

SCIENCE PERFORMANCE LEVEL DESCRIPTORS – GRADES K-2

ADVANCED

A 2nd grade student performing at Advanced effectively, consistently, and appropriately applies science and engineering practices to explain phenomena and design solutions to problems in the natural and the designed world. The student evaluates models and information and revises arguments and explanations by analyzing patterns in data, cause and effect relationships, and system interactions. The student conducts investigations to collect data in order to answer questions and uses criteria and constraints to evaluate solutions to a problem. The student uses mathematical and computational thinking and scientific reasoning to analyze and interpret data in order to evaluate arguments and explanations about cause and effect relationships.

PROFICIENT

A 2nd grade student performing at Proficient effectively applies science and engineering practices to explain phenomena and design solutions to problems in the natural and the designed world. The student develops and uses models and information to construct arguments and explanations and to identify and describe patterns in data and system characteristics. The student asks questions that can be investigated and designs solutions to problems that meet given criteria and constraints. The student uses data and mathematical and computational thinking to construct arguments and explanations about cause and effect relationships.

BASIC

A 2nd grade student performing at Basic applies, with support, science and engineering practices to explain phenomena and design solutions to problems in the natural and the designed world. The student uses models and information to support arguments and explanations, to identify patterns in data, and to describe relationships among parts of systems. The student identifies the data to collect in an investigation in order to answer questions or to describe possible solutions to problems. The student uses data and basic computational thinking to support arguments and explanations about cause and effect relationships.

BELOW BASIC

A 2nd grade student performing at Below Basic seldom applies science and engineering practices to explain phenomena and design solutions to problems in the natural and the designed world. The student occasionally identifies models and information to identify patterns in data, and to describe parts of systems. The student infrequently recognizes trends in the data collected during an investigation in order to answer questions or to identify possible solutions to problems. The student occasionally uses data and basic computational thinking to explain the cause and effect relationships.

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Physical Science	Below Basic A student who has reached the level of <i>Below Basic</i> level is to successfully address some, but not all, of the following:	Basic A student who has reached the level of <i>Basic</i> is able to successfully address some, but not all, of the following:	Proficient A student who has reached the level of <i>Proficient</i> is able to successfully address some, but not all, of the following:	Advanced A student who has reached the level of <i>Advanced</i> is able to successfully address some, but not all, of the following:
Matter and Its Interactions	Identify size, shape, color, or mass of objects.	Identify size, shape, color, and mass of objects.	Describe observations of size, shape, color, or mass of objects.	Evaluate and communicate observations of size, shape, color, and mass of objects.
	Identify different materials based on their physical properties.	Classify different materials based on their observable properties.	Investigate different materials to describe their observable properties.	Plan and conduct an investigation to produce evidence to describe and classify different materials based on their observable properties.
	Identify different properties of materials.	Describe which materials have properties that are best for an intended purpose.	Collect data from an investigation to determine which materials have properties that are best for an intended purpose.	Analyze data from an investigation to determine which materials have properties that are best for an intended purpose.
Motion Stability: Forces and Interactions	Identify a push or pull.	Identify how a push or pull changes the motion of an object.	Investigate how different strengths or different directions of pushes or pulls affect an object's motion.	Develop and carry out a plan to investigate how different strengths or different directions of pushes or pulls affect an object's motion.
	Identify how force or mass change the motion of an object.	Describe how force or mass change the motion of an object.	Investigate how the motion of an object can change by an applied force or mass.	Analyze data to provide evidence for how the motion of an object can change by an applied force or mass.
	Identify a change in motion of an object.	Describe how an object has changed motion.	Use data to describe how the motion of an object has changed.	Analyze observational data to communicate the change in motion of an object.

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Energy	Identify the source of sunlight.	Describe the effects of sunlight.	Use data to describe how sunlight affects Earth's surface.	Collect and analyze data to describe how sunlight affects Earth's surface.
	Identify a source of energy.	Identify a source of energy that causes an increase in temperature of an object.	Make observations to describe the source of energy that causes an increase in temperature of an object.	Ask questions and use observations to provide evidence of an energy source that causes an increase in temperature of an object.
	Identify a way to reduce the warming effect of sunlight on an area.	Describe a structure that will reduce the warming effect of sunlight on an area.	Develop a model to describe a structure that will reduce the warming effect of sunlight on an area.	Generate and compare multiple solutions to reduce the warming effect of sunlight on an area.
Waves and Their Applications in Technologies for Information Transfer	Recognize some materials vibrate.	Describe that vibrating materials can make sound, and that sound can make materials vibrate.	Record information from observations of different materials to provide evidence that vibrating materials can make sound, and that sound can make materials vibrate.	Plan and conduct an investigation of different materials to provide evidence that vibrating materials can make sound, and that sound can make materials vibrate.
	Identify a change in vibration creates a change in sound.	Describe how a change in vibration creates a change in sound.	Investigate how vibrations can be changed to create different sounds.	Conduct an investigation to provide evidence for how vibrations can be changed to create different sounds.
	Identify devices that use light or sound.	Identify materials used to design devices that use light or sound.	Construct an explanation for a design of a device that uses light or sound to solve a problem.	Communicate a design and/or solution for a device that uses light or sound to solve a problem.

