I AM Performance Level Descriptors (PLDs)
Grade 4 Science

	Content Connector	Below Proficiency	Approaching Proficiency	At Proficiency
Explaining Solutions, Reasoning, and Communicating				
4.ESS.4.a.1	Develop solutions that could be implemented to reduce the impact of humans on the natural environment.	Identify ways humans impact the natural environment.	Recognize solutions that could reduce the impact of humans on the natural environment.	Develop solutions that could be implemented to reduce the impact of humans on the natural environment.
4.ESS.4.a.2	Develop solutions that could be implemented to reduce the impact of the natural environment on humans.	Identify how the natural environment impacts humans.	Recognize solutions that could reduce the impact of the natural environment on humans.	Develop solutions that could be implemented to reduce the impact of the natural environment on humans.
4.LS.2.a.1	Use evidence to explain how a change in the environment can affect a plant or animal's: survival, reproduction, and habitat/relocation.	Identify changes in the environment.	Identify a change in the environment that can affect a plant or animal.	Use evidence to explain how a change in the environment can affect survival, reproduction, and habitat of plants or animals.
4.PS.4.a.1	Describe and investigate the different ways in which energy can be generated and/or converted from one form of energy to another form of energy.	Identify examples of different forms of energy.	Describe or demonstrate different ways in which energy can be generated.	Describe and investigate the different ways energy can be generated and/or converted from one form to another.

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3-5.CD.2.a.1	Understand the pervasiveness of computers and computing in daily life (e.g., voicemail, downloading videos and audio files, microwave ovens, thermostats, wireless Internet, mobile computing devices, GPS systems).	Identify objects that use technology.	Recognize items that use and do not use technology.	Recognize the use of technology in a variety of settings or for a variety of purposes.
3-5.DI.5.a.1	Understand the connections between computer science and other fields.	Name occupations that use technology as a tool.	Use pictures or words to match technology to a specific occupation.	Describe how different technologies are used in a variety of occupations.
3-5.IC.3.a.1	Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and biases that occur in electronic information sources.	Distinguish between a fact and an opinion.	Identify reliable and relevant electronic resources.	Construct a list of appropriate electronic resources for a given topic.
3-5.IC.4.a.1	Understand ethical issues that relate to computers and networks (e.g., equity of access, security, privacy, copyright, plagiarism and intellectual property).	Identify improper or proper use of computers. (e.g., Dos and Don'ts)	Describe how computers can be used for ethical and unethical purposes.	Distinguish between situations where computer use can be either helpful or harmful. (Ethical and non-ethical)

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SEPS.6	Constructing explanations and designing solutions	Match solutions to problems.	Recognize that a given problem has more than one solution.	Construct a viable solution for a given problem.
SEPS.7	Engaging in argument based on evidence	Recognize multiple points of view in an argument.	Identify evidence to support a specific argument.	Engage in argument based on evidence.
SEPS.8	Obtaining, evaluating, and communicating information	Identify a variety of ways to communicate information.	Choose the best form of communication for a specific purpose.	Locate and restate information obtained from a source.(e.g. sources can include a passage, graph, table)
Analyzing, Interpreting, and Computational Thinking				
4.ESS.2.a.1	Identify forms of energy and fuels that are derived from natural resources and describe how their uses affect the environment.	Identify natural resources	Identify forms of energy and fuels that derive from natural resources	Identify forms of energy and fuels that are derived from natural resources and describe how their uses affect the environment.
4.LS.3.a.1	Construct an argument that plants have internal and external structures that function to support survival, growth, behavior, and reproduction in different ecosystems.	Identify external structures of plants	Recognize that plants in different ecosystems have different structures to support survival. (i.e. internal or external structures)	Describe how internal or external structures of plants function to support survival, growth, behavior, or reproduction in different ecosystems.
4.PS.5.a.1	Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.	Identify different forms of energy	Explain that energy can be transferred from place to place by sound, light, heat, or electric currents.	Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, or electric currents.

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3-5.CD.3.a.1	Apply troubleshooting strategies for identifying simple hardware and software problems that may occur during use.	Identify hardware or software (i.e. a mouse is hardware, Google Docs is software)	Recognize a problem with the hardware or software	Apply troubleshooting strategies for identifying simple hardware and software problems that may occur during use.
3-5.E.2.a.1	Given multiple reasonable solutions to a problem, determine which solution best meets the criteria and constraints of the problem.	Recognize a problem	Identify reasonable solutions to a problem	Identify reasonable solutions to a problem, determine which solution best meets the criteria and constraints of the problem.
3-5.IC.2.a.1	Identify the impact of technology (e.g., social networking, cyber bullying, mobile computing and communication, web technologies, cyber security, and virtualization) on personal life and society.	Identify forms of technology	Identify the impacts of technology on personal life and society.	Identify the impact of technology (e.g., social networking, cyber bullying, mobile computing and communication, web technologies, cyber security, and virtualization) on personal life and society.
SEPS.4	Analyzing and interpreting data	List (facts) data (i.e. label data points on a graph.)	Read and describe data	Analyze and interpret data
SEPS.5	Using mathematics and computational thinking	Identify a problem	Use mathematics to solve a problem	Use mathematics and computational thinking (pattern recognition)
Questioning and Modeling				
3-5.DI.1.a.1	Understand and use the basic steps in algorithmic problem solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing).	Identify the basic steps in algorithmic problem solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing).	Use the basic steps in algorithmic problem solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing).	Understand and use the basic steps in algorithmic problem solving (e.g., problem statement and exploration, examination of sample instances, design, implementation, and testing).

