

110TH CONGRESS
1ST SESSION

S. 757

To create a national set of effective voluntary national expectations for mathematics and science education in kindergarten through grade 12, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MARCH 5, 2007

Mrs. CLINTON introduced the following bill; which was read twice and referred to the Committee on Health, Education, Labor, and Pensions

A BILL

To create a national set of effective voluntary national expectations for mathematics and science education in kindergarten through grade 12, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “National Mathematics
5 and Science Consistency Act”.

6 **SEC. 2. FINDINGS.**

7 Congress finds the following:

8 (1) The United States has fallen behind other
9 industrialized countries in terms of competing in a

1 global economy. This deterioration is due in large
2 part to the diminishing number of well-trained peo-
3 ple in the fields of mathematics, science, and tech-
4 nology, as well as the decrease in scientific innova-
5 tions generated from the United States in recent
6 years.

7 (2) Not only did the United States produce
8 fewer graduates in mathematics, science, and engi-
9 neering in 2002 than it did in 1985, but the United
10 States is also generating far fewer college graduates
11 in those fields than other countries. In China, 59
12 percent of undergraduates receive degrees in science
13 and engineering and in Japan, 66 percent receive
14 such degrees, but in the United States, only 32 per-
15 cent of undergraduates receive degrees in science
16 and engineering.

17 (3) United States students are scoring far be-
18 hind students in other countries on international
19 mathematics and science assessments. A recent
20 Trends in International Mathematics and Science
21 Study (TIMSS), the largest and most comprehensive
22 comparative international study of education, found
23 that 12th graders in the United States ranked 21st
24 out of 40 industrialized countries on general knowl-
25 edge in mathematics and science. Furthermore, the

1 Programme for International Student Assessment
 2 (PISA), an organization that compiles reports on the
 3 reading and mathematics skills of 15-year-olds,
 4 found that the United States ranked 28th out of 40
 5 nations surveyed in mathematics literacy.

6 (4) In the United States, each State has its
 7 own set of standards and curriculum for mathe-
 8 matics and science education in kindergarten
 9 through grade 12, with its own definition of pro-
 10 ficiency for these standards. When each State's defi-
 11 nition of proficiency is compared to a national
 12 model, less than 40 percent of the students in grade
 13 4, and only 17 percent of the students in grade 12,
 14 reach the national proficiency level in mathematics.
 15 In addition, approximately $\frac{1}{3}$ of the students in
 16 grades 4 and 8, and nearly $\frac{1}{2}$ of the students in
 17 grade 12, do not reach the basic level in science, ac-
 18 cording to the recent National Assessment of Edu-
 19 cational Progress.

20 (5) In its report, *Rising Above the Gathering*
 21 *Storm: Energizing and Employing America for a*
 22 *Brighter Economic Future*, the National Academy of
 23 Sciences recommends that the Department of Edu-
 24 cation should collect "effective K-12 materials that
 25 would be available free of charge as a voluntary na-

1 tional curriculum that would provide an effective
 2 standard for K–12 teachers”. The National Acad-
 3 emy of Sciences advocates for the creation of world-
 4 class national benchmarks and a national curriculum
 5 in order to ensure students are receiving the skills
 6 needed to successfully compete in a global economy.

7 **SEC. 3. DEVELOP VOLUNTARY NATIONAL EXPECTATIONS**
 8 **FOR MATHEMATICS AND SCIENCE EDU-**
 9 **CATION IN KINDERGARTEN THROUGH GRADE**
 10 **12.**

11 (a) AGREEMENT WITH THE NATIONAL ACADEMY OF
 12 SCIENCE.—The Secretary of Education shall enter into a
 13 contract with the National Academy of Sciences of the Na-
 14 tional Academies for the National Academy of Sciences
 15 to convene and oversee a panel, subject to the require-
 16 ments of this section, that shall produce voluntary na-
 17 tional expectations for mathematics and science education,
 18 accompanied by promising practices in teaching mathe-
 19 matics and science and assessment items for each expecta-
 20 tion, for kindergarten through grade 12, in accordance
 21 with subsection (c).

22 (b) MEMBERS OF PANEL.—

23 (1) MEMBER QUALIFICATIONS.—Each member
 24 of the panel described in subsection (a) shall have
 25 substantial knowledge or experience relating to—

1 (A) education, mathematics, or science pol-
2 icy or programs; or

3 (B) mathematics or science curricula edu-
4 cational content development.

5 (2) COMPOSITION OF PANEL.—In selecting the
6 members of the panel described in subsection (a),
7 the National Academy of Sciences shall ensure
8 that—

9 (A) each member has the qualifications re-
10 quired under paragraph (1);

11 (B) the panel is broadly representative of
12 scientists, practitioners, educators, parents, and
13 representatives from entities with expertise in
14 education, mathematics, and science;

15 (C) a majority of the members of the panel
16 are parents directly involved in the kindergarten
17 through grade 12 education process; and

18 (D) the members of the panel who are edu-
19 cators and parents proportionately represent—

20 (i) the different demographic areas of
21 the United States, including urban, subur-
22 ban, and rural schools; and

23 (ii) public and private schools.

