincts, Spiracles, Stomata, Structural Adaptations	Some characteristics are inherited and some are learned.	Distinguish between instinctive and learned animal behaviors that relate to survival. Explain how inherited traits help organisms survive and reproduce in different environments.



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<p>3.1.5.B6. Science of Inquiry Standard ~Understand how theories are developed. ~Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. ~Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. ~Describe relationships using inference and prediction. ~Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientists to analyze and quantify results of investigations. ~Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. ~Analyze alternative explanations and understanding that science advances through legitimate skepticism. ~Use mathematics in all aspects of scientific inquiry. ~Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.</p>	<p>~S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~ S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.1.1 Design a simple, controlled experiment (fair test) identifying the independent and dependent variables, how the dependent variable will be measured and which variables will be held constant. ~S5.A.2.1.2 Describe relationships between variables through interpretation of data and observations. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes.</p>	Behavioral adaptations, instincts	Some characteristics are inherited and some are learned.	Conduct an investigation on the inherited traits of classroom students. Some traits will be learned and some will be instincts. Collect and organize data according to the inherited traits. Display the data and analyze the results differentiating between learned behavioral adaptations and instincts. Conduct an investigation on inherited and learned traits of animals native to Pennsylvania.
<p>3.1.5.C1. Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment.</p>	<p>S.5.A.3 Systems, Model and Patterns S.5.B.1 Structure and Function of Organisms S.5.B.2 Continuity of Life S.5.B.3 Ecological Behavior and Systems</p>	Succession, instincts, mutation, extinct species, adaptations	Organisms meet their needs by responding to the environment.	Explain how certain behaviors help organisms survive and reproduce in different environments.
<p>3.1.5.C2. Give examples of how inherited characteristics (e.g., shape of beak, length of neck, location of eyes, shape of teeth) may change over time as adaptations to changes in the environment that enable organisms to survive.</p>	<p>S5.B.2.1.1 Differentiate between inherited and acquired traits. ~S5.B.2.1.2 Explain how inherited traits help organisms survive and reproduce in different environments. ~S5.B.2.1.3 Explain how certain behaviors help organisms survive and reproduce in different environments. ~S5.B.2.1.4 Identify changes in environmental conditions that can affect the survival of populations and entire species.</p>	Structural Adaptations	Characteristics can be inherited and characteristics can change / adapt based on the environment and survival.	Recognize that extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival.



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<p>3.1.5.C4. Science of Inquiry Standard ~Understand how theories are developed. ~Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. ~Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. ~Describe relationships using inference and prediction. ~Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientists to analyze and quantify results of investigations. ~Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. ~Analyze alternative explanations and understanding that science advances through legitimate skepticism. ~Use mathematics in all aspects of scientific inquiry. ~Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.</p>	<p>~S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~ S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.1.1 Design a simple, controlled experiment (fair test) identifying the independent and dependent variables, how the dependent variable will be measured and which variables will be held constant. ~S5.A.2.1.2 Describe relationships between variables through interpretation of data and observations. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes.</p>	<p>Structural Adaptations</p>	<p>Characteristics can be inherited and characteristics can change / adapt based on the environment and survival.</p>	<p>Research the adaptations of multiple animals from various ecosystems. Using a design and planning process students create a "new" animal that has adaptations that would best fit a chosen environment. Students defend their choices of structural adaptations in writing.</p>
<p>3.3.5.A1. Describe how landforms are the result of a combination of destructive forces such as erosion and constructive erosion, deposition of sediment, etc.</p>	<p>S5.B.3.2.1 Identify fossil fuels and alternative fuels used by humans. ~S5.B.3.2.2 Describe the usefulness of Earth's physical resources as raw materials for the human-made world. ~S5.C.1.2.2 Identify differences between chemical and physical changes of matter. ~S5.D.1.1.1 Differentiate between abrupt changes in Earth's surface (e.g., earthquakes, volcanoes, meteor impacts, landslides) and gradual changes in Earth's surface. ~S5.D.1.1.2 Explain how geological processes observed today (e.g., erosion, changes in the composition of the atmosphere, volcanic eruptions, earthquakes) are similar to those in the past. ~S5.D.1.2.2 Describe the importance of wetlands in an ecosystem. ~</p>	<p>mineral, igneous, sedimentary, metamorphic, rock cycle, soil, weathering, organic matter, humus, inorganic matter, erosion, deposition, plate, constructive force, destructive force</p>	<p>Changes in Earth's surface can be abrupt or gradual</p>	<p>Differentiate between abrupt changes in Earth's surface (e.g., earthquakes, volcanoes, meteor impacts, landslides) and gradual changes in Earth's surface</p>
<p>3.3.5.A3. Explain how geological processes observed today such as erosion, movement of lithospheric plates, and changes in the composition of the atmosphere are similar to those in the past.</p>	<p>S5.D.1.1.1 Differentiate between abrupt changes in Earth's surface (e.g., earthquakes, volcanoes, meteor impacts, landslides) and gradual changes in Earth's surface (e.g., lifting up of mountains, wearing away by erosion). S5.D.1.1.2 Explain how geological processes observed today (e.g., erosion, changes in the composition of the atmosphere, volcanic eruptions, earthquakes) are similar to those in the past.</p>	<p>Tectonic plates, lithosphere, rock cycle</p>	<p>Changes in the Earth's surface can be gradual or abrupt. he Earth's surface undergoes both constructive and destructive geological processes.</p>	<p>Create a model to show the interactions of the lithospheric plates including their constructive and destructive processes. Describe how plate tectonics contribute to volcanic activity resulting in geological changes including the rock cycle.</p>



