

SENATE SUBSTITUTE
FOR
SENATE COMMITTEE SUBSTITUTE
FOR
SENATE BILLS NOS. 894 & 921

AN ACT

To amend chapters 161 and 170, RSMo, by adding thereto two new sections relating to education curriculum involving science and technology.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF MISSOURI,
AS FOLLOWS:

1 Section A. Chapters 161 and 170, RSMo, are amended by
2 adding thereto two new sections, to be known as sections 161.261
3 and 170.018, to read as follows:

4 161.261. 1. Subject to appropriation, the department of
5 elementary and secondary education shall establish a statewide
6 program to be known as the "STEM Career Awareness Program" to
7 increase STEM career awareness among students in grades six
8 through eight. For purposes of this section, "STEM" means
9 science, technology, engineering, and mathematics.

10 2. The department of elementary and secondary education
11 shall promote the statewide program beginning in the 2019-20
12 school year. The program shall introduce students to a wide
13 variety of STEM careers and technology through an online-based
14 STEM curriculum.

15 3. Before January 1, 2019, the department of elementary and
16 secondary education shall solicit proposals and select a provider

1 for the online program. The program selected shall meet the
2 following criteria:

3 (1) The program introduces students to a wide variety of
4 STEM careers and technologies, including a curriculum explicitly
5 focused on more than eighty different careers and technologies;

6 (2) The curriculum is organized around the concept of
7 solving societal or human-centered problems, instead of focusing
8 solely on scientific concepts. The curriculum shall have at
9 least ten different problems that emphasize different career
10 clusters;

11 (3) The curriculum is designed for flexible implementation
12 in a wide variety of classrooms, including science, math,
13 English, and social studies, through lessons that emphasize the
14 application of STEM careers in these contexts;

15 (4) The curriculum demonstrates how math and language
16 skills appropriate to middle schools are used by STEM careers,
17 making classroom instruction relevant to students interested in
18 STEM careers;

19 (5) The program uses game-based elements to encourage
20 engagement and competition with students and teams, including
21 automated online leaderboards;

22 (6) The program rewards students, in the game format, for
23 accomplishment in demonstrating the application of math and
24 language skills in the contexts of the STEM careers and
25 technologies;

26 (7) The program automatically produces analytic reports for
27 individual students and for classes, including analysis of
28 performance against individual math and language skills

1 objectives;

2 (8) The curriculum is available in a self-paced format over
3 the internet, allowing access to students through individual
4 student accounts anywhere that the students can access the
5 internet;

6 (9) The curriculum includes a narrative soundtrack
7 accompanying and matching all instructional text to assist
8 students in developing reading skills in the context of STEM
9 careers;

10 (10) The program has a validation from a national,
11 third-party nonprofit organization that the program increases
12 STEM career awareness and interest;

13 (11) The program shall be listed as a recommended STEM
14 resource in ACT's "Condition of STEM" 2015 report; and

15 (12) The program includes web-based professional
16 development for school staff.

17 4. Notwithstanding subsections 2 and 3 of this section, the
18 department of elementary and secondary education may choose a
19 third-party nonprofit entity to implement the statewide program,
20 solicit proposals, and select a provider as described under
21 subsection 3 of this section.

22 5. (1) There is hereby created in the state treasury the
23 "STEM Career Awareness Program Fund". The fund shall consist of
24 any appropriations, gifts, bequests, or public or private
25 donations to such fund. The state treasurer shall be custodian
26 of the fund. In accordance with sections 30.170 and 30.180, the
27 state treasurer may approve disbursements of public moneys in
28 accordance with distribution requirements and procedures

1 developed by the department of elementary and secondary
2 education. The fund shall be a dedicated fund and, upon
3 appropriation, moneys in the fund shall be used solely for the
4 administration of this section.

5 (2) Notwithstanding the provisions of section 33.080 to the
6 contrary, any moneys remaining in the fund at the end of the
7 biennium shall not revert to the credit of the general revenue
8 fund.

9 (3) The state treasurer shall invest moneys in the fund in
10 the same manner as other funds are invested. Any interest and
11 moneys earned on such investments shall be credited to the fund.

12 6. The department of elementary and secondary education may
13 promulgate all necessary rules and regulations for the
14 administration of this section. Any rule or portion of a rule,
15 as that term is defined in section 536.010 that is created under
16 the authority delegated in this section shall become effective
17 only if it complies with and is subject to all of the provisions
18 of chapter 536, and, if applicable, section 536.028. This
19 section and chapter 536 are nonseverable and if any of the powers
20 vested with the general assembly pursuant to chapter 536, to
21 review, to delay the effective date, or to disapprove and annul a
22 rule are subsequently held unconstitutional, then the grant of
23 rulemaking authority and any rule proposed or adopted after
24 August 28, 2018, shall be invalid and void.

