

MATH EDUCATION INITIATIVE

2011 GENERAL SESSION

STATE OF UTAH

Chief Sponsor: Howard A. Stephenson

House Sponsor: Merlynn T. Newbold

LONG TITLE

General Description:

This bill creates a program that awards grants for the improvement of math education.

Highlighted Provisions:

This bill:

- ▶ requires the Legislature to annually appropriate money to the State Board of Education for the Math Education Initiative, subject to future budget constraints;
- ▶ directs the State Board of Education to use money appropriated for the Math Education Initiative to award grants to:
 - school districts and charter schools to help pay for costs to adopt Singapore math;
 - schools for honors mathematics courses; and
 - institutions of higher education or nonprofit education organizations for math teacher training programs;
- ▶ imposes requirements for a school district or charter school that receives a grant to provide instruction in Singapore math;
- ▶ imposes requirements for honors mathematics courses and teachers; and
- ▶ directs the State Board of Education to:
 - appoint an advisory committee to make recommendations regarding the implementation of Singapore math;
 - contract with an independent, qualified evaluator, selected through a request for



28 proposals process, to evaluate the effect of instruction in Singapore math on student
29 achievement; and

- 30 • make rules that establish criteria for awarding grants for math teacher training
31 programs.

32 **Money Appropriated in this Bill:**

33 This bill appropriates:

- 34 ▶ to the State Board of Education for fiscal year 2011-12, as an ongoing
35 appropriation:

- 36 • from the Education Fund, \$1,813,000.

37 **Other Special Clauses:**

38 This bill provides an effective date.

39 **Utah Code Sections Affected:**

40 AMENDS:

41 **63I-2-253**, as last amended by Laws of Utah 2010, Chapter 11

42 ENACTS:

43 **53A-13-401**, Utah Code Annotated 1953

44 **53A-13-402**, Utah Code Annotated 1953

45 **53A-13-403**, Utah Code Annotated 1953

46 **53A-13-404**, Utah Code Annotated 1953

47 **53A-13-405**, Utah Code Annotated 1953

48 **53A-13-406**, Utah Code Annotated 1953

49 **53A-13-407**, Utah Code Annotated 1953

50 **53A-13-408**, Utah Code Annotated 1953

51 **53A-13-409**, Utah Code Annotated 1953

52 **53A-13-410**, Utah Code Annotated 1953

53 **53A-13-411**, Utah Code Annotated 1953

54 **53A-13-412**, Utah Code Annotated 1953



56 *Be it enacted by the Legislature of the state of Utah:*

57 Section 1. Section **53A-13-401** is enacted to read:

58 **Part 4. Math Education Initiative**

59 **53A-13-401. Definitions.**

60 As used in this part:

61 (1) "Board" means the State Board of Education.

62 (2) "Honors mathematics" includes honors algebra I, honors algebra II, and honors
63 geometry.

64 (3) "Singapore math" means the math curriculum created by the education ministry in
65 Singapore for use in Singapore schools and encompasses the textbooks, workbooks, and other
66 materials based on the math curriculum.

67 Section 2. Section **53A-13-402** is enacted to read:

68 **53A-13-402. Purposes of the Math Education Initiative -- Public-private**
69 **partnerships encouraged.**

70 (1) The Math Education Initiative is created to:

71 (a) make Utah the premier state for math education and a recognized source of skilled
72 scientists and engineers;

73 (b) meet the demand of Utah employers for workers with high math skills; and

74 (c) entice companies that require a highly skilled technical workforce to locate in the
75 state.

76 (2) The formation of public-private partnerships is encouraged to advance the purposes
77 of the Math Education Initiative.

78 Section 3. Section **53A-13-403** is enacted to read:

79 **53A-13-403. Annual appropriation for Math Education Initiative -- Use of Math**
80 **Education Initiative money.**

81 (1) Subject to future budget constraints, the Legislature shall:

82 (a) annually appropriate money to the board for the Math Education Initiative; and

83 (b) increase appropriations for the Math Education Initiative as the state's capacity to
84 provide professional development to teachers in Singapore math expands.

