

# Nebraska



## Science Standards

with

## Extended Indicators

for

Students with Significant Disabilities

taking the

NeSA Alternate Assessment Science (NeSA-AAS)

# Nebraska Science Standards and Science Standards with Extended Indicators

## The Role of Extended Indicators

For students with significant intellectual disabilities, achieving grade-level standards is not the same as meeting grade-level expectations because their instructional program addresses extended indicators.

It is important for teachers of students with significant intellectual disabilities to recognize that extended indicators are not meant to be viewed as sufficient skills or understandings. Extended indicators must be viewed only as access or entry points to the grade-level standards. The extended indicators in this document are not intended as the end goal, but rather a starting place for moving students forward to conventional science concepts. Lists following “e.g.” in the extended indicator are provided only as possible examples.

## Students with Significant Intellectual Disabilities

In the United States, approximately 1% of school-aged children have an intellectual disability that is “characterized by significant limitations both in intellectual functioning and adaptive behavior as expressed in conceptual, social, and practical adaptive skills” (U.S. Department of Education, 2002 and American Association of Intellectual and Developmental Disabilities, 2009). These students show evidence of cognitive functioning in the range of severe to profound and need extensive or pervasive support. In addition to significant intellectual disabilities, students may have accompanying communication, motor, sensory, or other impairments.

## Alternate Assessment Determination Guidelines

The student taking a NeSA Alternate Assessment is characterized by significant limitations both in intellectual functioning and adaptive behavior which is expressed in conceptual, social, and practical adaptive skills and that originates before age 18 (American Association of Intellectual and Developmental Disabilities, 2009). It is important to recognize the huge disparity of skills possessed by students taking an alternate assessment and to consider the uniqueness of each child.

Thus, the IEP team must consider all of the following guidelines when determining the appropriateness of a curriculum based on Extended Indicators and the use of the NeSA Alternate Assessment.

- **The student requires extensive, pervasive, and frequent supports in order to acquire, maintain, and demonstrate performance of knowledge and skills.**

- The student’s demonstrated cognitive ability and adaptive behavior prevent completion of the general academic curriculum, even with appropriately designed and implemented modifications and accommodations.
- The student’s curriculum and instruction is closely aligned to the Nebraska Science Standards with extended indicators.
- The student may have accompanying communication, motor, sensory, or other impairments.

The Nebraska Department of Education’s technical assistance document ***“IEP Team Decision Making Guidelines – Nebraska State Accountability (NeSA) Tests for Students with Disabilities”*** provides additional information on selecting appropriate NeSA assessments for students with disabilities. <http://www.nde.state.ne.us/sped/assessment.html>

# Nebraska Fifth Grade Science Standards and Extended Indicators for Students with Significant Disabilities

## 1. Inquiry, the Nature of Science and Technology

### K-12 Comprehensive Science Standard - Inquire, the Nature of Science, and Technology

Students will combine scientific processes and knowledge with scientific reasoning and critical thinking to ask questions about phenomena and propose explanations based on gathered evidence.

#### Abilities to Do Scientific Inquiry

Indicator	SC 5.1.1 Students will plan and conduct investigations that lead to the development of explanations.
<b>Extended Indicator</b>	<b>SCE 5.1.1 Students will conduct investigations that lead to a final product.</b>

#### Nature of Science

Indicator	SC 5.1.2 Students will describe how scientists go about their work.
<b>Extended Indicator</b>	<b>SCE 5.1.2 Students will observe how scientists go about their work.</b>

#### Technology

Indicator	SC 5.1.3 Students will solve a simple design problem.
<b>Extended Indicator</b>	<b>SCE 5.1.3 Students will solve a simple problem</b>

## 2. Physical Science

### K-12 Comprehensive Science Standard – Physical Science

Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Physical Sciences to make connections with the natural and engineered world.

#### Matter

Indicator	SC 5.2.1 Students will explore and describe the physical properties of matter and its changes.
<b>Extended Indicator</b>	<b>SCE 5.2.1 Students will explore and recognize the physical properties of matter and its changes.</b>

#### Force and Motion

Indicator	SC 5.2.2 Students will identify the influence of forces on motion.
<b>Extended Indicator</b>	<b>SCE 5.2.2 Students will identify the influence of forces on motion.</b>

#### Energy

Indicator	SC 5.2.3 Students will observe and identify signs of energy transfer.
<b>Extended Indicator</b>	<b>SCE 5.2.3 Students will observe and identify signs of energy transfer.</b>

### 3. Life Science

#### K-12 Comprehensive Science Standard – Life Science

Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Life Sciences to make connections with the natural and engineered world.

