



Nebraska STEM Instructional Resource Evaluation Rubric

This rubric is a guide for the development and evaluation of instructional resources with STEM activities to be incorporated in school-based, work-based, family-based, community-based learning environments. The purpose of this rubric is to promote rich opportunities for development of critical thinking, creativity, collaboration and communication (4C) skills through the use of quality, well-designed, and intentional instructional resources.

INTERDISCIPLINARY: *How does the resource promote the understanding of concepts across content areas?*

Does Not Meet	Meets	Models Excellence
Resource is focused only within one content area; or the connection across content areas is present but not called out.	Resource is integrated – helps learner see the application of concept from one content area into another content area (e.g., note that the scientific concept of density is an important factor in selecting construction materials).	Resource is interdisciplinary – helps learner transfer concepts from more than one content area in one holistic, systems-based activity (e.g., learn about the scientific concept of density and about characteristics of construction materials in one holistic model bridge building activity).

Rating and Evidence:

STANDARDS-BASED: *How does the resource promote the acquisition of proficiency toward a recognized, grade-appropriate standard?*

Does Not Meet	Meets	Models Excellence
Resource does not appear to help learners attain proficiency toward a recognized state-approved content area standard or course-based content standard. Or, the resource supports standards that are above grade level of intended users and, thus, not appropriate.	Resource is standards-aligned – the resource was designed to teach a concept that is not part of a recognized, grade-appropriate standard; but, the learner may use previously attained standards-based knowledge and/or skills or may gain new understanding of the applications in context (e.g., learner is learning about thresholds of pollution in water and uses existing competency to solve single variable equations in order to find PPM in a water lab activity).	Resource is standards-based – this resource was designed with the standard as the “starting point;” there is purposeful effort to help the learners acquire competency in the recognized, grade-appropriate standard (e.g., learner receives intentional instruction on how to solve single variable equations as part of an exercise of finding PPM in a water lab activity).

Rating and Evidence:

LEARNER-CENTERED ACTIVITY AND EXPERIENCE: *How does the resource give the learner first-hand experience?*

Does Not Meet	Meets	Models Excellence
Resource only allows learner a second-hand or distant engagement with the activity – more of a watch and listen experience with no other responsibility.	Resource is first-hand participatory – learner has some responsibility in the activity and is involved at a level that utilizes multiple senses to experience it (e.g., conduct their own cloud-making demonstration with own set of materials).	Resource is collaborative among peers – small groups of learners share most of the responsibility in the activity and may experiment with variations of the activity (e.g., teams plan, conduct and experiment with cloud-making materials).

Rating and Evidence:

STEM SKILLS AND APPLICATIONS: *How does the resource promote critical thinking, creativity, collaboration and communication (4C) skills through STEM Skills in a school-based, work-based, family-based, or community-based application?*

Science: Engage in 3 dimensional learning to construct scientific understanding • **Technology:** Use and apply technology • **Engineering:** Use engineering design process • **Mathematics:** Solve and communicate problems using mathematics

Does Not Meet	Meets	Models Excellence
Resource is focused on STEM content and concepts – not on the skills and practices of the STEM that result in 4C skills.	Resource effectively requires students to utilize acquired “4C” skills through the application of one of the STEM skills during the instructional activity.	Resource effectively promotes acquisition of new and/or advanced “4C” skills through the application of one or more of the STEM skills during the instructional activity.

Rating and Evidence: