

# Performance Standards

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**cognia**<sup>™</sup>

Charter School  
Authorizer

Corporations

## **STEM Certification**

Early Learning

Education Service  
Agencies

Postsecondary

Schools

Special Purpose

Systems

In 2018, leading education nonprofits AdvancED® and Measured Progress® came together. With more than a century of experience in accreditation and school improvement and decades of leadership in student assessment solutions, the new organization—Cognia™—brings institutions around the world a new, holistic way to view school performance and student achievement.

To assure that our Performance Standards remain relevant and forward-thinking, we undertake review and development of our Standards on a recurring 5-year cycle. We expect to publish new Cognia standards early in 2021; accreditation reviews based on the new standards will begin in school year 2022-23. The STEM Certification Standards in this document remain in effect until then.

Organizational improvement that results in future readiness for all learners should be the goal of STEM-focused institutions. The journey toward successful implementation may look different for each institution, but should always include measures of quality for the learning environment. *Cognia's STEM Certification Standards* support this process by providing a set of evaluative criteria that provides a foundation for building a high quality STEM ecosystem. Based on research and evidence-based practice, the STEM Standards are a powerful tool for driving change management.

Cognia is devoted to meeting the unique needs of STEM-focused institutions that we serve. Every five years, we use a process to review, revise, and improve our Standards to ensure that they remain relevant and support institutions in improving outcomes for all learners. Our Standards do not represent a comprehensive picture of STEM in K-12 settings. Instead, we use the following question to drive our work: What kind of learning system will support future ready students at all levels?

The *Cognia STEM Certification Standards* embody our belief that high quality learning can transform lives, communities and the world.

## Anatomy of the Cognia STEM Certification Standards

The current STEM Standards for K-12 schools and programs are organized under four Domains:

- 1 STEM Community
- 2 STEM Learning Culture
- 3 STEM Experiences
- 4 STEM Outcomes

The Domains are foundational elements that define structures within a quality STEM learning ecosystem. These structures support learner readiness for future opportunities aligned to STEM pathways. Each Domain contains four STEM Standards, which are featured in the following pages. The STEM Standards also contain concepts that serve as a roadmap for implementing high quality STEM practices and processes. The STEM Standards are the evaluative criteria that allow STEM Certification Review Teams to provide feedback that validates effective practices and sheds light on areas that represent opportunities for continued improvement.

# 1

## STEM Community Domain

Many stakeholders play a key role in building and sustaining a community of support for STEM learning. Institutions and programs geared toward providing a strong STEM education should strive to include all learners, paying close attention to those groups often marginalized in STEM fields. To maximize students' STEM learning outcomes, educators should regularly engage in collaborative planning as a professional learning community to develop an interdisciplinary curriculum that emphasizes high-quality, problem-based instruction. Schools and programs should partner with community organizations to support and sustain STEM initiatives, and schools should establish distributed models of leadership to plan for, implement, and sustain STEM programs and practices.

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Standard 1: School/program provides equitable opportunities for students to engage in high quality STEM learning.

Standard 2: STEM educators collaborate to develop, implement, and improve high quality STEM learning activities.

Standard 3: School/program engages diverse STEM community in order to support and sustain STEM programs and initiatives.

Standard 4: School/program has established a shared vision for STEM and has leadership structures to support effective implementation.

# 2

## STEM Learning Culture Domain

Learner-centered environments should provide opportunities for students to develop independence and to take responsibility for their own work. Further, quality STEM learning environments should engage students in inquiry processes that promote deep thinking in social learning contexts. “Technology” in the STEM learning environment is not narrowly-defined as digital devices and software applications, but extends to the use of tools for learning that help students build skills, create original works, and develop solutions for complex problems. Within this active STEM learning environment, children are able to engage and think deeply while applying knowledge and skills to real-world challenges. Students should regularly engage in activities that meet the diverse needs and styles of learners by fostering independent critical thinking as well as transformative collaboration.

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- Standard 5: Leaders ensure that all stakeholders have ongoing opportunities to access information and learn about STEM implementation.
  
- Standard 6: Educators and leaders participate in an ongoing system of STEM-specific professional learning.
  
- Standard 7: Students engage collaboratively in authentic inquiry during ongoing units of study.
  
- Standard 8: Students engage in self-directed STEM learning guided by educators who are effective facilitators of learning.

# 3

## STEM Experiences Domain

One of the challenges facing our society presently is the need to prepare more students for the realities of an uncertain future. A key focus of international policy initiatives to improve STEM education has been the need to prepare today's learners for the 21st Century economy. Though rapid changes in technology and the economy make it difficult to predict what jobs may look like even a decade from now, we do know that knowledge and skills associated with STEM fields will play an ever-increasing role. As such, it is important that communities are able to facilitate STEM learning experiences for all children, beginning at and preschool and continuing through post-graduate levels. In this way, organizations, institutions, and practitioners that collaborate to create and sustain STEM programs play a vital role in the educational and economic success for our students. STEM curriculum and programming has the opportunity to inspire and engage due to the connectedness of the STEM disciplines to the real world.

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- Standard 9: School/program provides within-school and extra-curricular opportunities for students to extend STEM learning.
  
- Standard 10: Students demonstrate their learning through performance-based assessments and have opportunities to develop self-assessment and self-monitoring skills.
  
- Standard 11: STEM learning experiences integrate all STEM disciplines with an emphasis on processes and practices associated with STEM.
  
- Standard 12: School/program provides high quality STEM courses and curriculum aligned to recognized standards and organized into interdisciplinary frameworks.

# 4

## STEM Outcomes Domain

A vital component to the success of STEM schools and programs is their ability to effectively drive improvement. Clear frameworks and processes help to structure and guide implementation for all stakeholders. Effective professional development programs coupled with resources and support build internal and external capacity for implementation. It is also important that leaders set clear expectations for implementation and performance and that there are strategies in place to gather data for quality assurance. Finally, program evaluation and improvement planning are essential to ensuring that the organization is on track in meeting its goals and targets for growth, quality, and sustainability. Ultimately, the value of educational experiences is measured in terms of real learning outcomes. STEM curriculum and programming should have clear connections to outcomes associated with success at progressive levels of learning and work.

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- Standard 13: Students demonstrate STEM content knowledge representative of STEM literacy outcomes that prepare them for the next level of learning and work.
- Standard 14: Students develop STEM skills and cross-cutting competencies that support workforce readiness.
- Standard 15: School/program engages in a continuous improvement process for STEM.
- Standard 16: School/program conducts evaluative activities to ensure the effectiveness of STEM implementation.

## About Cognia

Cognia™ is a global nonprofit that has the knowledge to help schools improve. Cognia offers accreditation and certification, assessment, professional learning, and improvement services. The result of the merger of AdvancED and Measured Progress, Cognia was formed to bridge the gap between school evaluation and student assessment. We are the largest education improvement organization in the world and an undeniable force for enhancing schools, engaging students, and driving better outcomes for all.

**Find out more at [cognia.org](https://cognia.org).**



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