#### Structure and Function of Living Systems

Indicator	SC 5.3.1 Students will investigate and compare the characteristics of living things.
<b>Extended Indicator</b>	<b>SCE 5.3.1 Students will recognize that living things grow.</b>

#### Heredity

Indicator	SC 5.3.2 Students will identify variations of inherited characteristics and life cycles.
<b>Extended Indicator</b>	<b>SCE 5.3.2 Students will observe inherited characteristics and life cycles.</b>

#### Flow of Matter and Energy in Ecosystems

Indicator	SC 5.3.3 Students will describe relationships within an ecosystem.
<b>Extended Indicator</b>	<b>SCE 5.3.3 Students will recognize relationships within an ecosystem.</b>

#### Biodiversity

Indicator	SC 5.3.4 Students will describe changes in organisms over time.
<b>Extended Indicator</b>	<b>SCE 5.3.4 Students will identify changes in organisms over time.</b>

## 4. Earth and Space Science

### K-12 Comprehensive Science Standard – Earth and Space Science

Students will integrate and communicate the information, concepts, principles, processes, theories, and models of Earth and Space Sciences to make connections with the natural and engineered world.

#### Earth in Space

Indicator	SC 5.4.1 Students will observe and describe characteristics, patterns, and changes in the sky.
<b>Extended Indicator</b>	<b>SCE 5.4.1 Students will observe and recognize changes in the sky.</b>

#### Earth Structures and Processes

Indicator	SC 5.4.2 Students will observe and describe Earth’s materials, structure, and processes.
<b>Extended Indicator</b>	<b>SCE 5.4.2 Students will observe and recognize Earth’s materials and processes.</b>

#### Energy in Earth’s Systems

Indicator	SC 5.4.3 Students will observe and describe the effects of energy changes on Earth.
<b>Extended Indicator</b>	<b>SCE 5.4.3 Students will observe and recognize the effects of energy changes on Earth.</b>

#### Earth’s History

Indicator	SC 5.4.4 Students will describe environments based on fossil evidence.
<b>Extended Indicator</b>	<b>SCE 5.4.4 Students will recognize changes occur on Earth.</b>

# Nebraska Eighth Grade Science Standards and Extended Indicators for Students with Significant Disabilities

## 1. Inquiry, the Nature of Science and Technology

### K-12 Comprehensive Science Standard – Inquire, the Nature of Science, and Technology

Students will combine scientific processes and knowledge with scientific reasoning and critical thinking to ask questions about phenomena and propose explanations based on gathered evidence.

### Technology

Indicator	SC 8.1.3 Students will solve a design problem which involves one or two science concepts.
<b>Extended Indicator</b>	<b>SCE 8.1.3 Students will solve a problem using simple machines (inclined planes and wheels).</b>

## 2. Physical Science

### K-12 Comprehensive Science Standard – Physical Science

Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Physical Sciences to make connections with the natural and engineered world.

#### Matter

Indicator	SC 8.2.1 Students will identify and describe the particulate nature of matter including physical and chemical interactions.
<b>Extended Indicator</b>	<b>SCE 8.2.1 Students will explore and identify the physical properties and the physical changes of matter.</b>

#### Force and Motion

Indicator	SC 8.2.2 Students will investigate and describe forces and motion.
<b>Extended Indicator</b>	<b>SCE 8.2.2 Students will explore and recognize forces and motion.</b>

#### Energy

Indicator	SC8.2.3 Students will identify and describe how energy systems and matter interact.
<b>Extended Indicator</b>	<b>SCE 8.2.3 Students will identify and describe how energy systems and matter interact.</b>

### 3. Life Science

#### K-12 Comprehensive Science Standard – Life Science

Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Life Sciences to make connections with the natural and engineered world.

#### Structure and Function of Living Systems

Indicator	SC 8.3.1 Students will investigate and describe the structure and function of living organisms.
<b>Extended Indicator</b>	<b>SCE 8.3.1 Students will explore and identify the structure and function of living things.</b>

#### Heredity

Indicator	SC 8.3.2 Students will investigate and describe the relationship between reproduction and heredity.
<b>Extended Standard</b>	<b>SCE 8.3.2 Students will explore and identify the relationship between reproduction and heredity.</b>

#### Flow of Matter and Energy in Ecosystems

Indicator	SC 8.3.3 Students will describe populations and ecosystems.
<b>Extended Indicator</b>	<b>SCE 8.3.3 Students will recognize relationships within an ecosystem.</b>

#### Biodiversity

Indicator	SC 8.3.4 Students will identify characteristics of organisms that help them survive.
<b>Extended Indicator</b>	<b>SCE 8.3.4 Students will identify survival characteristics of organisms.</b>

## 4. Earth and Space Science

### K-12 Comprehensive Science Standard – Earth and Space Science

Students will integrate and communicate the information, concepts, principles, processes, theories, and models of Earth and Space Sciences to make connections with the natural and engineered world.

