

Nebraska State Accountability-Science (NeSA-S) Performance Level Descriptors

Grade 5

Below the Standards

Overall student performance in science reflects *unsatisfactory* performance on the standards and *insufficient* understanding of the content at fifth grade. A student scoring at the Below the Standards level *inconsistently* draws on a broad range of scientific knowledge and skills in the areas of inquiry, physical, life, and Earth/space sciences.

A student at this level ***inconsistently***:

- Identifies testable questions.
- Identifies factors that may impact an investigation.
- Identifies appropriate selection and use of scientific equipment.
- Develops a reasonable explanation based on collected data.
- Identifies physical properties of matter.
- Identifies forces on motion.
- Recognizes that energy transfers.
- Identifies characteristics of living and nonliving things.
- Identifies inherited characteristics and life cycle of living things.
- Identifies components of an ecosystem.
- Identifies adaptations made by plants and animals to survive.
- Identifies changes of objects in the sky.
- Identifies Earth's materials and structure.
- Identifies energy sources on Earth.
- Identifies changes in Earth's surface.

Meets the Standards

Overall student performance in science reflects *satisfactory* performance on the standards and *sufficient* understanding of the content at fifth grade. A student scoring at the Meets the Standards level *generally* draws on a broad range of scientific knowledge and skills in the areas of inquiry, physical, life, and Earth/space sciences.

A student at this level ***generally***:

- Identifies testable questions.
- Identifies factors that may impact an investigation.
- Identifies appropriate selection and use of scientific equipment.
- Develops a reasonable explanation based on collected data.
- Describe the physical properties of matter and its changes.
- Identifies the influence of forces on motion.
- Identifies signs of energy transfer.
- Compares the characteristics of living and nonliving things.
- Identifies variations of inherited characteristics and life cycles.
- Describes relationships within an ecosystem.
- Describes changes in organisms over time.
- Describes characteristics, patterns, and changes of objects in the sky.
- Describes Earth's materials, structure, and processes.
- Describes the effects of energy changes on Earth.
- Describes changes in Earth's surface.

Exceeds the Standards

Overall student performance in science reflects *high academic* performance on the standards and *a thorough* understanding of the content at fifth grade. A student scoring at the Exceeds the Standards level *consistently* draws on a broad range of scientific knowledge and skills in the areas of inquiry, physical, life, and Earth/space sciences.

A student at this level ***consistently***:

- Identifies testable questions.
- Identifies factors that may impact an investigation.
- Identifies appropriate selection and use of scientific equipment.
- Develops a reasonable explanation based on collected data.
- Compares physical properties of matter.
- Compares the influence of forces on motion.
- Compares energy transfers.
- Compares how parts of organisms function to meet basic needs.
- Compares variations of inherited characteristics and life cycles.
- Compares relationships within an ecosystem.
- Compares changes in organisms over time.
- Compares characteristics, patterns, and changes of objects in the sky.
- Compares Earth's materials, structure, and processes.
- Compares the effects of energy changes on Earth.
- Compares changes in Earth's surface.

Nebraska State Accountability-Science (NeSA-S) Performance Level Descriptors

Grade 8

Below the Standards

Overall student performance in science reflects *unsatisfactory* performance on the standards and *insufficient* understanding of the content at eighth grade. A student scoring at the Below the Standards level *inconsistently* draws on a broad range of scientific knowledge and skills in the areas of inquiry, physical, life, and Earth/space sciences.

A student at this level *inconsistently*:

- Identifies testable questions that lead to predictions and scientific investigations.
- Identifies and controls variables that impact a scientific investigation.
- Identifies appropriate selection and use of scientific equipment.
- Develops logical inferences based on collected data and accounts for non-relevant information.
- Analyzes investigations for quality, accuracy, and relevancy.
- Identifies the particulate nature of matter.
- Identifies forces and motion.
- Identifies energy systems.
- Identifies structure of living organisms.
- Identifies types of reproduction.
- Identifies components of an ecosystem.
- Identifies characteristic of organisms.
- Identifies components of the solar system.
- Identifies Earth's structure and processes.
- Identifies energy in Earth systems.
- Identifies changes in Earth over time.

Meets the Standards

Overall student performance in science reflects *satisfactory* performance on the standards and *sufficient* understanding of the content at eighth grade. A student scoring at the Meets the Standards level *generally* draws on a broad range of scientific knowledge and skills in the areas of inquiry, physical, life, and Earth/space sciences.

A student at this level *generally*:

- Identifies testable questions that lead to predictions and scientific investigations.
- Identifies and controls variables that impact a scientific investigation.
- Identifies appropriate selection and use of scientific equipment.
- Develops logical inferences based on collected data and accounts for non-relevant information.
- Analyzes investigations for quality, accuracy, and relevancy.
- Describes the particulate nature of matter including physical and chemical interactions.
- Describes forces and motion.
- Describes how energy systems and matter interact.
- Describes the structure and function of living organisms.
- Describes the relationship between reproduction and heredity.
- Describes populations and ecosystems.
- Identifies characteristics of organisms that help them survive.
- Describes Earth and the solar system.
- Describes Earth's structure, systems, and processes.
- Describes energy in Earth's system.
- Describes changes in Earth over time.