85 (2) From money appropriated for the Math Education Initiative, the board shall:

86 (a) award grants to:

87 (i) school districts and charter schools to help pay for a school district's or charter
88 school's costs of adopting Singapore math as provided by Section 53A-13-404;

89 (ii) schools to pay for stipends for teachers who teach honors mathematics courses; and

90 (iii) institutions of higher education or nonprofit educational organizations for math
91 teacher training programs as provided in Section 53A-13-412;

92 (b) contract with an independent, qualified evaluator, selected through a request for
93 proposals process, to evaluate the effect of instruction in Singapore math on student
94 achievement; and

95 (c) contract with a person, selected through a request for proposals process, to develop
96 a bank of problems that may be used to assess students' understanding and proficiency in
97 honors mathematics courses.

98 Section 4. Section **53A-13-404** is enacted to read:

99 **53A-13-404. Grants to school districts and charter schools that adopt Singapore**
100 **math.**

101 (1) Through a competitive proposal process, the board may award grants of up to \$150
102 per student for the portion of a school district's or charter school's kindergarten through grade
103 eight enrollment that receives instruction in Singapore math for the first time.

104 (2) A school district or charter school may use the grant money to pay for Singapore
105 math instructional materials or professional development in teaching Singapore math.

106 Section 5. Section **53A-13-405** is enacted to read:

107 **53A-13-405. Requirements of school districts and charter schools that receive a**
108 **grant for Singapore math.**

109 (1) A school district or charter school that receives a grant to provide instruction in
110 Singapore math:

111 (a) (i) shall adopt Singapore math for grades kindergarten through six, except as
112 provided in Subsection (2); and

113 (ii) may adopt Singapore math for grades seven and eight;

114 (b) shall administer math achievement tests at the beginning and the end of the school
115 year; and

116 (c) shall provide professional development to teachers in Singapore math.

117 (2) (a) A school district or charter school may phase in the adoption of Singapore math
118 in grades kindergarten through eight over two or more years.

119 (b) A school district may phase in the adoption of Singapore math throughout schools
120 in the school district over two or more years.

121 Section 6. Section **53A-13-406** is enacted to read:

122 **53A-13-406. Advisory committee on Singapore math.**

123 (1) The board shall appoint an advisory committee to:

124 (a) evaluate Singapore math instructional materials and make recommendations to
125 school districts and charter schools for the adoption of Singapore math instructional materials;

126 (b) make recommendations to school districts and charter schools on professional
127 development in Singapore math, including:

128 (i) the qualifications of individuals who provide professional development in

129 Singapore math; and

130 (ii) the extent and content of initial and continuing professional development in

131 Singapore math; and

132 (c) review grant proposals submitted by school districts and charter schools to adopt
133 Singapore math and make recommendations to the board on awarding grants.

134 (2) In reviewing and making recommendations to the board on grant proposals, the
135 advisory council shall consider:

136 (a) the extent and content of professional development for teachers of Singapore math;

137 (b) the quality of instructional materials;

138 (c) the grade seven and eight math curricula; and

139 (d) elementary and secondary math class schedules, including the number of days and
140 hours per week each class is scheduled.

141 (3) The advisory committee appointed under Subsection (1) shall consist of five
142 members of whom:

143 (a) three members shall be mathematicians who serve or have served as a math
144 professor at a higher education institution in Utah that offers graduate level degrees in math;

145 and

146 (b) two additional members shall have a high level of expertise in mathematics.

147 Section 7. Section **53A-13-407** is enacted to read:

148 **53A-13-407. Annual report in Singapore math.**

149 (1) Through 2015, the board shall make a report to the Education Interim Committee
150 after each year of instruction in Singapore math in Utah schools.

151 (2) The report shall include an evaluation of the effect of instruction in Singapore math

152 on student achievement.

153 Section 8. Section **53A-13-408** is enacted to read:

154 **53A-13-408. Grants for honors mathematics courses.**

155 (1) Subject to funding for honors mathematics courses, the board shall make grants to
156 schools to pay for stipends in the amount of \$1,600 per year for teachers of honors mathematics
157 courses.

