NGSS/ND Standards: Science and Engineering Practices

- Appendix F

SEP1: Asking Questions and Defining Problems

4	3	2	1
In addition to proficiency, I can make connections to unfamiliar contexts and/or related science concepts	I can ask questions and define problems using all success criteria in familiar contexts ● Ask questions that arise from observations of phenomena (e.g., models, explanations, relationships) ● Differentiate between variables to generate and test a hypothesis (e.g., independent, dependent, control, constants) ● Accurately applies scientific specific concepts (DCI)	I can ask questions and define problems using some success criteria	I can ask questions and define problems with support

Standard/ DCI: add here

SEP2: Developing and Using Models

4	3	2	1
In addition to proficiency, I can make connections to unfamiliar contexts and/or related science concepts	I can develop and use models using all success criteria in familiar contexts ● Accuracy of model (e.g., label/key, components) ● Accurately describes a model to answer the prompt (e.g., explain, caption, critique) ● Accurately applies scientific specific concepts (DCI)	I can develop and use models using some success criteria	I can develop and use models with support

Standard/ DCI: add here

SEP3: Planning and Carrying Out Investigations

4	3	2	1
In addition to proficiency, I can make connections to unfamiliar contexts and/or related science concepts	I can plan and carry out investigations using all success criteria in familiar contexts ● Accurately design an investigation that answers a question or tests a hypothesis with the scientific method (e.g., variables, procedure, methods, tools, data, safety) ● Accurately carry out an investigation based on the written plan which collects and produces evidence (e.g. quantity, measure, and collection of data needed) ● Accurately applies scientific specific concepts (DCI)	I can plan and carry out investigations using some success criteria	I can plan and carry out investigations with support

Standard/ DCI: add here

SEP4: Analyzing and Interpreting Data

4	3	2	1
In addition to proficiency, I can make connections to unfamiliar contexts and/or related science concepts	I can analyze and interpret data using all success criteria in familiar contexts ● Accurately construct or analyze displays of data sets to identify patterns and relationships (e.g., mean, median, mode, trends, patterns, and/or variability) ● Accurately interprets data analysis or graphical analysis (e.g., explain, organize, critique, limitations & error) ● Accurately applies scientific specific concepts (DCI)	I can analyze and interpret data using some success criteria	I can analyze and interpret data with support

Standard/ DCI: add here

SEP5: Using Mathematics and Computational Thinking

4	3	2	1
In addition to proficiency, I can make connections to unfamiliar contexts and/or related science concepts	I can solve scientific problems using all success criteria in familiar contexts ● Accurately applies mathematical concepts and processes to solve scientific problems (e.g., measure, identify variables, estimate, show work, units and converting) ● Use mathematical representations to describes or support scientific concepts (e.g., explain, organize, critique) ● Accurately applies scientific specific concepts (DCI)	I can solve scientific problems using some success criteria	I can solve scientific problems with support

Standard/ DCI: add here

SEP6: Constructing Explanations

4	3	2	1
In addition to proficiency, I can make connections to unfamiliar contexts and/or related science concepts	I can construct an explanation for a scientific phenomenon using all success criteria in familiar contexts ● Accuracy of claim (e.g., qualitative or quantitative) ● Evidence is accurate and relevant (e.g., specific, in context, trends and patterns) ● Accurately applies scientific reasoning to support the claim (DCI)	I can construct an explanation for a scientific phenomenon using some success criteria	I can construct an explanation for a scientific phenomenon with support

Standard/ DCI: add here

SEP7: Engaging in Argument from Evidence

4	3	2	1
In addition to proficiency, I can make connections to unfamiliar contexts and/or related science concepts	I can engage in argument from evidence using all success criteria in familiar contexts ● Critique the evidence and scientific reasoning to support or refute an explanation (e.g., analyze, compare, evaluate) ● Accurately defends or refutes an oral or written argument with claim, evidence, reasoning ● Accurately applies scientific specific concepts (DCI)	I can engage in argument from evidence using some success criteria	I can engage in argument from evidence with support

Standard/ DCI: add here

SEP8: Obtaining, Evaluating, and Communicating Information

4	3	2	1
In addition to proficiency, I can make connections to unfamiliar contexts and/or related science concepts	I can obtain, evaluate and communicate information using all success criteria in familiar contexts ● Accurately read, obtain, and/or evaluate scientific information and ideas to describe patterns and/or evidence (e.g., scientific texts, displays, models, media, data sets, equations). ● Accurately communicates scientific information through writing, presentations and/or discussions (e.g., clarify, compare, patterns, sources, validity and reliability). ● Accurately applies scientific specific concepts (DCI)	I can obtain, evaluate and communicate information using some success criteria	I can obtain, evaluate and communicate information with support

Standard/ DCI: add here