

**First Regular Session
Seventy-first General Assembly
STATE OF COLORADO**

PREAMENDED

*This Unofficial Version Includes Committee
Amendments Not Yet Adopted on Second Reading*

LLS NO. 17-0202.01 Brita Darling x2241

HOUSE BILL 17-1184

HOUSE SPONSORSHIP

Duran,

SENATE SPONSORSHIP

Grantham,

House Committees

Education
Appropriations

Senate Committees

A BILL FOR AN ACT

101 **CONCERNING DEVELOPING ADDITIONAL RESOURCES FOR MODERN**
102 **TECHNOLOGY EDUCATION IN PUBLIC SCHOOLS.**

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/>.)

Under current law, the state board of education (state board) must, by July 1, 2018, review and revise, as necessary, the state academic standards. The bill directs the state board, in the course of revising the academic standards, to incorporate into the standards for each subject skills relating to the use of information and communications technologies to find, evaluate, create, and communicate information.

Shading denotes HOUSE amendment. Double underlining denotes SENATE amendment.
*Capital letters indicate new material to be added to existing statute.
Dashes through the words indicate deletions from existing statute.*

The bill directs the department of education (department) to create a publicly available resource bank of materials pertaining to computer science programs, including model standards, samples of curricula, and materials for professional educator development. The department must work with experts in creating and compiling the information. The resource bank is to be available by July 1, 2018. Each school district, charter school, and board of cooperative services may choose whether to provide computer science courses and whether to use the materials in the resource bank.

In addition, the bill creates a grant program in the department that awards grants that will enable a teacher or teachers in a school district to teach computer science courses. The bill defines computer science education.

A school district may apply for a grant on behalf of a teacher or teachers. The grant may be used for tuition, fees, training program costs, and books for postsecondary computer science course work that leads to mastery in a computer science content area, computer science training programs, computer science degrees, or industry-recognized certificates in computer science. A grant may also be awarded to the school district for high-quality training programs offered to teachers in the district that enable those teachers to teach computer science courses.

The department will administer the grant program pursuant to rules adopted by the state board relating to the application process, the amount and duration of the grants, and the uses of the grant money.

The department will accept and review grant applications and make recommendations to the state board concerning the award of grants. In awarding grants, the state board may give priority to school districts that meet certain qualifications specified in the bill.

If money is appropriated for the grant program, the state board shall award grants pursuant to the program rules.

The department shall report annually to the education committees of the general assembly concerning the implementation of the grant program.

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

2 **SECTION 1. Legislative declaration.** (1) The general assembly
3 finds that:

4 (a) The ability to use and understand technology is a critical skill
5 that students need to achieve success in school, in the workplace, and in
6 their personal lives. While the state board of education has developed and

1 adopted robust state academic standards in ten subjects, these standards
2 have not been updated with guidelines for digital literacy.

3 (b) School districts and public schools that choose to offer
4 computer science courses and teachers who teach these courses do not
5 have access to a set of rigorous grade-level expectations for mastery of
6 this discrete subject area;

7 (c) Computer science is a critical area of growth for Colorado's
8 economy, and thousands of computing jobs with businesses in the state
9 remain unfilled each year. Providing rigorous standards for computer
10 science courses and increasing access to high-quality computer science
11 training programs will help ensure that more students master the
12 computer science skills that can lead to rewarding, high-paying, and
13 in-demand careers.

14 (d) Many students do not have access to technology and computer
15 science training, which results in a lack of gender and ethnic diversity in
16 science, technology, engineering, and mathematics (STEM) careers. In
17 Colorado, Hispanic workers comprise only six percent of the employees
18 in computer, engineering, and science occupations. Also, men are more
19 than twice as likely to be employed in STEM jobs than women. Women
20 are forty-six percent of the Colorado workforce, but less than a third of
21 those working in STEM jobs. Providing voluntary standards and
22 materials to school districts, boards of cooperative services, and charter
23 schools will help provide more equitable access to computer science
24 courses in public schools throughout the state.

25 (e) In order to increase students' access to technology and
26 computer science education, public school teachers must have the
27 opportunity to obtain additional postsecondary education, including

1 computer science degrees, industry-recognized certificates, or other
2 rigorous computer science training, that enables the teachers to teach
3 computer science courses in public schools.

4 (2) The general assembly finds, therefore, that it is in the best
5 interests of the people of the state of Colorado to include guidelines
6 relating to the use of information and communications technologies
7 within the state academic standards and to direct the department of
8 education to provide a publicly available resource bank of **sample**
9 academic content standards in computer science and **sample** course
10 materials for computer science courses for voluntary use by school
11 districts, boards of cooperative services, charter schools, and the public.

