NSCAS NEBRASKA STUDENT-CENTERED ASSESSMENT SYSTEM

Summative Assessment
Science Grades 5 and 8 Range Achievement Level Descriptors

What are Range Achievement Level Descriptors?
Range Achievement Level Descriptors (RALDs) demonstrate how skills described in Nebraska's College and Career Ready Standards likely change and become more sophisticated as ability and performance increases. The RALDs also describe the evidence needed to help infer where a student is along the range. This range is defined by Nebraska using three levels:

- Developing – not yet demonstrating proficiency
- On Track – demonstrating proficiency
- Advanced – demonstrating advanced proficiency

The Range ALDs help show the within-standard reasoning complexity that increases in sophistication as the achievement levels increase. Such skill advancement is often related to increases in content difficulty, increases in reasoning complexity, and a reduction in the supports required for students to demonstrate what they know within a task or item.

The RALDs provide a way to communicate a progression that is visible and usable to all stakeholders, while also providing a foundation for a robust bank of assessment items that meets the needs of all Nebraska students.

How were Nebraska's Science Draft Range ALDs created?
The Draft RALDs were developed in an iterative manner, centered around teacher and NDE reviews. Range ALDs will be further refined based on evidence of student learning from the NSCAS assessment after standard setting.

After the 2019 Content/Bias Review of new development to the Nebraska's College and Career Ready Standards for Science (NCCRS-S), a draft of the RALDs were created based on the feedback from Nebraska educators on the items and standards. NDE reviewed the draft and provided initial feedback which was then incorporated.
The updated Range ALDs were taken to the 2021 and 2022 Item Writing Workshop as well as to the 2021 Content/Bias review to serve as a resource.

The draft RALDs were taken to the 2022 Standard Setting meeting and presented to the committee for revisions after making recommended cut scores. The committee was comprised of Nebraska educators. The Range ALDs will then be updated based on the final approved cut scores from the assessment and a comparison of a representative sample of items in the NSCAS item bank to the Range ALDs. The updated RALDs will be shared with NDE to obtain their final recommendations.

NSCAS Science Summative Achievement Level Descriptors (ALDs)

Across the grade level DCIs of the physical, Earth/space, and life sciences, when engaging in sensemaking about a phenomenon, a student performing in the **Developing level** can:	Across the grade level DCIs of the physical, Earth/space, and life sciences, when engaging in sensemaking about a phenomenon, a student performing in the **On-Track level** can:	Across the grade level DCIs of the physical, Earth/space, and life sciences, when engaging in sensemaking about a phenomenon, a student performing in the **Advanced level** can:
Teacher note: DCIs and CCCs are interchangeable to the context of the learner making sense of the phenomenon. For example, where you may see cause and effect as the referenced CCC, it may make sense to exchange with structure and function for making sense of the phenomenon.		
1A Asking Questions AQ-5D: Identify scientific questions using observable patterns that are testable and relevant to a given phenomenon that can generate evidence to make sense of the phenomenon. Use cause and effect relationships to generate questions that can be investigated about a phenomenon and predict possible outcomes. Identify questions that ask what would happen to a system within a phenomenon if one variable is changed.	**1A Asking Questions AQ-5OT:** Ask scientific questions based on observed patterns about a familiar phenomenon that can generate evidence to make sense of the phenomenon. Use cause and effect relationships to generate relevant questions that can be investigated about a phenomenon and predict reasonable outcomes. Generate relevant questions that ask what would happen to a system within a phenomenon if one variable is changed.	**1A Asking Questions AQ-5ADV:** Refine scientific questions and formulate relevant and testable claims (hypotheses) based on observed patterns about an unfamiliar phenomenon that can generate evidence to make sense of the phenomenon. Use cause and effect relationships to justify questions that can be investigated about a phenomenon and predict reasonable outcomes. Generate relevant questions using information from multiple sources that ask what would happen to a system within a phenomenon if one variable is changed.
1A Asking Questions AQ-8D: Ask questions from observation of phenomena, models, or unexpected results, to clarify and/or seek additional information in a system. Evaluate questions to identify or clarify evidence and/or the premise(s) of an argument to make sense of the phenomenon using cause and effect relationships. Ask questions to identify relationships between independent and dependent variables to make sense of the phenomenon.	**1A Asking Questions AQ-8OT:** Ask questions from observation of phenomena, models, or unexpected results, to clarify and seek additional information in a system. Evaluate questions requiring empirical evidence to challenge the premise of an argument or the interpretation of a data set to make sense of the phenomenon using cause and effect relationships. Ask questions to determine relationships between independent and dependent variables and relationships in models to make sense of the phenomenon.	**1A Asking Questions AQ-8ADV:** Ask questions requiring empirical evidence that challenge the premise of an argument or the interpretation of a data set to make sense of the phenomenon using cause and effect relationships. Ask questions to determine relationships, including quantitative relationships, between independent and dependent variables to make sense of the phenomenon.