158 (2) The board shall establish procedures for applying for and awarding the grants
159 described in Subsection (1).

160 (3) A teacher who receives a stipend to teach an honors mathematics course shall agree
161 to:

162 (a) develop the skills and knowledge necessary to teach the curriculum and learning
163 objectives of an honors mathematics course as described in Subsection 53A-15-409;

164 (b) select a textbook or instructional material in accordance with the requirements of
165 Section 53A-15-410; and

166 (c) administer end-of-semester tests in accordance with Section 53A-15-411.

167 (4) If funding for honors mathematics courses is not sufficient to provide the \$1,600
168 stipend for teachers of honors mathematics courses who had received the stipend in the prior
169 school year, the board may reduce the amount of the stipend for teachers of honors
170 mathematics courses.

171 Section 9. Section **53A-13-409** is enacted to read:

172 **53A-13-409. Honors algebra and honors geometry -- Curriculum and learning**
173 **objectives.**

174 (1) (a) Honors algebra encompasses, but is not limited to, the requirements of the
175 algebra core curriculum.

176 (b) Honors algebra students shall:

177 (i) have the opportunity to derive or prove formulas before using the formulas to solve
178 problems; and

179 (ii) learn to solve challenging word problems.

180 (2) (a) Honors geometry:

181 (i) encompasses, but is not limited to, the requirements of the geometry core
182 curriculum; and

- 183 (ii) is proof-based.
184 (b) Honors geometry students shall learn how to:
185 (i) verify or derive math facts and prove theorems, ranging from easy to challenging;
186 and
187 (ii) solve challenging word problems.
188 (3) Honors geometry shall be taught in a single year and may not be combined with
189 instruction in algebra.

190 Section 10. Section **53A-13-410** is enacted to read:

191 **53A-13-410. Honors algebra and honors geometry -- Textbooks.**

- 192 (1) An honors algebra textbook shall have many introductory, midlevel, and
193 challenging word problems.
194 (2) The focus and the majority of problems in an honors geometry textbook shall be
195 proofs.
196 (3) An honors mathematics teacher:
197 (a) may select a textbook or instructional material that in the teacher's judgement meets
198 the requirements of Subsection (1) or (2) and is aligned with the curriculum and learning
199 objectives described in Section 53A-15-409; and
200 (b) is not required to select a textbook or instructional material recommended by the
201 State Instructional Materials Commission.
202 (4) At the request of an honors mathematics teacher, the State Board of Education shall
203 attempt to acquire the permission necessary to reproduce, either online or in print, an
204 out-of-print textbook.

205 Section 11. Section **53A-13-411** is enacted to read:

206 **53A-13-411. Honors algebra and honors geometry -- Online bank of problems --**
207 **Tests.**

- 208 (1) The State Board of Education shall hire a contractor, selected through a request for
209 proposals process, to develop a bank of problems for honors mathematics courses that are
210 aligned with the curriculum and learning objections described in Section 53A-15-409.
211 (2) To qualify for a contract to develop a bank of problems for honors mathematics
212 courses, an individual responsible for developing the problems must have a doctorate in
213 mathematics.

214 (3) A contractor who develops a bank of problems for honors mathematics courses
215 shall take and consider public comment on the bank of problems.

216 (4) (a) From the bank of problems developed under this section, an honors
217 mathematics teacher shall develop tests that shall be administered at the end of each semester
218 of instruction.

219 (b) An end-of-semester test for an honors mathematics course shall include:

220 (i) 40 or more introductory problems;

221 (ii) 40 or more midlevel problems; and

222 (iii) 40 or more challenging problems.

223 (c) For an honors algebra end-of-semester test, approximately half the problems
224 described in Subsection (4)(b) shall be word problems.

225 (5) The State Board of Education shall make available online the entire bank of
226 problems developed under this section so that teachers and students may have a better
227 understanding of the learning objectives for honors mathematics courses.

