Science Descriptor Links to General Standards

Office of Superintendent of Public Instruction
AUGUST 2018

SCIENCE DESCRIPTOR LINKS TO GENERAL STANDARDS

The Science domains to which each descriptor is linked are identified in brackets at the end of each descriptor in the following tables. The descriptors are ordered as they will appear on the reports. Use the information below as a key for the Strands found in the tables that follow:

ETS – Engineering, Technology, and Application of Science

LS – Life Sciences

PS – Physical Sciences

ESS– Earth and Space Sciences

Science Grade 5

Grade 5 students performing at a Level 4 (Exceeds Standards) on the alternate assessment, in addition to Level 3 skills:

- Define a simple design problem for a given want or need, identify specific constraints on solutions AND use specific criteria to evaluate a successful solution. *[3-5-ETS 1-1]*
- Develop a model to predict how a disruption (event) to a life cycle stage could impact the life cycle patterns of plants and animals. *[3-LS1-1]*
- Develop AND use a model to describe that matter (objects) is made of particles too small to be seen. *[5-PS1-1]*
- Ask a question to determine the cause AND effect relationships of electric or magnetic interactions between two objects that do not touch. *[3-PS2-3]*
- Organize and graphically represent given data to describe patterns on daily changes in shadows, day and night, or seasonal appearances of some stars AND identify the cause of the patterns as Earth's rotation on its axis or Earth's orbit around the sun. *[5-ESS1-2]*

Grade 5 students performing at a Level 3 (Met Standards) on the alternate assessment, in addition to Level 2 skills:

- Define a simple design problem for a given want or need and identify specific criteria for success OR identify specific constraints on solutions. *[3-5-ETS 1-1]*
- Develop models to describe life cycle patterns of plants and animals. *[3-LS1-1]*
- Use a model to describe that matter (objects) is made of particles too small to be seen. *[5-PS1-1]*
- Ask a question to determine a cause relationship OR an effect relationship of electric or magnetic interactions between two objects that do not touch. *[3-PS2-3]*
- Organize given data and describe patterns in the data on daily changes in shadows, day and night, OR seasonal appearances of some stars. *[5-ESS1-2]*

Grade 5 students performing at a Level 2 (Nearly Met Standards) on the alternate assessment, in addition to Level 1 skills:

- Identify a simple design problem for a given want or need. *[3-5-ETS1-1]*
- Use a model to complete the life cycle patterns of plants and animals. *[3-LS1-1]*
- Identify a model that shows matter (objects) is made of particles too small to be seen. *[5-PS1-1]*
- Identify a question about the cause of a magnetic interaction between two objects that do not touch. *[3-PS2-3]*
- Identify a graph that represents given data of daily changes in shadows or day and night, AND identify patterns in the data. *[5-ESS1-2]*

Grade 5 students performing at a Level 1 (Has Not Met Standards) on the alternate assessment:

- Recognize that there is a simple design problem. *[3-5-ETS1-1]*
- Identify the stages in the basic life cycle of a plant or animal. *[3-LS1-1]*
- Identify in a model, the particles of matter (objects) that are too small to be seen. *[5-PS1-1]*
- Identify an object that is magnetic. *[3-PS2-3]*
- Identify representations of changes in shadows during the day. *[5-ESS1-2]*

Science Grade 8

Grade 8 students performing at a Level 4 (Exceeds Standards) on the alternate assessment, in addition to Level 3 skills:

- Develop a design solution that meets the criteria for success and evaluate its effectiveness. *[MS-ETS1-3]*
- Organize and interpret data to provide evidence for the effects of resource availability on organisms and/or populations in an ecosystem. *[MS-LS2-1]*
- Design, build, and test a device that increases or decreases the transfer of thermal (heat) energy. *[MS-PS3-3]*
- Develop a model to describe and predict patterns of moon phases, eclipses, or seasons. *[MS-ESS1-1]*
- Develop and use a model to demonstrate and/or describe how unequal heating and the rotation of the Earth affect weather and climate systems. *[MS-ESS2-6]*

Grade 8 students performing at a Level 3 (Met Standards) on the alternate assessment, in addition to Level 2 skills:

- Organize and interpret quantitative data using graphs, charts, and/or tables, to select characteristics of a given solution(s) that can better meet criteria for success. *[MS-ETS1-3]*
- Organize and interpret data using at least two of the following: graphs, charts, or tables, to describe a cause and effect relationship of resource availability on organisms and/or populations in an ecosystem. *[MS-LS2-1]*
- Build and test a device that increases or decreases the transfer of thermal (heat) energy. *[MS-PS3-3]*
- Use a model to show how the motions of the Earth-moon-sun system cause at least one of the following: moon phases, eclipses, or seasons. *[MS-ESS1-1]*
- Use a model to demonstrate and/or describe how unequal heating causes different weather and climates in different areas on Earth. *[MS-ESS2-6]*

