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| **Effective STEM Experiences Rubric**  **Evaluation Guidelines: Accomplished** - Major Focus, Consistent, Observable Evidence **Emerging** - Minor Focus, Fine-Tuning, Refining **Limited** - Early Development, Experimental Focus, Minimal Focus | **Accomplished** | **Emerging** | **Limited** | **N/A** |
| **PROGRAM STRUCTURE**  |
| **Problem and/or Project Based** - a problem solved or project is designed during the experience; finding the solution involves hypotheses, testing, analyses, failures, redesign and iterations etc. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Inquiry / Evidence based**- investigations / trials are student centered, developed, implemented and priority is given to student observations and conclusions that are backed by empirical data/evidence. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Real Life / Authentic** - problem and/or solution is relevant to local and/or global community and examined through an overarching purpose/theme. (Big Idea) Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Student Driven** - students are the main project planners and executers of the plan. Parameters can be set by the experience. (Student planning versus Adult directed) Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Advancement** - opportunities for advancing to higher levels of experiences are based on meeting program specified criteria. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Learning Environment** - is altered or external location is part of the experience. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Integrated Content**   |
| **STEM** - involves the integration of the four disciplines: Science, Technology, Engineering, and Math. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Science** - involves a primary focus on the physical sciences (physics, chemistry, earth sciences) and/or life sciences (biology, botany, zoology) and NGSS science practices. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Technology** - involves a primary focus on the selection and application of multiple technology tools and resources. (computer science, data programming, web design, hardware, software, and selection ) Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Engineering** - involves a primary focus on demonstrating thinking skills while applying the engineering design process and NGSS engineering practices. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Math** - involves a primary focus on the skills and application of mathematical practices. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Interdisciplinary** - aligned with content from non-STEM disciplines. (English/language arts, writing, social studies, art, music, etc.) Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **21st Century Skills**   |
| **Communication** - provides opportunities to effectively articulate thoughts and ideas in a variety of ways (oral, written, non-verbal, digital, and including listening, presenting evidence, advocating ideas.), with diverse audiences  Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Collaboration** - involves team based work, that holds all accountable for being, respectful, responsible, while appreciating contributions of all. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Critical Thinking / Problem Solving**- involves effective reasoning, systems thinking, making judgments, decisions and solving problems. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Creativity and Innovation** - create, develop and implement new ideas; use variety of creation techniques; elaborate, refine, analyze own ideas to improve them. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Student Impact**  |
| **Inclusive Curriculum and Culture** - designed to be engaging to populations typically underrepresented in STEM. (racial, gender, socio-economic, special needs, etc.) Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Creates Career Awareness** - increases student awareness of the possibilities for their future STEM careers and education requirements. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Adult Engagement**  |
| **Adult Facilitators** - adults are present to facilitate and guide student-centered activities as coaches and supporters of the experience. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **STEM Professionals** - adult STEM professionals (retired, employed, or college students) serve as mentors, tutors, coaches or speakers during student-centered experiences, and include under represented populations. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Program Evaluation / Assessment / Measurability**  |
| **Quantitative Measures** - establishes measures and tracks results of program effectiveness (grades, STEM skills, test scores, attendance, discipline referrals, etc.) broken out by age, race, gender, SES, special needs, etc. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Attitudinal Measures** - establishes measures and tracks results of program effectiveness on the participant attitudes (STEM Subjects, STEM Careers, further education, etc.) by age, race, gender, SES, special needs, etc. Comment: | 🞏 | 🞏 | 🞏 | 🞏 |
| **Student Action Oriented Decisions** - tracks students decisions/actions post program (program of study selection, schools selection, career selection, additional education, graduation rates, etc.).  Comment: | 🞏 | 🞏 | 🞏 | 🞏 |

**You can find a Word file for the rubric at** [**http://greatercincystem.org/new\_stem\_resources.php**](http://greatercincystem.org/new_stem_resources.php)

**You can use the on-line version at** [**http://greatercincystem.org/new\_stem\_rubric.php**](http://greatercincystem.org/new_stem_rubric.php)

**Purpose, Objectives, Scales and Directions**With the overall goal of increasing the number of students prepared for and interested in STEM studies and careers, the Greater Cincinnati STEM Collaborative has developed a rubric that provides a definition for “effective” STEM experiences. Engaging students in high quality STEM experiences is a proven tactic to meet our overall goal. Researching best practices across the country and tailoring it to meet the needs of our region developed the rubric.