#### Earth in Space

Indicator	SC 8.4.1 Students will investigate and describe Earth and the solar system.
<b>Extended Indicator</b>	<b>SCE 8.4.1 Students will investigate Earth and the solar system.</b>

#### Earth Structures and Processes

Indicator	SC 8.4.2 Students will investigate and describe Earth’s structure, systems, and processes.
<b>Extended Indicator</b>	<b>SCE 8.4.2 Students will investigate and identify Earth’s structure, systems, and processes.</b>

#### Energy in Earth’s System

Indicator	SC 8.4.3 Students will investigate and describe energy in Earth’s systems.
<b>Extended Indicator</b>	<b>Mastery not expected</b>

#### Earth’s History

Indicator	SC 8.4.4 Students will use evidence to draw conclusions about changes in Earth.
<b>Extended Indicator</b>	<b>SCE 8.4.4 Students will recognize that the surface of Earth changes today, in similar ways as in the past.</b>

# Nebraska Twelfth Grade Science Standards and Extended Indicators for Students with Significant Disabilities

## 1. Inquiry, the Nature of Science and Technology

### K-12 Comprehensive Science Standard - Inquire, the Nature of Science, and Technology

Students will combine scientific processes and knowledge with scientific reasoning and critical thinking to ask questions about phenomena and propose explanations based on gathered evidence.

#### Abilities to Do Scientific Inquiry

Indicator	SC 12.1.1 Students will design and conduct investigations that lead to the use of logic and evidence in the formulation of scientific explanations and models.
<b>Extended Indicator</b>	<b>SCE 12.1.1 Students will conduct an investigation that leads to an answer.</b>

#### Nature of Science

Indicator	SC 12.1.2 Students will apply the nature of scientific knowledge to their own investigations and in the evaluation of scientific explanations.
<b>Extended Indicator</b>	<b>SCE 12.1.2 Students will apply the nature of science investigations to the world in which they live.</b>

#### Technology

Indicator	SC 12.1.3 Students will solve a complex design problem.
<b>Extended Indicator</b>	<b>SCE 12.1.3 Students will solve a design problem.</b>

## 2. Physical Science

### K-12 Comprehensive Science Standard – Physical Science

Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Physical Sciences to make connections with the natural and engineered world.

#### Matter

Indicator	SC 12.2.1 Students will investigate and describe matter in terms of its structure, composition, and conservation.
<b>Extended Indicator</b>	<b>SCE 12.2.1 Students will identify changes that take place between states of matter.</b>

#### Force and Motion

Indicator	SC 12.2.2 Students will investigate and describe the nature of field forces and their interactions with matter.
<b>Extended Indicator</b>	<b>SCE 12.2.2 Students will investigate and identify how forces interact with matter.</b>

#### Energy

Indicator	SC 12.2.3 Students will describe and investigate energy systems relating to the conservation and interaction of energy and matter.
<b>Extended Indicator</b>	<b>SCE 12.2.3 Students will investigate and recognize the effects of energy transfer.</b>

### 3. Life Science

#### K-12 Comprehensive Science Standard – Life Science

Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Life Sciences to make connections with the natural and engineered world.

#### Structure and Function of Living Systems

Indicator	SC 12.3.1 Students will investigate and describe the chemical basis of the growth, development, and maintenance of cells..
<b>Extended Indicator</b>	<b>SCE 12.3.1 Students will investigate and identify the factors needed for life and growth.</b>

#### Heredity

Indicator	SC 12.3.2 Students will describe the molecular basis of reproduction and heredity.
<b>Extended Indicator</b>	<b>SCE 12.3.2 Students will investigate and identify features of living organisms that come from their parents.</b>

#### Flow of Matter and Energy in Ecosystems

Indicator	SC 12.3.3 Students will describe, on a molecular level, the cycling of matter and the flow of energy between organism and their environment.
<b>Extended Indicator</b>	<b>SCE 12.3.3 Students will investigate and identify the cycling of matter between organisms and their environment.</b>

#### Biodiverstiy

Indicator	SC 12.3.4 Students will describe the theory of biological evolution.
<b>Extended Indicator</b>	<b>SCE 12.3.4 Students will explore and identify elements of evolution.</b>

## 4. Earth and Space Science

### K-12 Comprehensive Science Standard – Earth and Space Science

Students will integrate and communicate the information, concepts, principles, processes, theories, and models of Earth and Space Sciences to make connections with the natural and engineered world.

#### Earth in Space

Indicator	SC 12.4.1 Students will investigate and describe the known universe.
<b>Extended Indicator</b>	<b>SCE 12.4.1 Students will identify the difference between man-made and natural objects in space.</b>

#### Earth Structures and Processes

Indicator	SC 12.4.2 Students will investigate the relationships among Earth’s structures, systems, and processes.
<b>Extended Indicator</b>	<b>SCE 12.4.2 Students will recognize that various processes cause changes on Earth.</b>

#### Energy in Earth’s Systems

Indicator	SC 12.4.3 Students will investigate and describe the relationships among the sources of energy and their effects on Earth’s systems.
<b>Extended Indicator</b>	<b>SCE 12.4.3 Students will identify sources of energy in Earth’s system.</b>

#### Earth’s History

Indicator	SC 12.4.4 Students will explain the history and evolution of Earth.
<b>Extended Indicator</b>	<b>SCE 12.4.4 Students will identify changes in Earth over time.</b>