12

13 **SECTION 2.** In Colorado Revised Statutes, 22-7-1005, **amend**
14 (3)(e) as follows:

15 **22-7-1005. Preschool through elementary and secondary**
16 **education - aligned standards - adoption - revisions.** (3) The state
17 board in adopting the preschool through elementary and secondary
18 education standards shall:

19 (e) Ensure that, in addition to measuring a student's subject matter
20 knowledge, the standards, to the extent practicable, will require a student
21 to develop and demonstrate creativity and innovation skills;
22 critical-thinking and problem-solving skills; communication and
23 collaboration skills; social and cultural awareness; civic engagement;
24 initiative and self-direction; flexibility; productivity and accountability;
25 character and leadership; ~~information technology application skills~~ THE
26 ABILITY TO USE INFORMATION AND COMMUNICATIONS TECHNOLOGIES TO
27 FIND, EVALUATE, CREATE, AND COMMUNICATE INFORMATION; and other

1 skills critical to preparing students for the twenty-first-century workforce
2 and for active citizenship; and

3 **SECTION 3.** In Colorado Revised Statutes, **add 22-2-127.5** as
4 follows:

5 **22-2-127.5. Computer science programs - resource bank.**

6 (1) (a) THE DEPARTMENT SHALL CREATE AND MAINTAIN A PUBLICLY
7 AVAILABLE RESOURCE BANK OF MATERIALS PERTAINING TO COMPUTER
8 SCIENCE COURSES AND PROGRAMS. AT A MINIMUM, THE RESOURCE BANK
9 MUST INCLUDE SAMPLE ACADEMIC CONTENT STANDARDS FOR COMPUTER
10 SCIENCE EDUCATION, SAMPLE PROGRAMS OF INSTRUCTION FOR COMPUTER
11 SCIENCE, SAMPLES OF COMPUTER SCIENCE LEARNING RESOURCES, AND
12 SAMPLE MATERIALS FOR PROFESSIONAL EDUCATOR DEVELOPMENT IN
13 TEACHING COMPUTER SCIENCE. THE DEPARTMENT SHALL ENSURE THAT
14 THE MATERIALS INCLUDED IN THE RESOURCE BANK REPRESENT THE BEST
15 PRACTICES IN TEACHING COMPUTER SCIENCE AND SHALL SEEK INPUT FROM
16 EXPERTS IN THE AREA OF COMPUTER SCIENCE IN CREATING AND COMPILING
17 THE MATERIALS.

18 (b) THE DEPARTMENT SHALL ENSURE THAT THE RESOURCE BANK
19 IS AVAILABLE FOR ACCESS BY SCHOOL DISTRICTS, CHARTER SCHOOLS,
20 BOARDS OF COOPERATIVE SERVICES, AND THE PUBLIC BY JULY 1, 2018.

21 (c) THE DEPARTMENT SHALL IMPLEMENT THE PROVISIONS OF THIS
22 SECTION TO THE FULLEST DEGREE POSSIBLE WITHIN EXISTING RESOURCES.
23 THE DEPARTMENT MAY CONTRACT WITH ONE OR MORE ENTITIES IN
24 IMPLEMENTING THIS SECTION.

25 (2) A SCHOOL DISTRICT, CHARTER SCHOOL, OR BOARD OF
26 COOPERATIVE SERVICES MAY CHOOSE WHETHER TO PROVIDE CLASSES IN
27 COMPUTER SCIENCE AND WHETHER TO USE THE MATERIALS IN THE

1 RESOURCE BANK TO PROVIDE THOSE CLASSES.

2 (3) THE RESOURCE BANK MAY ALSO IDENTIFY EXISTING
3 RESOURCES AND TOOLS THAT PROVIDE OPPORTUNITIES FOR INDUSTRY
4 EXPERTS IN COMPUTER SCIENCE AND TECHNOLOGY TO BE PAIRED WITH A
5 TEACHER IN THE CLASSROOM TO CO-TEACH COURSES IN COMPUTER
6 SCIENCE. THE RESOURCE BANK MAY ALSO INCLUDE A LISTING OF SCHOOLS
7 AND SCHOOL DISTRICTS THAT ARE INTERESTED IN FINDING INDUSTRY
8 EXPERTS WHO WISH TO VOLUNTEER TO CO-TEACH COMPUTER SCIENCE
9 COURSES, AND A LISTING OF INDUSTRY EXPERTS WHO ARE INTERESTED IN
10 VOLUNTEERING TO CO-TEACH COMPUTER SCIENCE COURSES.

11



12 **SECTION 4. Act subject to petition - effective date.** This act
13 takes effect at 12:01 a.m. on the day following the expiration of the
14 ninety-day period after final adjournment of the general assembly (August
15 9, 2017, if adjournment sine die is on May 10, 2017); except that, if a
16 referendum petition is filed pursuant to section 1 (3) of article V of the
17 state constitution against this act or an item, section, or part of this act
18 within such period, then the act, item, section, or part will not take effect
19 unless approved by the people at the general election to be held in
20 November 2018 and, in such case, will take effect on the date of the
21 official declaration of the vote thereon by the governor.