25 170.018. 1. (1) For purposes of this subsection,
26 "computer science course" means a course in which students study
27 computers and algorithmic processes, including their principles,
28 their hardware and software designs, their implementation, and

1 their impact on society.

2 (2) The department of elementary and secondary education
3 shall, before July 1, 2019, develop a high school graduation
4 policy that allows a student to fulfill one unit of academic
5 credit with a district-approved computer science course for any
6 math, science, or practical arts unit required for high school
7 graduation. The policy shall require that all students have
8 either taken all courses that require end-of-course exams or are
9 on track to take all courses that require end-of-course exams
10 under the Missouri school improvement program.

11 (3) A school district shall communicate to students
12 electing to replace a mathematics unit with a computer science
13 unit that some institutions of higher education may require four
14 units of academic credit in mathematics for college admission.
15 The parent, guardian, or legal custodian of each student who
16 chooses to take advanced computer science in place of a fourth
17 unit of academic credit in mathematics shall sign and submit to
18 the school a document containing a statement acknowledging that
19 not taking a fourth unit of academic credit in mathematics may
20 have an adverse effect on college admission decisions.

21 (4) The department of elementary and secondary education
22 and the coordinating board for higher education shall cooperate
23 in developing and implementing academic performance standards
24 relating to computer science, however, the ultimate
25 responsibility shall remain with the state board of education.

26 2. (1) Before July 1, 2019, the state board of education
27 shall convene a work group to develop and recommend academic
28 performance standards relating to computer science. The state

1 board of education and the work group shall follow the procedures
2 and conduct the public hearings required by section 160.514. The
3 state board of education shall develop written curriculum
4 frameworks relating to computer science that may be used by
5 school districts in accordance with section 160.514.

6 (2) The state board of education shall adopt and implement
7 academic performance standards relating to computer science
8 beginning in the 2020-21 school year.

9 3. Before July 1, 2019, the state board of education shall
10 develop a procedure by which any teacher who holds a certificate
11 of license to teach under section 168.021 and demonstrates
12 sufficient content knowledge of computer science, as determined
13 by the state board of education, shall receive a special
14 endorsement on his or her license signifying his or her
15 specialized knowledge in computer science.

16 4. (1) For purposes of this subsection, "eligible entity"
17 means:

18 (a) A local educational agency, or a consortium of local
19 educational agencies, in the state, including charter schools
20 that have declared themselves local educational agencies;

21 (b) An institution of higher education in the state; or

22 (c) A nonprofit or private provider of nationally
23 recognized and high-quality computer science professional
24 development, as determined by the state board of education.

25 (2) (a) There is hereby created in the state treasury the
26 "Computer Science Education Fund". The fund shall consist of all
27 moneys that may be appropriated to it by the general assembly and
28 any gifts, contributions, grants, or bequests received from

1 private or other sources for the purpose of providing teacher
2 professional development programs relating to computer science.
3 The state treasurer shall be custodian of the fund. In
4 accordance with sections 30.170 and 30.180, the state treasurer
5 may approve disbursements. The fund shall be a dedicated fund
6 and, upon appropriation, moneys in the fund shall be used solely
7 for the administration of grants to eligible entities as
8 described in this section.

9 (b) Notwithstanding the provisions of section 33.080 to the
10 contrary, any moneys remaining in the fund at the end of the
11 biennium shall not revert to the credit of the general revenue
12 fund.

13 (c) The state treasurer shall invest moneys in the fund in
14 the same manner as other funds are invested. Any interest and
15 moneys earned on such investments shall be credited to the fund.

16 (3) The state board of education shall award grants from
17 the computer science education fund to eligible entities for the
18 purpose of providing teacher professional development programs
19 relating to computer science. An eligible entity wishing to
20 receive such a grant shall submit an application to the
21 department of elementary and secondary education addressing how
22 the entity plans to:

23 (a) Reach new and existing teachers with little computer
24 science background;

25 (b) Use effective practices for professional development;

26 (c) Focus the training on the conceptual foundations of
27 computer science;

28 (d) Reach and support historically underrepresented

1 students in computer science;

2 (e) Provide teachers with concrete experience with hands-
3 on, inquiry-based practices; and

4 (f) Accommodate the particular needs of students and
5 teachers in each district and school.

6 5. The department of elementary and secondary education
7 shall promulgate rules to implement the provisions of this
8 section. Any rule or portion of a rule, as that term is defined
9 in section 536.010 that is created under the authority delegated
10 in this section shall become effective only if it complies with
11 and is subject to all of the provisions of chapter 536, and, if
12 applicable, section 536.028. This section and chapter 536 are
13 nonseverable and if any of the powers vested with the general
14 assembly pursuant to chapter 536, to review, to delay the
15 effective date, or to disapprove and annul a rule are
16 subsequently held unconstitutional, then the grant of rulemaking
17 authority and any rule proposed or adopted after August 28, 2018,
18 shall be invalid and void.