HB17-1201 Science Technology Engineering Math Diploma Endorsement

Representatives **COLEMAN**, LUNDEEN
Senators **ZENZINGER, PRIOLA,** TODD

PURPOSE

This bill seeks to award a STEM diploma endorsement to high school graduates for successful completion of an academic portfolio which includes: high proficiency in minimum state graduation requirements; a coherent sequence of 12 credit hours in Science, Technology, Engineering and Mathematics; successful completion of the STEM competency framework and Measures of Mastery and culminating capstone project.

BACKGROUND

Problem: Colorado high school graduates are not properly prepared to enter STEM-related college degree programs or the high-tech Colorado workforce because quality STEM programs are not readily available in public schools.

A STEM diploma endorsement program will encourage public schools to integrate quality STEM education deeply into the curriculum and engage students in active pursuit of technical expertise and 21st Century skills. The STEM diploma endorsement program will:

- Encourage students to pursue rigorous coursework in Science, Technology, Engineering and Math;
- Teach practical hands-on skills and industry-recognized experience in one or more STEM-related fields;
- Create a stronger, more defined pathway to STEM competency.
- Increase the number of high-tech graduates from Colorado high schools;
- Provide a stronger candidate pool for Colorado employers;
- Lower remediation rates for incoming college students who receive the endorsement.

BILL ACTION

- This bill outlines the process and requirements for local education providers to align their program to award STEM diploma endorsements to qualified high school graduates.
- Local education providers will collaborate with local business leaders and community members to specify the STEM Competency Framework and Measures of Mastery.
- This bill will provide incentive for schools and districts to improve their STEM education opportunities for middle and high school students.
- This bill does not require a fiscal note.

SUPPORT

- Colorado Succeeds
- America Achieves/Colorado Educator Voice Fellowship
- Democrats for Education Reform

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Great Schools are Good Business

COLORADO EDUCATOR VOICE FELLOWSHIP
AMERICA ACHIEVES

CEA COLORADO EDUCATION ASSOCIATION

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FAQ'S

1. What are the criteria for earning the STEM Diploma Endorsement?
Granting school districts, BOCES, or institute charter high schools may grant high school diplomas with STEM endorsements to qualified students that:

- Meet minimum high school graduation requirements at a high level of proficiency (as specified by the LEP);
- Complete a coherent sequence of at least 12 credits hours in STEM courses (as specified by the LEP);
- Achieve a minimum score on SAT or ACT;
- Achieve a minimum score on an AP Math or IB Math test; and
- Complete a capstone project.

2. Why is Math the only STEM subject included in the bill?
Math is the root and leading indicator of all STEM education. It is the primary content that college admissions officers look for to determine student acceptance in STEM universities and colleges.
Math is a K-12 linear cumulative subject that shows successive academic performance over time throughout the whole of a student's educational career, whereas the other STEM subjects are typically 1-2 year pathways. Math is the foundational element of all the STEM subjects and demonstrates qualitative and quantitative understanding in STEM.
**Important to remember: The LEP has the option to include other subject assessments in setting their criteria to award the endorsement.

3. Why is a score of 4 selected for the Math AP test?
Most STEM higher education institutions require a score of 4 or higher for an incoming freshman to be placed in sophomore level classes, including Colorado School of Mines and University of Colorado-Boulder. Students earning an AP score of 3 or lower are generally enrolled in the regular freshman courses to provide repetition of the subject content.
A score of 4 or 5 earns college credit at a mid-level to top-tier STEM school, demonstrates student drive and motivation to succeed and pursue high-level learning and shows strong mastery of the content material.

4. Is Computer Science included in the definition of Mathematics as related to assessments in the bill?
Computer Science is a separate content area with distinct learning objectives. In STEM fields, computer science would fall within the "Technology" category. The Computer Science Teachers Association has adopted an interim set of standards outlining skills for 21st century learners: https://www.csteachers.org/?page=CSTA_Standards.