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1B Defining Problems DP-5D: Use core scientific ideas to define a simple engineering design problem that can be solved through the development of an object or tool for a specific function. Use core scientific ideas to identify questions that define a simple design problem for an object or tool for a specific function. Identify constraints on materials, time, or cost of the engineering design for achieving a successful object or tool for a specific function.	**1B Defining Problems DP-OT:** Define a simple design problem that can be solved through the development of a process or system that requires application of core scientific ideas. Generate questions that define a simple design problem in a process or system that lead to the application of core scientific ideas. Determine constraints on materials, time, or cost of the engineering design for achieving a successful process or system.	**1B Defining Problems DP-5ADV:** Use core scientific ideas to define a simple design problem that can be solved through the development of an object, tool, process, and system. Generate and evaluate questions to define a simple design using multiple criteria and constraints in a system. Prioritize constraints on materials, time, or cost for achieving a successful object, tool, process and system.
1B Defining Problems DP-8D: Using the engineering design process, identify a design problem that can be solved through the development of an object or tool for a specific function and/or process or systems.	**1B Defining Problems DP-8OT** Using the engineering design process, define a design problem that can be solved through the development of an object or tool for a specific function and/or process or systems and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions.	**1B Defining Problems DP-8ADV:** Using the engineering design process, define a design problem that involves the development of a process or system with interacting components, criteria, and constraints.

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2 Developing and Using Models MOD-5D: Use a model to identify relevant components of a system that describe a given phenomenon. Use a model that represents a system to explain phenomenon.	**2 Developing and Using Models MOD-5OT:** Develop and use a model to describe and/or predict phenomena, making explicit any invisible features of a given natural system. Develop a model to describe the interactions of specific parts of a system and explain or predict a phenomenon. Identify the limitations of a model's system that explains the causes of a phenomenon.	**2 Developing and Using Models MOD-5ADV:** Develop and use different types of models to describe and/or predict phenomena, making explicit the inputs, outputs, and processes of a given natural system. Evaluate multiple models to determine which best explains, describes, or predicts the behavior of a system for a phenomenon.
2 Developing and Using Models MOD-8D: Evaluate merits of a model of a phenomena or design solution for a specific function. Use a model to predict or describe stability and/or change of phenomena. Identify or modify a model to show the relationships among variables but predict phenomena. Use a model to describe unobservable mechanisms of phenomena.	**2 Developing and Using Models MOD-8OT** Evaluate limitations of a model of a phenomena or design solution for a specific function. Develop and/or use a model to predict and/or describe stability and/or change of phenomena. Develop or modify a model, based on evidence, to show the relationships among variables, including those that are not observable but predict observable phenomena. Develop a model to describe unobservable mechanisms of phenomena.	**2 Developing and Using Models MOD-8ADV:** Evaluate merits and limitations of a model of a phenomena or design solution for a specific function. Develop and revise a model to predict and/or describe stability and/or change of phenomena. Develop or modify multiple models, based on evidence, to show the relationships among variables, including those that are not observable but predict observable phenomena. Develop a model to test unobservable mechanisms of phenomena.

Use a model to generate data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs.	Develop a model to generate data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs, and those at unobservable scales.	Develop and use a model to generate data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs, and those at unobservable scales.