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	Eligible Content	Know	Understand	Do
3.3.5.A4. Explain the basic components of the water cycle.	S5.C.1.2.1 Describe how water changes from one state to another. ~S5.D.1.2.1 Identify physical, chemical, and biological factors that affect water quality. ~S5.D.2.1.1 Explain how the cycling of water into and out of the atmosphere impacts climatic patterns. ~S5.D.2.1.2 Explain the effects of oceans and lakes on climate.	Ground water, evaporation, precipitation, condensation, transpiration, sublimation	All of Earth's water is connected	Describe how models are used to better understand the relationships in natural systems (e.g., water cycle,
3.3.5.A5. Differentiate between weather and climate. Explain how the cycling of water, both in and out of the atmosphere, has an effect on climate.	S5.C.1.2.1 Describe how water changes from one state to another. ~S5.D.1.2.1 Identify physical, chemical, and biological factors that affect water quality. ~S5.D.2.1.1 Explain how the cycling of water into and out of the atmosphere impacts climatic patterns. ~S5.D.2.1.2 Explain the effects of oceans and lakes on climate.	Hydrosphere, Reservoir, Weather, Barometric, Pressure, Humidity, Circulation, Sleet, Hail, Climate, Latitude, Elevation	Climate, weather, and the water cycle are connected. Climate is over an extended time and weather is the state of the atmosphere at a specific time.	Explain how the cycling of water in and out of the atmosphere impacts climatic patterns.
3.3.5.A7 ; 3.1.5.C4. Science as Inquiry Standards ~Understand how theories are developed. ~Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. ~Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. ~Describe relationships using inference and prediction. ~Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientists to analyze and quantify results of investigations. ~Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. ~Analyze alternative explanations and understanding that science advances through legitimate skepticism. ~Use mathematics in all aspects of scientific inquiry. ~Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection.	~S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~ S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.1.1 Design a simple, controlled experiment (fair test) identifying the independent and dependent variables, how the dependent variable will be measured and which variables will be held constant. ~S5.A.2.1.2 Describe relationships between variables through interpretation of data and observations. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes.	Hydrosphere, Reservoir, Weather, Circulation, Climate, Latitude, Elevation	Climate, weather, and the water cycle are connected.	Develop a model of the water cycle that describes the relationships within the hydrosphere.
3.4.5.A1. Explain how people use tools and techniques to help them do things.	S.5.A.1 Reasoning and Analysis/ S.5.A.2 Processes, Procedures, and Tools of Scientific Investigations	data, precision, accuracy	Tools are an extension of the human body to help solve problems.	Identify tools and techniques that help solve problems.
4.1.5.A. Describe the roles of producers, consumers, and decomposers within a local ecosystem.	BIO.B.4.2.1 Describe how energy flows through an ecosystem. ~S5.B.3.1.1 Describe the roles of producers, consumers, and decomposers within a local ecosystem. ~S5.B.3.1.2 Describe the relationships between organisms in different food webs. ~	Biome , Community, Competition, Consumer, Decomposer, Ecosystem, Endangered species, Environment, Extinction, Food chain, Food web, Habitat, Nonnative Species, *Niche, Population, Predator, Prey, Producer	All living organisms have a role in an ecosystem.	Describe the roles of producers, consumers, and decomposers within a local ecosystem.