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Life Science	Below Basic A student who has reached the level of <i>Below Basic</i> level is to successfully address some, but not all, of the following:	Basic A student who has reached the level of <i>Basic</i> is able to successfully address some, but not all, of the following:	Proficient A student who has reached the level of <i>Proficient</i> is able to successfully address some, but not all, of the following:	Advanced A student who has reached the level of <i>Advanced</i> is able to successfully address some, but not all, of the following:
From Molecules to Organisms: Structure and Processes	Identify how plants and/or animals use their external parts to grow and survive.	Describe how plants and/or animals use their external parts to grow and survive.	Make observations to define a simple human problem through mimicking how plants and/or animals use their external parts to grow and survive.	Use observations and materials to define a simple human problem that can be solved through mimicking how plants and/or animals use their external parts to grow and survive.
	Identify things plants or animals need to survive.	Describe things plants and animals need to survive.	Make observations to describe patterns between the needs of plants and animals.	Collect, organize, and classify observations to explain patterns between the needs of plants and animals.
Ecosystems: Interactions, Energy, and Dynamics	Identify the needs of plants in order to grow.	Describe the optimal growing conditions for plants.	Collect evidence from an investigation to describe the optimal growing conditions for plants.	Use evidence from an investigation to explain the optimal growing conditions for plants.
	Recognize that seeds may be found in various locations.	Describe the importance of animals in their specialized role of pollination or seed dispersal.	Develop a model to describe the function of animals in seed dispersal and pollination.	Analyze evidence from a model to explain the function of animals in seed dispersal and pollination.
Heredity : Inheritance and Variation of Traits	Identify similarities between young and their parents.	Identify similarities and differences between young and their parents.	Make qualitative observations to compare and contrast young and their parents.	Make observations and collect evidence to compare and contrast young and their parents.

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Earth and Space Science	Below Basic A student who has reached the level of <i>Below Basic</i> level is to successfully address some, but not all, of the following:	Basic A student who has reached the level of <i>Basic</i> is able to successfully address some, but not all, of the following:	Proficient A student who has reached the level of <i>Proficient</i> is able to successfully address some, but not all, of the following:	Advanced A student who has reached the level of <i>Advanced</i> is able to successfully address some, but not all, of the following:
Earth's Place in the Universe	Identify the location of the sun, moon, or stars in the sky.	Identify the location of the sun, moon, and stars in the sky.	Make observations of the location of the sun, moon, and stars in the sky over time.	Communicate observations to model the presence of the sun, moon, and stars in the sky over time.
	Recognize patterns that occur in the sky.	Describe patterns among the sun, moon, and stars.	Make observations that can be used to make comparisons.	Use data from observations to make predictions of the sun, moon, and stars.
	Recognize the amount of daylight changes at different times of the year.	Identify the amount of light available during each season.	Use observations to describe the amount of light available during each season.	Collect and analyze observations to generalize about the amount of daylight during different seasons.
	Recognize that Earth has changed.	Describe how the Earth has changed over time.	Make observations and interpret data to support examples of how the earth has changed.	Construct an explanation using evidence from several sources to describe how the earth has changed.
Earth's Systems	Recognize examples of how wind or water can change land.	Describe a solution to slow wind or water from changing the shape of the land.	Compare multiple explanations to slow wind or water from changing the shape of the land.	Construct an explanation using evidence to compare multiple explanations to slow wind or water from changing the shape of the land.
	Identify the different shapes or kinds of land and bodies of water in an area.	Describe the different shapes and kinds of lands and bodies of water in an area.	Use a model to describe the different shapes or kinds of lands and bodies of water in an area.	Use evidence from a model to explain the different shapes and kinds of lands and bodies of water in an area.
	Identify where water is found on Earth.	Identify where water is found on Earth and that it can be solid or liquid.	Obtain information from various sources to identify where water is found on Earth and that it can be solid or liquid.	Communicate findings from various sources to describe where water is found on Earth and that it can be solid or liquid.

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	Identify local weather conditions.	Describe local weather conditions.	Use observations to describe weather conditions and patterns over time.	Analyze observations to explain weather conditions and patterns over time.
	Identify weather data and weather phenomena.	Identify patterns among weather data and weather phenomena.	Make observations and collect data about local weather conditions.	Use observations to identify patterns and/or relationships in data of weather phenomena.
	Identify the needs of plants and animals.	Describe how the needs of plants and animals can drive change in the environment they live.	Use evidence to describe how the needs of plants and animals can drive change in the environment they live.	Use evidence to construct an argument for how the needs of plants and animals can drive change in the environment they live.
Earth and Human Activity	Identify places plants or animals may live.	Describe the places plants and animals may live.	Identify a model showing a relationship between the needs of plants and animals and the places they live.	Develop and use models to show a relationship between the needs of plants and animals and the places they live.
	Recognize that humans impact the environment.	Describe a human impact on the environment.	Identify a solution to reduce human impact on the environment.	Explain a solution to reduce human impact on the environment.

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Engineering and Technology Science	Below Basic A student who has reached the level of <i>Below Basic</i> level is to successfully address some, but not all, of the following:	Basic A student who has reached the level of <i>Basic</i> is able to successfully address some, but not all, of the following:	Proficient A student who has reached the level of <i>Proficient</i> is able to successfully address some, but not all, of the following:	Advanced A student who has reached the level of <i>Advanced</i> is able to successfully address some, but not all, of the following:
Engineering Design	Identify a simple problem that can be solved by developing a new object or tool.	Describe a simple problem and gather information about a situation people want to change.	Communicate information or design ideas and/or solutions about a situation people want to change.	Communicate information or design ideas and/or solutions about a situation people want to change through the development of a new or improved object or tool.
	Identify how the shape of an object helps it function.	Describe how the shape of an object helps it function to solve a given problem.	Develop a model to describe how the shape of an object helps it function to solve a given problem.	Analyze a model to explain how the shape of an object helps it function to solve a given problem.
	Identify the strengths or weaknesses of two objects.	Identify the strengths and weaknesses of how two objects perform.	Make and record observations to compare the strengths and weaknesses of how two objects perform.	Analyze data to provide evidence to predict the strengths and weaknesses of how two objects perform.