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3 Planning and Carrying Out Investigations INV-5D: Collect and organize data that support an explanation of a phenomenon using standard units for measurements. Identify observations and/or measurements that can be used to explain the cause of a phenomenon or a design solution. Identify variables that could change in a system and be used as evidence to explain or predict a phenomenon. Use given observations to identify which proposed object, tool, or process meets success criteria for designing a solution.	**3 Planning and Carrying Out Investigations INV-5OT:** Evaluate methods and/or tools for data collection and organization using standard units for measurements to serve as evidence for explaining a phenomenon. Make and use observations and/or measurements to explain the cause of a phenomenon or a design solution. Make predictions about what would happen in a system within a phenomenon if a variable changes. Identify the strengths and weaknesses of proposed design solutions by testing two different models for the same object, tool, or process to determine which better meets the success criteria.	**3 Planning and Carrying Out Investigations INV-5ADV:** Justify methods and/or tools for data collection and organization using standard units for measurements that support explanation of a phenomenon. Explain how patterns found in observations and measurements support explanation of a phenomenon or design solution. Make and justify predictions about what would happen in a system within a phenomenon if a variable changes. Record, categorize, and organize observations to justify the strengths and weaknesses of proposed design solutions using two different models for the same object, tool, or process to determine which better meets the success criteria.
3 Planning and Carrying Out Investigations INV-8D: Plan an investigation collaboratively to make sense of a phenomena and in the design: • identify variables and controls	**3 Planning and Carrying Out Investigations INV-8OT:** Plan an investigation individually and/or collaboratively to make sense of a phenomena, and in the design: • identify cause and effect relationship between independent and dependent variables and controls	**3 Planning and Carrying Out Investigations INV-8ADV:** Plan an investigation individually to make sense of a phenomena, and in the design: • identify relationships between independent and dependent variables and controls

• identify tools for a specific function to gather data from a provided list	• identify tools needed for a specific function to gather data	• identify tools needed for a specific function to gather data
• identify how measurement will be recorded using standard units of measurement	• identify how measurement will be recorded and organized using standard units of measurement	• identify how measurement will be recorded and organized using standard units of measurement
	• identify how much data is needed.	• identify how much data is needed.
Conduct an investigation identifying patterns in data to serve as the basis for evidence to make sense of a phenomena.	Conduct an investigation or evaluate or revise the experimental design to determine cause/effect relationships in data to serve as the basis for evidence to make sense of a phenomena.	Conduct an investigation and/or evaluate and/or revise the experimental design to determine relationships in data to serve as the basis for evidence to make sense of a phenomena.
• Identify the methods for collecting data	• Evaluate the accuracy of various methods for collecting data.	• Evaluate the accuracy of various methods for collecting data.
• Collect data from investigation to serve as evidence or answer specific questions.	• Collect and organize data from investigation to serve as evidence or answer specific questions.	• Collect and organize data from investigation to serve as evidence or answer specific questions.
• Identify data produced to determine if data provides relevant evidence.	• Evaluate data produced to determine if data provides relevant evidence.	• Evaluate data produced to determine if data provides relevant evidence.

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4 Analyzing and Interpreting Data DATA-5D: Identify patterns in data to make sense of and explain phenomena. Identify appropriate graphical representations of data that can be used to reveal patterns across data sets to make sense of phenomena Use data to evaluate the quality of a design solution in performing a specific function.	**4 Analyzing and Interpreting Data DATA-5OT:** Compare and contrast patterns in data from multiple investigations to discuss similarities and differences and to make sense of and explain phenomena. Represent data from relevant observations in various graphical ways to reveal patterns that indicate relationships to explain phenomena. Use data to evaluate and refine the quality of design solutions in performing a specific function.	**4 Analyzing and Interpreting Data DATA-5ADV:** Analyze data from multiple investigations to determine how the patterns can explain causes of phenomena. Analyze and interpret categorical and/or numerical data to predict or explain the patterns that indicate relationships in the data. Use data to justify changes to a design solution to better perform the intended function.
4 Analyzing and Interpreting Data DATA-8D: Construct, analyze, or interpret graphical display of data or large data sets to identify patterns to make sense of phenomena - Use graphical displays (e.g., maps, charts, graphs, and/or tables) of large data sets to identify qualitative relationships. - Identify cause and effect relationships in data. - Apply concepts of statistics and probability (including mean and mode) to analyze and characterize data. - Consider limitations of data analysis (e.g., measurement error), or seek to improve precision and accuracy of data	**4 Analyzing and Interpreting Data DATA-8OT:** Construct, analyze, and/or interpret graphical display of data and/or large data sets to identify linear and nonlinear relationships to make sense of phenomena. - Use graphical displays (e.g., maps, charts, graphs, and/or tables) of large data sets to identify quantitative relationships. - Distinguish between causal and correlational relationships in data. - Apply concepts of statistics and probability (including mean, median, mode, and variability) to analyze and characterize data. - Consider limitations of data analysis (e.g., measurement error), and/or seek to improve precision and accuracy of data	**4 Analyzing and Interpreting Data DATA-8ADV:** Construct, analyze, and interpret graphical display of data and/or large data sets to identify relationships to make sense of phenomena. - Use graphical displays (e.g., maps, charts, graphs, and/or tables) of large data sets to identify quantitative relationships. - Distinguish between causal and correlational relationships in data. - Apply concepts of statistics and probability (including mean, median, mode, and variability) to analyze and characterize data. - Consider limitations of data analysis (e.g., measurement error), and seek to improve precision and accuracy of data with better

