

Nebraska’s College and Career Ready Standards for Science (NCCRS-S)¹ are organized by grade level for Grades K–8 and by grade span in high school. **K–5 standards are organized to reflect the developmental nature of learning for elementary students and attend to the learning progressions that build foundational understandings of science. By the time students reach middle school (Grades 6–8), they build on this foundation to develop more sophisticated understandings of science concepts through high school.**

Appendix A provides the topic progression for the NCCRS-S, and Appendix B presents a sample performance task model and explains how they are developed. Examples of progressions for the Science and Engineering Practices and Crosscutting Concepts as represented in Appendices F and G, respectively, of the Next Generation Science Standards (NGSS; NGSS Lead States, 2013)² demonstrate the growth in complexity and sophistication across the grades.

The NSCAS-General Summative Science assessment is administered to students in Grades 5 & 8. This document provides an expectation of the frequency of the Disciplinary Core Ideas (DCIs), Science and Engineering Practices (SEPs), and Crosscutting Concepts (CCCs) from the NCCRS-S. Each element from the DCIs, SEPs, and CCCs is assigned a frequency (i.e., frequent, infrequent, rare) that indicates how often the element will be assessed, as shown in the tables below.

The NSCAS Science assessment is formed around tasks, which are collections of prompts focused on a single phenomenon or problem. Tasks may use the DCIs, SEPs, and CCCs in any combination. Frequent elements will most likely be assessed every year, infrequent elements will be presented at least every two years, and rare elements will be presented at least every three years. **Any elements may be tested in any year.** The frequency level of elements in the assessment is based on the frequency these concepts can be found in the grade-level NCCRS-S.

Grade 5

Gather, Analyze, and Communicate evidence about...

¹ Nebraska Department of Education (NDE). (2017). *Nebraska’s College and Career Ready Standards for Science*. Retrieved from https://cdn.education.ne.gov/wp-content/uploads/2017/10/Nebraska_Science_Standards_Final_10_23.pdf.

² NGSS Lead States. (2013). *Next Generation Science Standards: For states, by states*. Washington, DC: The National Academic Press. Retrieved from <https://www.nextgenscience.org/search-standards>. Next Generation Science Standards is a registered trademark of Achieve. Neither Achieve nor the lead states and partners that developed the Next Generation Science Standards were involved in the production of this product, and do not endorse it.

Frequency	Topics (from which DCIs will be selected)	SEPs	CCCs
Frequent	<ul style="list-style-type: none"> • Structure & Properties of Matter • Matter and Energy in Organisms and Ecosystems • Space Systems: Earth’s Stars & Solar System • Earth’s Systems • Engineering Design (define problems, develop possible solutions, and improve designs) 	<ul style="list-style-type: none"> • Developing and Using Models • Using Mathematics and Computational Thinking • Engaging in Argument from Evidence 	<ul style="list-style-type: none"> • Scale, Proportion, & Quantity • Systems & System Models • Cause Effect
Infrequent	N/A	<ul style="list-style-type: none"> • Defining Problems • Planning and Carrying Out Investigations 	<ul style="list-style-type: none"> • Energy and Matter • Patterns
Rare	N/A	<ul style="list-style-type: none"> • Asking Questions • Analyzing and Interpreting Data • Constructing Explanations • Designing Solutions • Obtaining, Evaluating & Communicating Information 	<ul style="list-style-type: none"> • Structure and Function • Stability and Change

Grade 8

Gather, Analyze, and Communicate evidence about...

Frequency	Topics (from which DCIs will be selected)	SEPs	CCCs
Frequent	<ul style="list-style-type: none"> • Forces & Interactions • Waves & Electromagnetic Radiation • Energy • Heredity: Inheritance & Variation of Traits • Natural Selection and Adaptations • Space Systems • History of the Earth • Engineering Design (define problems, develop possible solutions, and improve designs) 	<ul style="list-style-type: none"> • Developing and Using Models • Analyzing and Interpreting Data • Using Mathematics and Computational Thinking • Constructing Explanations 	<ul style="list-style-type: none"> • Patterns • Cause and Effect • Systems and System Models
Infrequent	N/A	<ul style="list-style-type: none"> • Planning and Carrying Out Investigations • Obtaining, Evaluating & Communicating Information 	<ul style="list-style-type: none"> • Scale, Proportion, & Quantity • Structure and Function
Rare	N/A	<ul style="list-style-type: none"> • Asking Questions • Defining Problems • Designing Solutions • Engaging in Argument from Evidence 	<ul style="list-style-type: none"> • Energy and Matter • Stability and Change

Appendix A: Topic Progression

The topic progression below shows which topics are included at each grade level in the NCCRS-S and reflect the developmental nature of learning for students and attend to the learning progressions that build foundational understandings of science. The assessments for grade 5 & 8 are designed to engage students in novel phenomena and

Appendix B: Performance Task Map

The performance task map below shows how tasks for the assessment are constructed and how they might fit into the 3-dimensional elements. Writers select one or more DCIs then find a phenomenon to match. Other 3-dimensional elements are then selected that will support the DCIs and the phenomenon. Finally, the task is written. The task is made up from one or more scenarios, which are non-interactive and consist of text and/or graphics. Each scenario supports one or more prompts, which are the interactive pieces that require a student response.