24 (c) DUTIES OF PANEL.—The panel described in sub-
25 section (a) shall—

1 (1) identify the core ideas in mathematics and
2 science common to all States;

3 (2) develop a minimum comprehensive set of
4 voluntary national expectations for mathematics and
5 science education, based on the core ideas in mathe-
6 matics and science common to all States, that are
7 taken, or adapted, from—

8 (A) the State mathematics and science
9 standards, as of the date of enactment of this
10 Act, that are found to be effective; or

11 (B)(i) the most recent National Science
12 Education Standards developed by the National
13 Science Teacher Association; and

14 (ii) the most recent Standards for School
15 Mathematics developed by the National Council
16 of Teachers of Mathematics;

17 (3) develop promising practices in teaching
18 mathematics and science by—

19 (A) identifying proven, effective, kinder-
20 garten through grade 12 mathematics and
21 science teaching materials that exist as of the
22 date of enactment of this Act; and

23 (B) identifying the need for new mathe-
24 matics and science teaching materials;

1 (4) develop sample assessment questions based
2 on each voluntary national expectation, for teachers
3 to use throughout the school year to guide instruc-
4 tion;

5 (5) establish a mechanism for the distribution
6 of the voluntary national expectations, promising
7 practices, sample assessment questions, and other
8 information, identified or developed under this sub-
9 section; and

10 (6) develop and coordinate professional develop-
11 ment criteria that would prepare teachers to incor-
12 porate the voluntary national expectations into the
13 teachers' classroom instruction.

14 (d) DISSEMINATION.—The Secretary of Education
15 shall—

16 (1) disseminate information, in accordance with
17 the recommendations of the panel described in sub-
18 section (a), to entities such as State educational
19 agencies; and

20 (2) otherwise make the materials collected by
21 the panel available and accessible to local edu-
22 cational agencies and schools.

23 (e) PERSONNEL MATTERS.—

24 (1) COMPENSATION OF MEMBERS.—The con-
25 tract described in subsection (a) shall provide that

1 each member of the panel who is not an officer or
2 employee of the Federal Government shall be com-
3 pensated at a rate equal to the daily equivalent of
4 the annual rate of basic pay prescribed for level IV
5 of the Executive Schedule under section 5315 of title
6 5, United States Code, for each day (including travel
7 time) during which such member is engaged in the
8 performance of the duties of the panel. All members
9 of the panel who are officers or employees of the
10 United States shall serve without compensation in
11 addition to that received for their services as officers
12 or employees of the United States.

13 (2) TRAVEL EXPENSES.—The contract de-
14 scribed in subsection (a) shall provide that members
15 of the panel shall be allowed travel expenses, includ-
16 ing per diem in lieu of subsistence, at rates author-
17 ized for employees of agencies under subchapter I of
18 chapter 57 of title 5, United States Code, while
19 away from their homes or regular places of business
20 in the performance of services for the panel.

21 (f) AUTHORIZATION OF APPROPRIATIONS.—There
22 are authorized to be appropriated to carry out this section
23 such sums as may be necessary for each of the fiscal years
24 2008 through 2012.

1 **SEC. 4. GRANTS TO STATE EDUCATIONAL AGENCIES.**

2 (a) IN GENERAL.—From amounts appropriated
3 under subsection (e) for a fiscal year, the Secretary of
4 Education shall award grants, in an amount determined
5 under subsection (b), to State educational agencies to en-
6 able the State educational agencies to carry out all of the
7 following:

8 (1) Contract with entities that publish edu-
9 cational materials, in order to develop instructional
10 materials based on the promising practices in teach-
11 ing mathematics and science developed under section
12 3(c)(3) that effectively teach the voluntary national
13 expectations for mathematics and science education
14 developed under section 3(c)(2).

15 (2) Ensure that the State educational agency
16 has the infrastructure and technical assistance nec-
17 essary to provide all instructional materials online
18 and free of charge to teachers and school faculty
19 and staff.

20 (3) Train mathematics and science teachers in
21 kindergarten through grade 12—

22 (A) to effectively use instructional mate-
23 rials to teach the voluntary national expecta-
24 tions for mathematics and science education de-
25 veloped under section 3(c)(2); and

1 (B) to use the assessment questions devel-
2 oped under section 3(c)(5) to steer instruction.

3 (b) FORMULA FOR GRANTS.—The Secretary of Edu-
4 cation shall award a grant for a fiscal year to each State
5 educational agency that submits a complete application
6 under subsection (c) in an amount that bears the same
7 relation to the amount appropriated for this section for
8 such fiscal year, as the number of students served by the
9 State educational agency for such fiscal year bears to the
10 total number of students served by all State educational
11 agencies that submit complete applications for such fiscal
12 year.

13 (c) APPLICATION.—A State educational agency desir-
14 ing a grant under this section shall submit an application
15 to the Secretary of Education at such time, in such man-
16 ner, and containing such information as the Secretary may
17 require. The application shall include a description of the
18 activities that will be carried out through a grant under
19 this section.

20 (d) REPORT.—Not later than 60 days after the last
21 day of the grant period, a State educational agency receiv-
22 ing a grant under this section shall prepare and submit
23 a report to the Secretary of Education describing the re-
24 sults of the grant.

1 (e) AUTHORIZATION OF APPROPRIATIONS.—There
2 are authorized to be appropriated to carry out this section
3 a total of \$100,000,000 for fiscal years 2008 through
4 2012.

5 **SEC. 5. REPORT.**

6 Not later than 2 years after the date of enactment
7 of this Act, and annually thereafter, the Secretary of Edu-
8 cation shall—

9 (1) study the effects of the voluntary national
10 expectations for mathematics and science education,
11 and the promising practices in teaching mathematics
12 and science, developed under section 3 on student
13 achievement on the National Assessment of Edu-
14 cational Progress, the Trends in International Math-
15 ematics and Science Study, and the Programme for
16 International Student Assessment, for the most re-
17 cent year available, as compared to the effects of
18 State standards and curricula on student achieve-
19 ment on such assessments; and

20 (2) shall prepare and submit a report to Con-
21 gress on the Secretary's findings.

○