with better technological tools and methods (e.g., multiple trials). ● Analyze data to define an operational range for a proposed model or system.	with better technological tools and methods (e.g., multiple trials). ● Analyze data to define an optimal operational range for a proposed model or system that best meets criteria for success.	technological tools and methods (e.g., multiple trials). ● Analyze data to define an optimal operational range for a proposed model or system that best meets criteria for success.

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5 Using Mathematics and Computational Thinking MATH-5D: Use provided simple data sets to find and communicate patterns that support an explanation of the cause of a phenomenon. Describe quantitative patterns from given graphical displays of data that address scientific questions or engineering problems. Use data from provided charts and/or graphs to explain whether a proposed object or tool meets criteria for success.	**5 Using Mathematics and Computational Thinking MATH-5OT:** Organize simple data sets to reveal patterns that suggest relationships. Describe, measure, estimate, and/or graph quantities to provide evidence of patterns that address scientific questions or engineering problems. Complete or modify graphs or charts to evaluate whether a proposed object or tool meets criteria for success.	**5 Using Mathematics and Computational Thinking MATH-5ADV:** Organize more complex data sets to reveal patterns and make predictions about a phenomenon. Describe, measure, estimate, graph and compare quantities to provide evidence of patterns that address scientific questions or engineering problems. Construct and/or compare multiple graphs and charts to evaluate whether a proposed object or tool meets criteria for success.
5 Using Mathematics and Computational Thinking MATH-8D: Use qualitative data to make sense of phenomena. Use digital tools to analyze data sets for patterns and trends to make sense of phenomena. Identify mathematical representations to describe evidence (any CCC) or support scientific conclusions to make sense of phenomena or design solutions. Use algorithms (a series of ordered steps) in a system to solve a problem or make sense of phenomena.	**5 Using Mathematics and Computational Thinking MATH-8OT:** Use qualitative and/or quantitative data to make sense of phenomena. Use digital tools to analyze large data sets for patterns and trends to make sense of phenomena. Use mathematical representations to describe evidence (any CCC) and/or support scientific conclusions and to make sense of phenomena or design solutions. Create algorithms (a series of ordered steps) in a system to solve a problem or make sense of phenomena.	**5 Using Mathematics and Computational Thinking MATH-8ADV:** Use qualitative and quantitative data to make sense of phenomena. Use digital tools to analyze large data sets for patterns and trends to make a prediction to make sense of phenomena. Use mathematical representations to describe evidence (any CCC) and/or support scientific conclusions and to make sense of phenomena or design solutions. Evaluate algorithms (a series of ordered steps) in a system to determine the best solution to a problem or make sense of phenomena.

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Use mathematical concepts and/or processes (such as ratio, rate, percent, basic operations, and simple algebra) with support to solve scientific and engineering questions and problems supported by evidence.	Apply mathematical concepts and/or processes (such as ratio, rate, percent, basic operations, and simple algebra) to solve scientific and engineering questions and problems supported by evidence.	Apply mathematical concepts and/or processes (such as ratio, rate, percent, basic operations, and simple algebra) to solve scientific and engineering questions and problems supported by evidence from testing and comparing proposed solutions.

