First Regular Session
Seventy-first General Assembly
STATE OF COLORADO

INTRODUCED

LLS NO. 17-0896.02 Julie Pelegrin x2700 **HOUSE BILL 17-1201**

HOUSE SPONSORSHIP

Coleman, Lundeen

SENATE SPONSORSHIP

Zenzinger and Priola, Todd

House Committees
Education

Senate Committees

A BILL FOR AN ACT

CONCERNING AUTHORIZATION FOR GRANTING A HIGH SCHOOL DIPLOMA ENDORSEMENT IN THE COMBINED DISCIPLINES OF SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS.

Bill Summary

(Note: This summary applies to this bill as introduced and does not reflect any amendments that may be subsequently adopted. If this bill passes third reading in the house of introduction, a bill summary that applies to the reengrossed version of this bill will be available at http://leg.colorado.gov.)

The bill authorizes a school district, board of cooperative services, or institute charter high school (local education provider) to grant a high school diploma endorsement in science, technology, engineering, and mathematics (STEM) to students who demonstrate mastery in STEM. To obtain the endorsement, a student must complete the high school

graduation requirements at a high level of proficiency, complete 12 credit hours in STEM courses, achieve a minimum score specified in the bill on one of several specified mathematics assessments, and successfully complete a final capstone project. To successfully complete the capstone project, the student must achieve a high proficiency level of mastery, as set by the local education provider, for each of the competencies specified in the bill. The local education provider is required to work with STEM-related business and industrial leaders and institutions of higher education in setting the high proficiency levels of mastery. The local education provider must annually notify students and their parents beginning in sixth grade of the requirements for obtaining a STEM diploma endorsement.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. In Colorado Revised Statutes, **add** 22-7-1009.5 as follows:

22-7-1009.5. Diploma endorsement - science, technology, engineering, and mathematics - definitions. (1) AS USED IN THIS SECTION UNLESS THE CONTEXT OTHERWISE REQUIRES:

(a) "GRANTING LOCAL EDUCATION PROVIDER" MEANS A LOCAL SCHOOL BOARD, BOCES, OR INSTITUTE CHARTER HIGH SCHOOL THAT CHOOSES TO GRANT A STEM DIPLOMA ENDORSEMENT TO A STUDENT WHO DEMONSTRATES MASTERY IN THE STEM DISCIPLINES AS DESCRIBED IN THIS SECTION.

(b) "STEM" MEANS THE COMBINATION OF THE DISCIPLINES OF SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS.

(2) A LOCAL EDUCATION PROVIDER MAY GRANT A DIPLOMA ENDORSEMENT IN STEM TO A GRADUATING HIGH SCHOOL STUDENT WHO DEMONSTRATES MASTERY IN THE STEM DISCIPLINES. TO OBTAIN AN ENDORSEMENT IN STEM, A GRADUATING STUDENT MUST:

(a) MEET THE MINIMUM HIGH SCHOOL GRADUATION REQUIREMENTS AT A HIGH LEVEL OF PROFICIENCY AS SPECIFIED BY THE

GRANTING LOCAL EDUCATION PROVIDER;

(b) SUCCESSFULLY COMPLETE A COHERENT SEQUENCE OF COURSES OF AT LEAST TWELVE CREDITS IN THE AREAS OF SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS AS SPECIFIED BY THE GRANTING LOCAL EDUCATION PROVIDER;

(c) DEMONSTRATE PROFICIENCY IN MATHEMATICS BY:

(I) ACHIEVING A SCORE OF TWENTY-EIGHT OR HIGHER ON THE MATHEMATICS PORTION OF THE ACT COLLEGE READINESS ASSESSMENT;

(II) ACHIEVING A SCORE OF SIX HUNDRED OR HIGHER ON THE MATHEMATICS PORTION OF THE COLLEGE READINESS ASSESSMENT PROVIDED BY THE COLLEGE BOARD, COMMONLY KNOWN AS THE SAT;

(III) ACHIEVING A SCORE OF FIVE OR HIGHER ON THE MATHEMATICS PORTION OF THE INTERNATIONAL BACCALAUREATE TEST; OR

(IV) ACHIEVING A SCORE OF FOUR OR HIGHER ON THE ADVANCED PLACEMENT MATHEMATICS ASSESSMENT; AND

(d) SUCCESSFULLY COMPLETE A FINAL CAPSTONE PROJECT, WHICH IS A CULMINATING EXHIBITION OF THE STUDENT'S PROJECT OR EXPERIENCE THAT DEMONSTRATES ACADEMIC AND INTELLECTUAL LEARNING. TO SUCCESSFULLY COMPLETE A FINAL CAPSTONE PROJECT, THE STUDENT MUST ACHIEVE A HIGH PROFICIENCY LEVEL OF MASTERY, AS SET BY THE GRANTING LOCAL EDUCATION PROVIDER, FOR EACH OF THE FOLLOWING COMPETENCIES:

(I) INQUIRY-BASED LEARNING, WHICH IS DEMONSTRATED THROUGH THE CAPSTONE PROJECT BY ASKING QUESTIONS AND DEFINING PROBLEMS;

(II) CREATIVE PROBLEM-SOLVING, WHICH IS DEMONSTRATED

THROUGH THE CAPSTONE PROJECT BY DEVELOPING AND APPLYING SCIENTIFIC AND MATHEMATICAL MODELS TO EXPLAIN COMPLEX IDEAS AND SOLUTIONS;

(III) EXPERIMENTATION, WHICH IS DEMONSTRATED THROUGH THE CAPSTONE PROJECT BY PLANNING AND CARRYING OUT INVESTIGATIONS;

(IV) CRITICAL THINKING, WHICH IS DEMONSTRATED THROUGH THE CAPSTONE PROJECT BY ANALYZING AND INTERPRETING DATA AND COMMUNICATING CONCLUSIONS;

(V) DEDUCTIVE AND INDUCTIVE REASONING, WHICH IS DEMONSTRATED THROUGH THE CAPSTONE PROJECT BY USING MATHEMATICS AND COMPUTATIONAL THINKING;

(VI) UNDERSTANDING OF ENGINEERING PRINCIPLES, WHICH IS DEMONSTRATED THROUGH THE CAPSTONE PROJECT BY CONSTRUCTING EXPLANATIONS AND DESIGNING SOLUTIONS; AND

(VII) EFFECTIVE COMMUNICATION SKILLS, WHICH ARE DEMONSTRATED THROUGH THE CAPSTONE PROJECT BY ENGAGING IN ARGUMENT FROM EVIDENCE.

(3) EACH GRANTING LOCAL EDUCATION PROVIDER SHALL WORK WITH STEM-RELATED BUSINESS AND INDUSTRIAL LEADERS IN THE LOCAL COMMUNITY AND WITH APPROPRIATE INSTITUTIONS OF HIGHER EDUCATION TO ESTABLISH THE HIGH PROFICIENCY LEVELS OF MASTERY THAT A STUDENT MUST DEMONSTRATE IN EACH OF THE COMPETENCIES DESCRIBED IN SUBSECTION (2)(d) OF THIS SECTION.

(4) EACH GRANTING LOCAL EDUCATION PROVIDER SHALL ANNUALLY PROVIDE TO STUDENTS ENROLLED IN GRADES SIX THROUGH TWELVE AND THEIR PARENTS INFORMATION CONCERNING THE REQUIREMENTS FOR OBTAINING THE STEM DIPLOMA ENDORSEMENT.

SECTION 2. Safety clause. The general assembly hereby finds, determines, and declares that this act is necessary for the immediate preservation of the public peace, health, and safety.