228 Section 12. Section **53A-13-412** is enacted to read:

229 **53A-13-412. Grants for math teacher training programs.**

230 (1) The board may award grants to an institution of higher education or a nonprofit
231 educational organization for programs that provide training leading to a secondary education
232 license with an endorsement in mathematics for an individual who:

233 (a) is not a teacher in a public or private school;

234 (b) does not have a teaching license;

235 (c) has a bachelor's degree or higher; and

236 (d) demonstrates a high level of mathematics competency by:

237 (i) successfully completing substantial course work in mathematics; and

238 (ii) passing a mathematics content exam.

239 (2) (a) The board shall make rules in accordance with Title 63G, Chapter 3, Utah
240 Administrative Rulemaking Act, that establish criteria for awarding grants under this section.

241 (b) In awarding grants, the board shall consider the amount or percent of matching
242 funds provided by the grant recipient.

243 Section 13. Section **63I-2-253** is amended to read:

244 **63I-2-253. Repeal dates -- Titles 53, 53A, and 53B.**

- 245 (1) Section 53A-1-403.5 is repealed July 1, 2012.
- 246 (2) Subsection 53A-1-603(5) is repealed July 1, 2015.
- 247 (3) Title 53A, Chapter 1a, Part 10, UPSTART, is repealed July 1, 2014.
- 248 (4) Subsection 53A-13-110(4) is repealed July 1, 2013.
- 249 (5) Section 53A-13-407 is repealed July 1, 2016.
- 250 [~~5~~] (6) Section 53A-17a-152 is repealed July 1, 2010.
- 251 [~~6~~] (7) Section 53A-17a-162 is repealed July 1, 2012.

252 Section 14. **Appropriation.**

253 Under the terms and conditions of Title 63J, Chapter 1, Budgetary Procedures Act, the
254 following sums of money are appropriated from resources not otherwise appropriated out of the
255 funds or accounts indicated for the fiscal year beginning July 1, 2011 and ending June 30,
256 2012. These are additions to amounts previously appropriated for fiscal year 2011-12.

257 To State Board of Education

258 <u>From Education Fund</u>	<u>\$1,813,000</u>
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259 Schedule of Programs:

260 <u>Singapore math</u>	<u>\$1,000,000</u>
261 <u>Math teacher training</u>	<u>\$750,000</u>
262 <u>Honors mathematics</u>	<u>\$63,000</u>

263 It is the intent of the Legislature that up to \$15,000 of the appropriation for the honors
264 mathematics program may be used to pay a contractor to develop a bank of problems for
265 honors mathematics courses.

266 Section 15. **Effective date.**

267 (1) Except as provided in Subsection (2), if approved by two-thirds of all the members
268 elected to each house, this bill takes effect upon approval by the governor, or the day following
269 the constitutional time limit of Utah Constitution Article VII, Section 8, without the governor's
270 signature, or in the case of a veto override.

271 (2) Uncodified Section 14, Appropriation, takes effect on July 1, 2011.

Legislative Review Note
as of 2-11-11 10:32 AM

Office of Legislative Research and General Counsel

FISCAL NOTE

S.B. 179

SHORT TITLE: **Math Education Initiative**

SPONSOR: **Stephenson, H.**

2011 GENERAL SESSION, STATE OF UTAH

STATE GOVERNMENT (UCA 36-12-13(2)(b))

Enactment of this bill appropriates \$1,813,000 in ongoing Education Funds to the State Board of Education for the Math Education Initiative as outlined in the bill.

STATE BUDGET DETAIL TABLE

	FY 2011	FY 2012	FY 2013
Revenue	\$0	\$0	\$0
Expenditure:			
Education Fund	\$0	\$1,813,000	\$1,813,000
Total Expenditure	\$0	\$1,813,000	\$1,813,000
Net Impact, All Funds (Rev.-Exp.)	\$0	(\$1,813,000)	(\$1,813,000)
Net Impact, General/Education Funds	\$0	(\$1,813,000)	(\$1,813,000)

LOCAL GOVERNMENTS (UCA 36-12-13(2)(c))

Enactment of this bill likely will not result in direct, measurable costs for local governments.

DIRECT EXPENDITURES BY UTAH RESIDENTS AND BUSINESSES (UCA 36-12-13(2)(d))

Enactment of this bill likely will not result in direct, measurable expenditures by Utah residents or businesses.