Exceeds the Standards

Overall student performance in science reflects *high academic* performance on the standards and *a thorough* understanding of the content at eighth grade. A student scoring at the Exceeds the Standards level *consistently* draws on a broad range of scientific knowledge and skills in the areas of inquiry, physical, life, and Earth/space sciences.

A student at this level *consistently*:

- Identifies testable questions that lead to predictions and scientific investigations.
- Identifies and controls variables that impact a scientific investigation.
- Identifies appropriate selection and use of scientific equipment.
- Develops logical inferences based on collected data and accounts for non-relevant information.
- Analyzes investigations for quality, accuracy, and relevancy.
- Describes the particulate nature of matter by comparing and contrasting physical and chemical interactions.
- Predicts the impact of balanced and unbalanced forces acting on objects.
- Evaluates interactions between energy and matter.
- Evaluates the interactions between structure and function of living organisms.
- Describes the relationship between reproduction and heredity.
- Analyzes interactions between populations and ecosystems.
- Evaluates survival of organisms based on characteristics.
- Analyzes interactions between Earth and the solar system.
- Analyzes interactions among Earth's structure, systems, and processes.
- Analyzes energy's impact on Earth systems.
- Analyzes changes in Earth over time

Nebraska State Accountability-Science (NeSA-S) Performance Level Descriptors

Grade 11

Below the Standards

Overall student performance in science reflects *unsatisfactory* performance on the standards and *insufficient* understanding of the content at eleventh grade. A student scoring at the Below the Standards level *inconsistently* draws on a broad range of scientific knowledge and skills in the areas of inquiry, physical, life, and Earth/space sciences.

A student at this level ***inconsistently***:

- Identifies a testable hypothesis that guides a scientific investigation.
- Identifies and manages variables and constraints.
- Identifies appropriate selection and use of scientific equipment.
- Analyzes and interprets data and evaluates models and explanations.
- Evaluates scientific investigations.
- Identifies matter in terms of its structure and composition.
- Identifies field forces.
- Identifies energy systems in matter.
- Identifies organic molecules, sub-cellular structures, and cellular functions.
- Identifies DNA and its role in heredity.
- Identifies the flow of energy between organisms and their environment.
- Identifies types of adaptations necessary for survival.
- Identifies components of the universe.
- Identifies the relationships between Earth's structure and processes.
- Identifies relationships between sources of energy and Earth's systems.
- Identifies the Law of Superposition.

Meets the Standards

Overall student performance in science reflects *satisfactory* performance on the standards and *sufficient* understanding of the content at eleventh grade. A student scoring at the Meets the Standards level *generally* draws on a broad range of scientific knowledge and skills in the areas of inquiry, physical, life, and Earth/space sciences.

A student at this level ***generally***:

- Identifies a testable hypothesis that guides a scientific investigation.
- Identifies and manages variables and constraints.
- Identifies appropriate selection and use of scientific equipment.
- Analyzes and interprets data and evaluates models and explanations.
- Evaluates scientific investigations.
- Describes matter in terms of its structure, composition, and conservation.
- Describes the nature of field forces and their interactions with matter.
- Describes energy systems relating to the conservation and interaction of energy and matter.
- Describes the chemical basis of the growth, development, and maintenance of cells.
- Describes the molecular basis of reproduction and heredity.
- Describes, on a molecular level, the cycling of matter and the flow of energy between organisms and their environment.
- Describes the theory of biological evolution.
- Describes the known universe.
- Investigates the relationships among Earth's structure, systems, and processes.
- Describes the relationships among the sources of energy and their effects on Earth's systems.
- Explains the history and evolution of Earth.

Exceeds the Standards

Overall student performance in science reflects *high academic* performance on the standards and *a thorough* understanding of the content at eleventh grade. A student scoring at the Exceeds the Standards level *consistently* draws on a broad range of scientific knowledge and skills in the areas of inquiry, physical, life, and Earth/space sciences.

A student at this level ***consistently***:

- Identifies a testable hypothesis that guides a scientific investigation.
- Identifies and manages variables and constraints.
- Identifies appropriate selection and use of scientific equipment.
- Analyzes and interprets data and evaluates models and explanations.
- Evaluates scientific investigations.
- Analyzes structure, composition, and conservation of matter.
- Analyzes interactions between field forces and matter.
- Analyzes interactions between energy systems and matter.
- Analyzes the chemical basis of the growth, development, and maintenance of cells.
- Analyzes the molecular basis of reproduction and heredity.
- Analyzes the cycling of matter and the flow of energy between organisms and their environment.
- Analyzes the theory of biological evolution and the diversity of life.
- Analyzes the formation of the universe.
- Analyzes the relationships among Earth's structure, systems, and processes.
- Analyzes the relationships between sources of energy and their effects on Earth's systems.
- Analyzes the history and evolution of Earth.