

NYS STEM Quality Learning Rubric

Not Evident	Emerging	Engaged	Accomplished
<p>#1 Degree of STEM Integration</p> <p>No opportunities for students to consider relationships between STEM disciplines, Students complete tasks that integrate knowledge/skills from two of the STEM disciplines.</p>			
<p>#2 Connections to Non-STEM Disciplines</p> <p>No opportunities for students to make connections between their STEM learning and other disciplines (ie. The arts, Language Arts, Social Studies). Students are encouraged to make connections between STEM and non-STEM disciplines but are not performing tasks that integrate those disciplines.</p>			
<p>#3 Degree of Use of Project-Based Learning (PBL)</p> <p>No opportunities for students to be engaged in PBL in STEM disciplines. Students are engaged in PBL at least monthly in all STEM disciplines and at least one non-STEM discipline.</p>			
<p>#4 Connections to STEM Careers</p> <p>No opportunities for students to explore STEM careers relating to STEM learning experiences. Students explore careers in some STEM fields but there is no connection with STEM learning experiences.</p>			
			<p>Students complete self-directed tasks that integrate knowledge/skills from all four STEM disciplines and solve an authentic problem.</p> <p>Students complete self-directed tasks that integrate knowledge/skills from STEM to multiple non-STEM disciplines including instructional support for quality performance in the non-STEM disciplines. The tasks solve an authentic problem.</p> <p>Students regularly complete self-directed, authentic PBL experiences in all STEM disciplines and multiple non-STEM disciplines.</p> <p>Students complete tasks in a simulated or real STEM work environment and explore multiple STEM careers that directly connect to their STEM learning environment. Tasks include: describing the work/workplace, noting observations in a journal, describing the educational and skill requirements and reflections on the career/career experience.</p>

#5 Individual Accountability in Collaborative Work

No opportunities for students to work or learn in collaboration with other students. Students are encouraged to work in teams but the work is informal with no attention to individual accountability.

Students are required to work in formally structured teams with specific methods to measure individual and team accountability.

Students are required to work in formally structured teams with clear evaluation of expectations for team and individual accountability including instruction on interpersonal skills valued in the real-world work setting. Students contribute to the development of accountability rubrics.

#6 Application of the Engineering Design Process

No opportunities for students to apply the engineering design process. Students are encouraged to refine higher order cognitive skills but with no direct connection to an engineering design process.

Students are required to demonstrate higher order cognitive skills in at least half of the steps in the engineering design process in suggesting an improvement to an everyday item.

Students are required to demonstrate higher order thinking skills in the engineering design process while using the full complement of design steps, well as iterative thinking. Students demonstrate the process of an everyday technology of their choosing and ideas that could improve the technological device or item.

#7 Assessment of STEM Learning

Student learning is assessed infrequently and with traditional measures (quizzes, multiple choice tests).

Student learning is assessed periodically with at least one performance-based assessment task.

Student learning is regularly assessed with at least one performance-based task tied to a well-developed rubric.

Student learning is regularly assessed with multiple indicators of success including more than one authentic, performance-based task, presentations and portfolio entries tied to well-developed rubrics requiring students to apply real-world knowledge/skills.

#8 Connections to STEM Partners

No opportunities for students to benefit from STEM partnerships with other schools, community resources, professional organizations, higher ed or businesses.

Students are engaged in a STEM experience resulting from a STEM partnership.

Students are engaged in multiple STEM experiences resulting from two or more STEM partnerships.

Students regularly complete self-directed, authentic STEM experiences resulting from well-developed partnerships that are purposeful, monitored and evaluated.

#9 Degree of Technology Integration

No opportunities or resources for students to use technology to support scientific practices and cognitive skills. Technology is used as a demonstration tool in a teacher-centered environment.

Students are provided sufficient resources to support technology integration and are frequently required to use technology to support scientific practices and cognitive skills. Teachers are provided sufficient technology training and support.

Students are provided high quality resources and teachers have access to high quality training to support technology integration. Students regularly use technology to support scientific practices and cognitive skills and apply these transferable skills to solve real world problems in a student-centered environment.