

# Executive Summary

## WHAT IS STEAM?

STEAM is an acronym for the transdisciplinary integration of the five disciplines of Science, Technology, Engineering, Arts, and Mathematics. The STEAM acronym is built upon the STEM acronym, and often they are used interchangeably. STEAM education places a priority on the study of science and math with purposeful integration of the arts, technology, and the engineering design process. STEAM education is an opportunity for students to collaboratively solve engaging and relevant problems using innovation and creativity. The engineering design process allows students to identify problems, design possible solutions, test and evaluate those solutions until the best solution is discovered. STEAM in the classroom engages students in real-world situations and allows students to experience solution-finding for problems that are relevant to today's world.

Best practices in STEAM education wrap around a transdisciplinary approach where rigorous academic concepts are blended with real-world applications. STEAM allows students to make connections among school, community, work, and the larger world in which they live. Best practices in STEAM education allow for the inclusion of the arts and the humanities in order to broaden and deepen the scope of instruction. Best practices in STEAM education convey not only skills such as critical thinking, problem-solving, communication, collaboration, and creativity, but also personal competencies such as adaptability, resiliency, perseverance, courage, and optimism.

## STEAM-MINDED WV

West Virginians are aware of the changes in the workplace and the global economy. Education is the driving force for students to keep pace with the evolving landscape of business and careers. Many factors influence the need for educators to make intentional choices when developing curriculum and establishing a culture that promotes a comprehensive approach to learning that effectively weaves content disciplines, collaboration, and essential skills. West Virginia students should be prepared to become productive citizens in a world driven by a STEM focused marketplace. STEAM-minded WV is a conduit to equip students, families, and school personnel with the tools necessary to become active learners and to maintain a competitive edge in the world.



## HISTORY

In December 2017, Governor Jim Justice issued a proclamation instructing the West Virginia Department of Education (WVDE) to establish the West Virginia Advisory Council for a Comprehensive Approach to STEM Education. The Advisory Council's purpose is to ensure STEM work across the state is coordinated, connected, and inclusive. In February 2018, WVDE convened a joint meeting of the Advisory Council workgroups to build a shared understanding of the vision, mission, and goals; refine workgroup activities and outputs; and develop work plans to achieve goals. In May 2019, the Advisory Council workgroups completed their work, and submitted a report to WVDE detailing recommendations to promote STEM in West Virginia. STEAM-minded WV is the culmination of the Advisory Council workgroups' recommendations.

## VISION

The WVDE will ensure West Virginia educators are well-prepared to provide high-quality STEAM education that honors the core academic disciplines and models trans-disciplinary real world applications for learning; improve students' STEAM experiences and STEAM literacy through the use of proven educational STEAM practices; improve students' understanding of STEAM workforce needs and dispositions towards a future in STEM; assist local county boards of education that are implementing STEAM initiatives; and support local county boards, schools, teachers, students, and families in delivering best practices, instructional resources/strategies, extended learning opportunities, technological supports, professional learning, and a more powerful focus to support the achievement of STEAM-minded learners.

## MISSION

The West Virginia Board of Education (WVBE) and the WVDE, aligning to the goals of the joint strategic plan, support STEM-minded learners in the public school system. To honor the commitment to all stakeholders the WVDE will partner with county school systems and other related, interested, organizations to:

- » provide county school systems with the tools to provide a high-quality STEAM education that honors the core academic disciplines;
- » support county school systems in developing resources, professional learning supports, and core curriculums that promote interdisciplinary real-world applications for learning;
- » promote STEAM literacy by assisting local county boards of education, educators, students, and families in implementing STEAM initiatives that provide extended learning opportunities;
- » promote the development of county-level leadership teams focused on critical components and implementation of STEAM focused education;
- » promote the utilization of extended learning through various delivery models;
- » recognize the importance of the expansion of a high-quality STEAM education to reach all West Virginia students, many of whom are often underrepresented in STEM fields.

To achieve these goals, STEAM-minded WV will honor the strategic plan of the WVBE and WVDE by providing an effective and quality system for learning that supports and empowers West Virginia students to develop the knowledge and skills to become lifelong learners; promote a culture of responsibility and personal well-being to become engaged community members; and prepare for the future with a pathway to workforce readiness.

