# Georgia STEM and STEAM Certification

For more detailed information regarding Georgia STEM or STEAM Certification requirements review the posted continuums for your grade level.

**Vision and Culture-** The vision for STEM or STEAM is clearly defined and a STEM or STEAM culture has been established.

**STEM/ STEAM Students-** STEM/ STEAM students are identified by a school designed selection process that has been vetted with successful longitudinal evidence.

**Non-traditional student participation-** The non-traditional student participation reflects the diversity and gender of the school.

**Characteristics of the Curriculum-** STEM or STEAM students are regularly exposed to a unique and explicit curriculum that is different from non-STEM or STEAM students and there is evidence of its sustainability (three plus years).

**Teacher Content Knowledge-** STEM/ STEAM teachers *are working toward* increasing content knowledge in science, math, (and the arts) through multiple means.

**Teacher Professional Learning-** Teachers have ongoing STEM/ STEAM professional learning as it relates to the school's identified STEM/ STEAM focus area.

**Teacher Collaboration-** Teachers collaborate at least weekly to plan integrated lessons, share/co-create STEM or STEAM activities, and plan learning outcomes.

**STEM/ STEAM Pathways-** STEM and STEAM students complete a STEM CTAE, science and mathematics advanced academics, or fine arts (STEAM only) pathway. High school only.

**Math, Science, and Fine Arts Instruction-** All STEM students are enrolled in AP/IB/Dual Enrollment math & science courses (math and science courses for elementary and middle school prepare students for the next grade band). STEAM students participate in math, science, and fine arts enrichment opportunities and are accelerated through differentiation. Students receive daily-integrated math, science and fine arts instruction.

**STEM/ STEAM Competitions-** All STEM students participate in STEM competitions on-site/online STEM exhibits, and/or in state and national STEM forums. All STEAM students participate in STEM, STEAM, and fine arts competitions, exhibits, forums and performances at the school, district, state and/or national.

## Project/Problem-Based Learning *and the use of the arts as a presentation tool (STEAM)-* Short and long-term projects/problems are implemented throughout the school year incorporating student-generated ideas that are standards-based, multidisciplinary and real-world. Students articulate the relationship among the concepts they learned in math, science, and, for STEAM, the fine arts to their created projects. STEAM students present content learned through an art form as regular practice. Documentation of PBL learning is evident through the use of student STEM/STEAM Journals.

## Business, Community, and Post-Secondary Partnerships- Multiple business, community, (arts), and post-secondary partnerships are on-going and are involved by directly connecting to in-class instruction, project/problem-based learning, and exposing students to STEM and STEAM careers.

## STEM/ STEAM Integration- Students receive daily instruction that supports a STEM/ STEAM project correlated to current math, science, and, for STEAM, fine arts standards. Instruction is multidisciplinary and includes engineering practices.
Students are able to clearly articulate an understanding of the math, science, and for STEAM fine arts concepts being studied. Evidence of integrated lessons must be documented through the use of student STEM/STEAM Journals.

## STEM/ STEAM Labs- The STEM/ STEAM lab(s) have technology access and resources and are used by multiple teachers for collaboration, project work, virtual collaboration, and can be used as exhibition and, for STEAM, a performance space.

## Student internships and/or capstone project- 100% of STEM/ STEAM students complete an internship and/or capstone project.

## Technology Integration- Technology use is ubiquitous throughout STEAM classrooms and students are producers and not just consumers of digital content. Technology is used to collect and analyze data.

## Student Rigor & Relevance and Instructional Quality- Classroom instruction is predominantly student centered and students have the competence to think in complex ways and apply the knowledge and skills they have acquired. When confronted with perplexing unknowns, students create solutions and take action that further develops their skills and knowledge.

## Investigative Research- STEM and STEAM students conduct investigative research where they make claims, collect evidence, analyze data, and argue from evidence. Students communicate results via written, oral, and digital presentations and enter their research in a science, math, and/or engineering competition. Students must have evidence of ongoing research and data collection documented in their STEM/STEAM Journals.

## Accountability- Schools determine the evidence that STEM and STEAM students are increasing in academic growth.