Minnesota Department of Education

Science MTAS
Achievement Level Descriptors
Grades 5, 8 & High School

Grade 5

Does Not Meet the Extended Standards (Grade 5)

Students at this level succeed at a limited number of the most fundamental skills on the extended standards of the Minnesota Academic Standards in Science. Given extensive verbal, visual, and/or tactile supports which provide extra context about the task to be completed, the students may demonstrate skills that include:

- Recognize tools used in scientific investigations.
- Identify common solids and liquids.
- Know forms of precipitation such as snow and rain.
- Recognize materials that can be recycled.
- Name common plants and animals
- Know some of the most common methods of personal hygiene that prevent illness.

Partially Meets the Extended Standards (Grade 5)

Students at this level succeed at some of the skills on the extended standards of the Minnesota Academic Standards in Science. Given frequent verbal, visual, and/or tactile supports which provide extra context about the task to be completed, the students may demonstrate skills that include:

- Identify the purpose of a tool used in scientific investigations.
- Classify examples of solids, liquids, and gases.
- Identify where precipitation occurs within the water cycle.
- Recognize some examples of recycling, reducing, and reusing materials.
- Sort plants and/or animals based on their physical characteristics.
- Know some methods of personal hygiene that contribute to health.

Meets the Extended Standards (Grade 5)

Students at this level succeed at many of the skills on the extended standards of the Minnesota Academic Standards in Science. Given occasional verbal, visual, and/or tactile supports which provide extra context about the task to be completed, students may demonstrate skills that include:

- Select the tool appropriate for a given scientific investigation.
- Know how temperature affects changes in states of matter (solid to liquid, liquid to gas, liquid to solid).
- Distinguish precipitation and collection within a water cycle.
- Identify recycling as a solution to the environmental problem of solid waste.
- Classify plants and animals based on physical characteristics.
- Identify several methods of personal hygiene that help prevent germs from entering the body.

Exceeds the Extended Standards (Grade 5)

Students at this level succeed at most of the skills on the extended standards of the Minnesota Academic Standards in Science. Given little or no verbal, visual, and/or tactile supports which provide extra context about the task to be completed, students may demonstrate skills that include:

- Select the tools appropriate for scientific investigations in a variety of contexts.
- Understand the role of temperature in changes in states of matter (solid to liquid, liquid to gas, liquid to solid, and gas to liquid).
- Know that the amount of precipitation impacts the amount of collection within a water cycle.
- Identify recycling, reducing, and reusing as appropriate solutions to the environmental problem of solid waste.
- Classify multiple characteristics of plants and animals.
- Understand how methods of personal hygiene contribute to health.

Grade 8

Does Not Meet the Extended Standards (Grade 8)

Students at this level succeed at a limited number of the most fundamental skills on the extended standards of the Minnesota Academic Standards in Science. Given extensive verbal, visual, and/or tactile supports which provide extra context about the task to be completed, the students may demonstrate skills that include:

- Identify common engineered systems.
- Recognize common examples of solids, liquids, or gases.
- Recognize a push or pull as a force.
- Understand that landforms can change.
- Recognize that the human body contains organs.
- Know that diseases exist.

Partially Meets the Extended Standards (Grade 8)

Students at this level succeed at some of the skills on the extended standards of the Minnesota Academic Standards in Science. Given frequent verbal, visual, and/or tactile supports which provide extra context about the task to be completed, the students may demonstrate skills that include:

- Identify ways that people use common engineered systems.
- Recognize when matter has undergone a physical change.
- Understand that forces cause a change in motion.
- Identify how weathering changes landforms.
- Understand that the human body contains organs that have different functions.
- Recognize that diseases are caused by organisms.

Meets the Extended Standards (Grade 8)

Students at this level succeed at many of the skills on the extended standards of the Minnesota Academic Standards in Science. Given occasional verbal, visual, and/or tactile supports which provide extra context about the task to be completed, the students may demonstrate skills that include:

- Identify common engineered systems that benefit daily life.
- Recognize when matter has undergone a chemical change.
- Show that an object will move in the direction of an applied force.
- Understand that an object may change speed when a force is applied.
- Identify the effects of weathering, erosion, and deposition on landforms.
- Identify organs in the respiratory, circulatory, and digestive systems (e.g., lungs, stomach, heart).
- Understand that some organisms cause diseases in humans.

Exceeds the Extended Standards (Grade 8)

Students at this level succeed at most of the skills on the extended standards of the Minnesota Academic Standards in Science. Given little or no verbal, visual, and/or tactile supports which provide extra context about the task to be completed, the students may demonstrate skills that include:

- Identify multiple ways that common engineered systems benefit daily life.
- Identify property characteristics of matter that have undergone a chemical change.
- Understand that unseen forces, such as friction or gravity, can change an object's speed or direction.
- Classify forces as balanced and unbalanced.
- Identify the effects of weathering, erosion, and deposition on landforms over time.
- Understand the functions of organs in the respiratory, circulatory, and digestive systems (e.g., lungs, stomach, heart).
- Recognize that the human body may appear healthy although it contains disease-causing organisms.

Grade High School

Does Not Meet the Extended Standards (HS)

Students at this level succeed at a limited number of the most fundamental skills on the extended standards of the Minnesota Academic Standards in Science. Given extensive verbal, visual, and/or tactile supports which provide extra context about the task to be completed, the students may demonstrate skills that include:

- Recognize a scientific experiment.
- Identify data within an experiment.
- Recognize that animals need to eat food.
- Know that an animal can impact its environment.
- Distinguish between two different familiar animals.
- Understand that plants and animals need water to survive.
- Recognize that human activity can impact plants and animals.

Partially Meets the Extended Standards (HS)

Students at this level succeed at some of the skills on the extended standards of the Minnesota Academic Standards in Science. Given frequent verbal, visual, and/or tactile supports which provide extra context about the task to be completed, the students may demonstrate skills that include:

- Identify a scientific hypothesis.
- Understand that data can be useful in sharing findings from an experiment.
- Know that animals obtain energy by eating food.
- Identify the mouth as a structure used for eating food.
- Understand that animals may be introduced to an ecosystem.
- Match parent organisms to their offspring.
- Recognize that human activity can have a positive or negative effect on the environment.

Meets the Extended Standards (HS)

Students at this level succeed at many of the skills on the extended standards of the Minnesota Academic Standards in Science. Given occasional verbal, visual, and/or tactile supports which provide extra context about the task to be completed, the students may demonstrate skills that include:

- Know that a hypothesis can guide a scientific investigation.
- Identify relevant data collection and a conclusion in a scientific experiment.
- Understand that plants and animals use different structures to obtain energy.
- Recognize that structures used to obtain energy may include mouths for animals and leaves for plants.
- Recognize that a new species can change an ecosystem.
- Identify traits that are transmitted from parents to offspring.
- Know that the ability to get food will affect the survival rate of animals.
- Determine risks and benefits of human activity to the environment and the community.

Exceeds the Extended Standards (HS)

Students at this level succeed at most of the skills on the extended standards of the Minnesota Academic Standards in Science. Given little or no verbal, visual, and/or tactile supports which provide extra context about the task to be completed, the students may demonstrate skills that include:

- Demonstrate that scientific experiments can produce different data and different conclusions.
- Identify the different ways that animals and plants obtain energy through the use of specialized structures.
- Recognize that the ability to get food, water, and shelter may affect the survival rate of organisms.
- Understand how specialized body structures may help organisms survive.
- Identify the harmful effect(s) that a new species can have on an ecosystem.
- Identify risks and benefits of human activity on the environment.