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6A Constructing Explanation CE-5D: Given relevant information, use observed patterns to construct an evidence-based account for natural phenomena. Identify evidence (measurements, observations, patterns) that could be used to support an explanation of natural phenomena.	**6A Constructing Explanation CE-5OT:** Select relevant information to construct an explanation of observed relationships between components in a system for a natural phenomenon. Use evidence (measurements, observations, patterns) to construct or support an explanation for a natural phenomenon. Identify the evidence (measurements, observations, patterns) that supports particular points in an explanation of a natural phenomenon.	**6A Constructing Explanation CE-5ADV:** Evaluate multiple explanations used to explain the relationships between components of a system for a given phenomenon. Evaluate evidence (measurements, observations, patterns) to be used to construct and support an explanation of a natural phenomenon.
6A Constructing Explanation CE-8D: Construct an explanation that includes qualitative or quantitative relationships between variables that describes phenomena. Construct an explanation using given models or representations for real-world phenomena, examples, or events. Construct a scientific explanation based on evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.	**6A Constructing Explanation CE-8OT:** Construct an explanation that includes qualitative or quantitative relationships between variables that predicts and/or describes phenomena. Construct an explanation using models or representations for real-world phenomena, examples, or events. Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.	**6A Constructing Explanation CE-8ADV:** Construct an explanation that includes qualitative or quantitative relationships between variables that predicts and describes phenomena. Construct an explanation using models or representations for real-world phenomena, examples, or events. Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.

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Apply scientific ideas, principles, and/or evidence to construct an explanation for real-world phenomena, examples, or events. Apply scientific reasoning with scaffolded support to show why the data or evidence is relevant for the explanation or conclusion for real-world phenomena, examples, or events.	Apply scientific ideas, principles, and/or evidence to construct, revise and/or use an explanation for real-world phenomena, examples, or events. Apply scientific reasoning to show why the data or evidence is focused and relevant for the explanation or conclusion for real-world phenomena, examples, or events.	Apply scientific ideas, principles, and/or evidence to construct, revise and use an explanation for real-world phenomena, examples, or events. Apply scientific reasoning to show why focused and relevant data or evidence may limit the explanation or conclusion for real-world phenomena, examples, or events.

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6B Designing Solutions DS-5D: Identify evidence (observations, measurements, patterns) used to design a solution to a problem in the natural and designed world. Use structure and function to identify scientific ideas to solve a design problem. Use structure and function relationships to compare given solutions to design problems based on how well they meet the criteria of the design solution.	**6B Designing Solutions DS-5OT:** Use evidence (observations, measurements, patterns) to design a solution to a problem in the natural and designed world. Use structure and function to apply scientific ideas to solve design problems. Use structure and function relationships to generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design solution.	**6B Designing Solutions DS-5ADV:** Use structure and function to apply scientific ideas to test a solution to a design problem. Use structure and function relationships to construct and/or implement a solution to a problem based on how well they meet the criteria and constraints of the design solution.
6B Designing Solutions DS-8D: Identify scientific ideas or principles to design, construct, or test a design of an object, tool, process or system. Undertake a design project, engaging in the design cycle, to construct or implement a solution that meets specific design criteria and constraints for real-world phenomena, examples, or events. Improve performance of a design by prioritizing criteria, making tradeoffs, testing, revising, and re-testing to solve real-world problems with evidence.	**6B Designing Solutions DS-8OT:** Apply scientific ideas or principles to design, construct, and/or test a design of an object, tool, process or system. Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints for real-world phenomena, examples, or events. Optimize performance of a design by prioritizing criteria, making tradeoffs, testing, revising, and re-testing to solve real-world problems with evidence.	**6B Designing Solutions DS-8ADV:** Apply scientific ideas or principles to design, construct, and test a design of an object, tool, process or system. Undertake a design project, engaging in the design cycle, to construct and implement a solution that meets specific design criteria and constraints for real-world phenomena, examples, or events. Optimize performance of a design by prioritizing criteria, making tradeoffs, testing, revising, and re-testing to solve real-world problems with evidence.

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7 Engaging in Argument from Evidence ARG-5D: Compare arguments and identify the evidence presented that is used to support the claims for the causes of a given phenomenon.	**7 Engaging in Argument from Evidence ARG-5OT:** Compare and refine arguments based on an evaluation of the evidence presented that is used to support the claims for the causes of a given phenomenon.	**7 Engaging in Argument from Evidence ARG-5ADV:** Compare, and refine arguments based on an evaluation of the evidence presented that is used to support the claims for the causes and effects of a given phenomenon and justify your reasons for the modifications.
Distinguish among facts and speculation in an explanation of a given phenomenon occurring within a system.	Distinguish among facts, reasoned judgment based on research findings, and speculation in an explanation of a given phenomenon occurring within a system	Evaluate the evidence used in an explanation of a given phenomenon occurring within a system to determine whether or not the evidence is factual, and research based.
Support an argument using data, evidence, and/or a model for the cause of a given phenomenon.	Construct and/or support an argument using data, evidence, and/or a model for the cause of a given phenomenon.	Construct and support an argument using data, evidence, and a model for the cause of a given phenomenon.
Identify data that could be used to evaluate claims about cause and effect of a given phenomenon.	Use data to evaluate claims about cause and effect of a given phenomenon.	Generate data to evaluate claims about cause and effect of a given phenomenon.