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3-5.DI.2.a.1	Develop a simple understanding of an algorithm (e.g., search, sequence of events, or sorting) using computer-free exercises.	List an item in an algorithm (e.g., search, sequence of events, or sorting) using computer-free exercises.	Use an algorithm to solve a problem (e.g., search, sequence of events, or sorting) using computer-free exercises.	Develop a simple understanding of an algorithm (e.g., search, sequence of events, or sorting) using computer-free exercises. (i.e. students create directions for someone to complete a task.)
3-5.E.1.a.1	Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.	Identify a simple problem	Identify a simple problem with the design.	Identify a simple problem with the design of an object that reflects a need or a want.
4.ESS.1.a.1	Investigate how the moon appears to move through the sky and changes day to day, emphasizing the importance of how the moon impacts the Earth, the rising and setting times, and solar and lunar eclipses.	Identify sun and moon	Define day and night	Explain how the moon appears to move through the sky, and changes day to day
3-5.IC.1.a.1	Discuss basic issues related to responsible use of technology and information, and the consequences of inappropriate use.	Recognize inappropriate use of technology	Summarize inappropriate use of technology and the consequences	Discuss basic issues related to responsible use of technology and information, and the consequences of inappropriate use.
3-5.PA.1.a.1	Use technology resources (e.g., calculators, data collection probes, mobile devices, videos, educational software, and web tools) for problem solving and self-directed learning.	Recognize technology resources (e.g., calculators, data collection probes, mobile devices, videos, educational software, and web tools)	Use technology resources (e.g., calculators, data collection probes, mobile devices, videos, educational software, and web tools)	Use technology resources (e.g., calculators, data collection probes, mobile devices, videos, educational software, and web tools) for problem solving

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4.PS.1.a.1	Investigate transportation systems and devices that operate on/in land, water, air, and space.	Recognize transportation systems	Explain transportation systems and devices that operate on/in land, water, air, and space.	Compare and Contrast transportation systems and devices that operate on/in land, water, air, and space.
4.PS.1.a.2	Recognize the forces (lift, drag, friction, thrust, and gravity) that affect the motion of transportation systems and devices.	Recognize a force	Recognize that a force affects motion in a transportation system and devices	Recognize the forces (lift, drag, friction, thrust, and gravity) that affect the motion of transportation systems and devices.
SEPS.1	Asking questions and defining problems	Choose a question that addresses a natural world problem	Choose a question that addresses a natural world problem that can be scientifically tested	Choose and refine a question that addresses a natural world problem that can be scientifically tested
SEPS.2	Developing and using models that illustrate ideas and explanations. Identify and correctly use tools to construct, obtain, and evaluate questions and problems.	Label a model or use tools correctly (i.e. pencil, paper, ruler, calculator)	Construct a model (i.e. drawing, diagrams) to demonstrate understanding using the correct tools	Develop and use models that illustrate ideas and explanations. Identify and correctly use of tools

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Investigating				
4.ESS.3.a.1	Describe how geological forces change the shape of the land suddenly and over time.	Identify changes in the land caused by erosion.	Identify types of erosion.	Identify changes caused by erosion that happen quickly or over time.
4.LS.1.a.1	Observe, analyze, and interpret how offspring are very much, but not exactly, like their parents or one another.	Identify parents and their offspring.	Identify similarities and differences between parents and their offspring.	Describe ways offspring are very much, but not exactly, like their parents.
4.LS.1.a.2	Describe how differences in physical characteristics among individuals in a population may be advantageous for survival and reproduction.	Match living things to their environment, based on their physical characteristics.	Provide examples of physical characteristics that may be advantageous for survival.	Describe how physical characteristics can help a living thing survive and reproduce.
4.PS.2.a.1	Investigate the relationship of the speed of an object to the energy of that object.	Identify how size, weight, or shape of an object affect its motion.	Identify actions that can change the speed of an object (e.g., pushes and pulls).	Explain the relationship of the speed of an object to the energy of that object.
4.PS.3.a.1	Investigate how multiple simple machines work together to perform everyday tasks.	Identify simple machines.	Select simple machines for everyday tasks.	Identify simple machines in everyday objects or contexts.
3-5.E.3.a.1	Consider results of an investigation, including failure points, and determine which variables affected the outcome.	Identify the variables of an investigation.	Recognize the effect of variables in an investigation.	Identify the variables and failure points that affect the results of an investigation.
3-5.E.3.a.2	Based on the results of investigations, determine whether aspect(s) of a model or prototype can be improved.	Identify whether or not a model needs improvement.	Select ways to improve a model.	Apply the results of investigations to determine which parts of a model or prototype can be improved.
SEPS.3	Planning and conducting investigations	Identify steps in an investigation.	Order the steps in an investigation.	Execute an investigation.