Grade 8 students performing at a Level 2 (Nearly Met Standards) on the alternate assessment, in addition to Level 1 skills:

- Identify design solutions that better meet the criteria for success using given organized data. *[MS-ETS1-3]*
- Identify the effect of resource availability on organisms and/or populations based on given data organized in at least two of the following ways: graphs, charts, or tables. *[MS-LS2-1]*
- Identify whether a given device's intended purpose is to increase or decrease the transfer of thermal (heat) energy. *[MS-PS3-3]*
- Identify parts and/or a pattern of a model of moon phases, eclipses, and/or seasons. *[MS-ESS1-1]*
- Identify parts of a model (factors) that interact and cause different weather and climates in different areas on Earth. *[MS-ESS2-6]*

Grade 8 students performing at a Level 1 (Has Not Met Standards) on the alternate assessment:

- Identify similarities and differences in a design solution. *[MS-ETS1-3]*
- Identify the effect of resource availability on an organism based on given data organized in one of the following ways: graph, chart, or table. *[MS-LS2-1]*
- Identify whether a given device increases or decreases the thermal (heat) energy of an object (matter). *[MS-PS3-3]*
- Identify a part of a model that shows moon phases, eclipses, or seasons. *[MS-ESS1-1]*
- Identify parts of a model (factors) that cause different weather on Earth. *[MS-ESS2-6]*

Science High School

High School students performing at a Level 4 (Exceeded Standards) on the alternate assessment, in addition to Level 3 skills:

- Design solutions to multiple smaller problems that make up a larger real-world problem and describe how the combined solutions to the smaller problems solve the larger real-world problem. *[HS ETS1-2]*
- Develop and use a model to illustrate relationships between the carbon cycle and inputs and outputs of photosynthesis and cellular respiration. *[HS LS2-5]*
- Use evidence to explain how changing the temperature or concentration of the reacting particles affects the rate at which a reaction occurs. *[HSPS1-5]*
- Organize and interpret data to make a claim about how a change to Earth's surface causes another Earth system to become more stable or less stable. *[HS ESS2-2]*
- Describe how the student's technological solution to a problem reduces a human impact on natural systems and meets given criteria and constraints. *[HS ESS3-4]*

High School students performing at a Level 3 (Met Standards) on the alternate assessment, in addition to Level 2 skills:

- Break down a real-world problem into smaller problems and design solutions that meet given criteria for each smaller problem. *[HS ETS 1-2]*
- Describe the relationships between the carbon cycle in a model and inputs and outputs of photosynthesis and cellular respiration. *[HS LS2-5]*
- Use evidence to explain how a reaction rate is affected with a given change in the temperature or in the concentration of reacting particles in the given reaction. *[HS PS1-5]*
- Organize and interpret data to make a claim about the impact of a change to Earth's surface on another Earth system. *[HS ESS2-2]*
- Use data to refine a technological solution that reduces a human impact on natural systems and meets given criteria and constraints. *[HS ESS3-4]*

High School students performing at a Level 2 (Nearly Met Standards) on the alternate assessment, in addition to Level 1 skills:

- Break down a real-world problem into smaller problems and identify design solutions that meet given criteria for each smaller problem. *[HS ETS 1-2]*
- Identify the inputs and outputs of photosynthesis and cellular respiration, as represented in a model. *[HS LS2-5]*
- Use evidence to identify whether changing temperature or concentration of the reacting particles affects the reaction rate of a given reaction. *[HS PS1-5]*
- Interpret given data and identify a claim about the impact of a change to Earth's surface on another Earth system. *[HS ESS2-2]*
- Use data to identify whether a technological solution reduces a human impact on natural systems. *[HS ESS3-4]*

High School students performing at a Level 1 (Has Not Met Standards) on the alternate assessment:

- Identify a smaller problem that is a part of a larger real-world problem OR a design solution for a smaller problem that is part of a larger real-world problem. *[HS ETS 1-2]*
- Identify an input OR output of photosynthesis or cellular respiration. *[HS LS2-5]*
- Identify whether changing the temperature of a reaction had an effect on the reaction rate. *[HS PS1-5]*
- Identify a claim about the impact of a change to Earth's surface on another Earth system. *[HS ESS2-2]*
- Identify a technological solution that reduced a human impact on natural systems. *[HS ESS3-4]*