7 Engaging in Argument from Evidence ARG-8D:

Compare or critique two arguments on the same topic and analyze whether they emphasize similar or different evidence and/or interpretations of facts.

Respectfully provide or receive critique about one's explanations, procedures, models and questions by citing relevant evidence or posing and responding to questions that elicit pertinent elaboration and detail.

Collaboratively, construct, use, and/or present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.

Identify an oral or written argument that supports or refutes the advertised performance of a device, process, or system, based on empirical evidence concerning whether or not the technology meets relevant criteria and constraints for a phenomenon or a solution to a problem.

Identify competing design solutions based on jointly developed and agreed-upon design criteria.

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7 Engaging in Argument from Evidence ARG-8OT:

Compare and critique two arguments on the same topic and analyze whether they emphasize similar or different evidence and/or interpretations of facts.

Respectfully provide and/or receive critique about one's explanations, procedures, models and questions by citing relevant evidence and/or posing and responding to questions that elicit pertinent elaboration and detail.

Individually, construct, use, and/or present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.

Make an oral or written argument that supports or refutes the advertised performance of a device, process, or system, based on empirical evidence concerning whether or not the technology meets relevant criteria and constraints for a phenomenon or a solution to a problem.

Evaluate competing design solutions based on jointly developed and agreed-upon design criteria.

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7 Engaging in Argument from Evidence ARG-8ADV:

Compare and critique multiple arguments on the same topic and analyze whether they emphasize similar or different evidence and/or interpretations of facts.

Respectfully provide and receive critique about one's explanations, procedures, models and questions by citing relevant evidence and posing and responding to questions that elicit pertinent elaboration and detail.

Individually, construct, use, and present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.

Make an oral or written argument that supports and refutes the advertised performance of a device, process, or system, based on empirical evidence concerning whether or not the technology meets relevant criteria and constraints for a phenomenon or a solution to a problem.

Evaluate competing design solutions based on jointly developed and agreed-upon human impact design criteria.

Key	
	AQ-5D, AQ-5OT, AQ-5ADV, … = SEP abbreviation – grade and ALD level abbreviation
	Blue = SEP
	Blue Highlighted = SEP growth
	Green Underlined = CCC

Green Underlined & Highlighted = CCC growth
Orange = DCI
Orange Highlighted = DCI Growth

NSCAS Science Summative Achievement Level Descriptors (ALDs)

Across the grade level DCIs of the physical, Earth/space, and life sciences, when engaging in sensemaking about a phenomenon, a student performing in the **Developing level** can:	Across the grade level DCIs of the physical, Earth/space, and life sciences, when engaging in sensemaking about a phenomenon, a student performing in the **On-Track level** can:	Across the grade level DCIs of the physical, Earth/space, and life sciences, when engaging in sensemaking about a phenomenon, a student performing in the **Advanced level** can:
8 Obtaining, Evaluating, and Communicating Information INFO-5D: Read and comprehend simplified text and information from books and/or other reliable media to summarize and explain (using patterns, cause and effect, or structure and function) scientific and technical ideas and explain how they are supported by evidence.	**8 Obtaining, Evaluating, and Communicating Information INFO-5OT:** Read and comprehend grade-appropriate text and information from books and/or other reliable media to summarize and explain (using patterns, cause and effect, or structure and function) scientific and technical ideas and explain how they are supported by evidence.	**8 Obtaining, Evaluating, and Communicating Information INFO-5ADV:** Read, comprehend, and analyze complex, grade-appropriate text and information from books and/or other reliable media to summarize and explain (using patterns, cause and effect, or structure and function) scientific and technical ideas and explain how they are supported by evidence.
Compare or combine information or data across two simple texts or other reliable media to communicate simple scientific information or data using one or more elements from a selected crosscutting concept.	Compare and/or combine information across complex texts and/or other reliable media to describe how scientific ideas are supported by evidence (patterns, measurements, observations).	Analyze and synthesize information across complex texts and other reliable media to explain how science ideas are supported by evidence.
Combine information in written text with a given corresponding table, diagram, or chart to identify patterns that support the engagement in other scientific and/or engineering practices to make sense of a highly familiar phenomenon.	Combine information in written text with corresponding tables, diagrams, and/or charts to identify patterns that support the engagement in other scientific and/or engineering practices to make sense of a familiar phenomenon.	Combine information in written text with corresponding tables, diagrams, and charts to explain causal accounts that support the engagement in other scientific and/or engineering practices to make sense of an unfamiliar phenomenon.
Given information from books and/or other reliable media, identify evidence (patterns, measurements, cause/effect) of relevant content that explains phenomena or solutions to a design problem.	Obtain and combine information from books and/or other reliable media to communicate evidence (patterns, measurements, cause/effect) of relevant content that explains phenomena or solutions to a design problem.	Synthesize information from reliable books and media sources to communicate scientific ideas that are supported by evidence (patterns, measurements, observations).
Given graphic organizers and/or multiple information sources communicate scientific or	Communicate scientific and/or technical information orally and/or in written formats	Communicate scientific and technical information orally and/or in written formats including various