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4.1.5.B. Explain the basic components of the water cycle.	S5.C.1.2.1 Describe how water changes from one state to another. ~S5.D.1.2.1 Identify physical, chemical, and biological factors that affect water quality. ~S5.D.2.1.1 Explain how the cycling of water into and out of the atmosphere impacts climatic patterns. ~S5.D.2.1.2 Explain the effects of oceans and lakes on climate.	Ground water, evaporation, precipitation, condensation, transpiration, sublimation	All of Earth's water is connected	Create a model to show how Earth's water is connected.
4.1.5.C. Describe different food webs including a food web containing humans	S5.B.3.1.1 Describe the roles of producers, consumers, and decomposers within a local ecosystem. ~S5.B.3.1.2 Describe the relationships between organisms in different food webs. ~	Food Chains, Food Webs	Food webs can be different depending on the biome and ecosystem.	Describe the relationships between organisms in different food webs.
4.5.5.D. Explain the differences between threatened, endangered, and extinct organisms.	BIO.B.4.2.1 Describe how energy flows through an ecosystem . ~S5.B.3.1.1 Describe the roles of producers, consumers, and decomposers within a local ecosystem. ~S5.B.3.1.2 Describe the relationships between organisms in different food webs.	threatened, endangered, extinct	Extinction is final but threatened and endangered are reversible.	Identify changes in environmental conditions that can affect the survival of populations and entire species.
4.1.5.F. Science of Inquiry Standard ~Understand how theories are developed. ~Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. ~Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. ~Describe relationships using inference and prediction. ~Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientists to analyze and quantify results of investigations. ~Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments and are based on scientific principles, models, and theories. ~Analyze alternative explanations and understanding that science advances through legitimate skepticism. ~Use mathematics in all aspects of scientific inquiry. ~Understand that scientific investigations may result in new ideas for study, new methods or procedures for an investigation, or new technologies to improve data collection.	~S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~ S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.1.1 Design a simple, controlled experiment (fair test) identifying the independent and dependent variables, how the dependent variable will be measured and which variables will be held constant. ~S5.A.2.1.2 Describe relationships between variables through interpretation of data and observations. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes.	Food Chains, Food Webs, Ecosystems	Food webs and food chains have populations that grow, decrease and change depending on resources, natural disasters, climate change, or human impact.	Design a simulation that shows how a change in resources affects the populations within an ecosystem (i'e. "Oh Deer"). Collect data showing the rise and fall of populations within an ecosystem. Create a line graph that displays that correlations between lack and abundance of resources. Analyze graphs to interpret the data on how ecosystems change.
4.2.5.A. Explain the water cycle.	BIO.B.4.2.3 Describe how matter recycles through an ecosystem. ~S5.D.1.2.1 Identify physical, chemical, and biological factors that affect water quality. ~S5.D.1.2.2 Describe the importance of wetlands in an ecosystem. ~S5.D.2.1.1 Explain how the cycling of water into and out of the atmosphere impacts climatic patterns. ~S5.D.2.1.2 Explain the effects of oceans and lakes on climate. ~	Ground water, evaporation, precipitation, condensation, transpiration, sublimation	All of Earth's water is connected	Create a model to show how Earth's water is connected.



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4.2.5.C. Identify physical, chemical, and biological factors that affect water quality.	BIO.A.2.1.1 Describe the unique properties of water and how these properties support life on Earth. ~S5.D.1.2.1 Identify physical, chemical, and biological factors that affect water quality. ~S5.D.1.2.2 Describe the importance of wetlands in an ecosystem.	acid rain, pollution, fertilizer, road salt, runoff, erosion	Human and natural factors have an impact on water quality.	Identify physical, chemical, and biological factors that affect water quality.
4.2.5.D. Science of Inquiry Standard ~Understand how theories are developed. ~Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. ~Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. ~Describe relationships using inference and prediction. ~Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientists to analyze and quantify results of investigations. ~Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments and are based on scientific principles, models, and theories. ~Analyze alternative explanations and understanding that science advances through legitimate skepticism. ~Use mathematics in all aspects of scientific inquiry. ~Understand that scientific investigations may result in new ideas for study, new methods or procedures for an investigation, or new technologies to improve data collection.	~S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.1.1 Design a simple, controlled experiment (fair test) identifying the independent and dependent variables, how the dependent variable will be measured and which variables will be held constant. ~S5.A.2.1.2 Describe relationships between variables through interpretation of data and observations. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes.	acid rain, pollution, fertilizer, road salt, runoff, erosion	Human and natural factors have an impact on water quality.	Plan and conduct an investigation to determine the quality of water of a local stream (Outdoor Ed.). Collect native species of a local stream and use a dichotomous key to determine if the species collected live in polluted, semi polluted or clean water. Analyze the data and create an argument defending if a local water source is polluted.
3.4.5.A1. Explain how people use tools and techniques to help them do things.	S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes. ~S6.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S6.A.1.1.2 Use evidence to support inferences and claims about an investigation or relationship. ~S6.A.1.1.3 Predict the outcome of an experiment based on previously collected data.	technology, tool, models, mimic, prototype	Tools are an extension of the human body to help solve problems.	Identify tools and techniques that help solve problems.