technical information orally or in written format and may include various forms of media, tables, diagrams, or charts to describe a component and its interaction within a system.	including various forms of media, and may include tables, diagrams, and/or charts to describe multiple components and interactions within a system.	forms of media, tables, diagrams, and/or charts by analyzing interactions within a system.
8 Obtaining, Evaluating, and Communicating Information INFO-8D: Critically read scientific texts adapted for classroom use to determine the central ideas or obtain scientific and/or technical information to describe patterns in or evidence about the natural and designed world(s) to make sense of phenomena or a solution to a problem. Integrate qualitative or quantitative scientific and/or technical information in written text with information contained in media and visual displays to clarify claims and findings to make sense of phenomena or a solution to a problem. Obtain and combine information from an appropriate source and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence to make sense of phenomena or a solution to a problem.	**8 Obtaining, Evaluating, and Communicating Information INFO-8OT:** Critically read scientific texts adapted for classroom use to determine the central ideas and/or obtain scientific and/or technical information to describe patterns in and/or evidence about the natural and designed world(s) to make sense of phenomena or a solution to a problem. Integrate qualitative and/or quantitative scientific and/or technical information in written text with information contained in media and visual displays to clarify claims and findings to make sense of phenomena or a solution to a problem. Gather, read, synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence to make sense of phenomena or a solution to a problem.	**8 Obtaining, Evaluating, and Communicating Information INFO-8ADV:** Critically read multiple scientific texts to determine the central ideas and/or obtain scientific and/or technical information to describe patterns in and/or evidence about the natural and designed world(s) to make sense of phenomena or a solution to a problem. Integrate qualitative and quantitative scientific and/or technical information in written text with information contained in media and visual displays to clarify claims and findings to make sense of phenomena or a solution to a problem. Gather, read, synthesize information from multiple sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence to make sense of phenomena or a solution to a problem.

NSCAS Science Summative Achievement Level Descriptors (ALDs)

Evaluate data, hypotheses, or conclusions with evidence in scientific and technical texts in light of competing information or accounts to make sense of phenomena or a solution to a problem. Communicate scientific and/or technical information (e.g., about a proposed object, tool, process, system) in writing or through oral presentation to make sense of phenomena or a solution to a problem.	Evaluate data, hypotheses, and/or conclusions with evidence in scientific and technical texts in light of competing information or accounts to make sense of phenomena or a solution to a problem. Communicate scientific and/or technical information (e.g., about a proposed object, tool, process, system) in writing and/or through oral presentation to make sense of phenomena or a solution to a problem.	Evaluate data, hypotheses, and conclusions with evidence in scientific and technical texts in light of competing information or accounts to make sense of phenomena or a solution to a problem. Communicate scientific and/or technical information (e.g., about a proposed object, tool, process, system) in writing, oral presentation, and digital media to make sense of phenomena or a solution to a problem.

Key	AQ-5D, AQ-5OT, AQ-5ADV, … = SEP abbreviation – grade and ALD level abbreviation Blue = SEP Blue Highlighted = SEP growth Green Underlined = CCC Green Underlined & Highlighted = CCC growth Orange = DCI Orange Highlighted = DCI Growth