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3.4.5.C1. Explain how the design process is a purposeful method of planning practical solutions to problems.	S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes. ~S6.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S6.A.1.1.2 Use evidence to support inferences and claims about an investigation or relationship. ~S6.A.1.1.3 Predict the outcome of an experiment based on previously collected data.	technology, models, mimic, prototype	The design process is a dynamic process of steps, can be performed in different sequences and repeated	Use the design process to create solutions tor solving problems.
3.4.5.C2. Describe how design, as a dynamic process of steps, can be performed in different sequences and repeated.	S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes. ~S6.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S6.A.1.1.2 Use evidence to support inferences and claims about an investigation or relationship. ~S6.A.1.1.3 Predict the outcome of an experiment based on previously collected data.	design process, technology, procedures	The design process is a dynamic process of steps, can be performed in different sequences and repeated	Use the design process to create solutions tor solving problems.



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3.4.5.C3. Identify how invention and innovation are creative ways to turn ideas into real things.	S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes. ~S6.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S6.A.1.1.2 Use evidence to support inferences and claims about an investigation or relationship. ~S6.A.1.1.3 Predict the outcome of an experiment based on previously collected data.	design process, mimic, prototype, technology, procedures	The design process is a dynamic process of steps, can be performed in different sequences and repeated	Use the design process to create solutions tor solving problems.
3.4.5.D1. Identify ways to improve a design solution.	S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes. ~S6.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S6.A.1.1.2 Use evidence to support inferences and claims about an investigation or relationship. ~S6.A.1.1.3 Predict the outcome of an experiment based on previously collected data.	design process, mimic, prototype, technology, procedures	Engineers make prototypes to test and improve a solution.	Use the design process to create solutions tor solving problems.



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3.4.5.E1. Identify how technological advances have made it possible to create new devices and to repair or replace certain parts of the human body.	S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes. ~S6.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S6.A.1.1.2 Use evidence to support inferences and claims about an investigation or relationship. ~S6.A.1.1.3 Predict the outcome of an experiment based on previously collected data.	design process, mimic, prototype, technology, prosthetic	Technology has advanced over time and improved the design process to make it more efficient and cost effective.	Identify advances in technology that has improved the quality of life for humans.
3.4.5.E4. Describe how the use of symbols, measurements, and drawings promotes clear communication by providing a common language to express ideas.	S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes. ~S6.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S6.A.1.1.2 Use evidence to support inferences and claims about an investigation or relationship. ~S6.A.1.1.3 Predict the outcome of an experiment based on previously collected data.	blueprints	Clear language, precise measurements and detailed drawings are necessary to express ideas.	Create blueprints and procedures that use symbols, measurements and drawings for clear communication.
3.4.5.B4. Identify how the way people live and work has changed history in terms of technology.		technology	Advances in medicine and technology have changed the way that people live.	Identify advances in technology that has improved the quality of life for humans.



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Grade 5 Science

	Eligible Content	Know	Understand	Do
3.4.5.D2. Use information provided in manuals, protocols, or by experienced people to see and understand how things work.	S5.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship. ~S5.A.1.1.3 Describe how explanations, predictions, and models are developed using evidence. ~S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions. ~S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes. ~S6.A.1.1.1 Explain how certain questions can be answered through scientific inquiry and/or technological design. ~S6.A.1.1.2 Use evidence to support inferences and claims about an investigation or relationship. ~S6.A.1.1.3 Predict the outcome of an experiment based on previously collected data.	reference, verify, procedures	Clear language, precise measurements and detailed drawings are necessary to express ideas.	Identify and use reliable resources to understand scientific and technological concepts.