

SECOND REGULAR SESSION

HOUSE BILL NO. 911

92ND GENERAL ASSEMBLY

INTRODUCED BY REPRESENTATIVES COOPER (155) (Sponsor), REINHART, DAVIS (19), NIEVES,
PHILLIPS, EMERY AND HUNTER (Co-sponsors).

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STEPHEN S. DAVIS, Chief Clerk

2770L.031

AN ACT

To amend chapter 170, RSMo, by adding thereto one new section relating to standard science instruction.

Be it enacted by the General Assembly of the state of Missouri, as follows:

Section A. Chapter 170, RSMo, is amended by adding thereto one new section, to be
2 known as section 170.018, to read as follows:

3 **170.018. 1. This section shall be known as, and may be cited as, the "Missouri**
4 **Standard Science Act."**

5 **2. As used in this section, the following terms mean:**

6 **(1) "Analogous naturalistic process", a verifiable process which is either a present-**
7 **day naturally occurring process similar to a past naturalistic process or the human-**
8 **directed duplication of a process similar to a past naturalistic process. The verifiable**
9 **process uses similar natural materials, mechanisms, and conditions as the past naturalistic**
10 **process and produces an equivalent end result;**

11 **(2) "Biological evolution", a theory of the origin of life and its ascent by naturalistic**
12 **means. The first simple life was developed from basic elements and simple molecules**
13 **through the mechanisms of random combinations, naturally occurring molecular**
14 **structures, other naturalistic means, and millions of years. From the first simple life, all**
15 **subsequent species developed through the mechanisms of random variation, mutation,**
16 **natural selection, adaptation, segregation, other naturalistic means, and millions of years.**
17 **The theory is illustrated by the evolutionary phylogenic tree. Theory philosophically**
demands only naturalistic causes and denies the operation of any intelligence, supernatural
event, God or theistic figure in the initial or subsequent development of life;

18 **(3) "Biological intelligent design", a hypothesis that the complex form and function**
19 **observed in biological structures are the result of intelligence and, by inference, that the**
20 **origin of biological life and the diversity of all original species on earth are the result of**
21 **intelligence. Since the inception of each original species, genetic material has been lost,**
22 **inherited, exchanged, mutated, and recombined to result in limited variation. Naturalistic**
23 **mechanisms do not provide a means for making life from simple molecules or making**
24 **sufficient new genetic material to cause ascent from microscopic organisms to large life**
25 **forms. The hypothesis does not address the time or sequence of life's appearance on earth,**
26 **time or formation of the fossil record, and time or method of species extinction. The**
27 **hypothesis does not require the identity of intelligence responsible for earth's biology but**
28 **requires any proposed identity of that intelligence to be verifiable by present-day**
29 **observation or experimentation. Concepts inherent within the hypothesis include:**

30 **(a) The origin of life on earth is inferred to be the result of intelligence directed**
31 **design and construction. There are no plausible mechanisms or present-day experiments**
32 **to prove the naturalistic origin of the first independent living organism;**

33 **(b) All original species on earth are inferred to be the result of intelligence directed**
34 **design and construction. There are no significant mechanisms or present-day experiments**
35 **to prove the naturalistic development of earth's species from microscopic organisms;**

36 **(c) Complex forms in proteins, enzymes, DNA, and other biological structures**
37 **demonstrated by their constituent molecules in regard to size, shape, quantity, orientation,**
38 **sequence, chirality, and integration imply intelligent design was necessary for the first life**
39 **on earth. Intelligence is capable of designing complex form;**

40 **(d) Complex functions demonstrated by growth, reproduction, repair, food**
41 **metabolization, waste disposal, stimuli response, and autonomous mobility in microscopic**
42 **organisms imply intelligent design was necessary for the first life on earth. Intelligence is**
43 **capable of designing complex function;**

44 **(e) Within the history of human experience, all exhibits of recurring discrete**
45 **symbols from a set of symbols arranged in a specific sequence which store information and**
46 **can be read by human intelligence, is itself the result of intelligence. DNA contains stored**
47 **information for the assembling of proteins and enzymes which can be read by humans and**
48 **is the result of intelligence. The recurring discrete symbols sequenced within DNA which**
49 **store information are the molecules adenine, guanine, cytosine, and thymine;**

50 **(f) Intelligence-directed design and construction of all original species at inception**
51 **without an accompanying genetic burden is inferred rather than random mutational**
52 **genetic change as a constructive mechanism. Random mutational genetic change results**
53 **in an increasing genetic burden and species degradation rather than species ascent;**

54 **(g) Intelligence-directed action is necessary to exceed the limits of natural species**
55 **change, which is a combination of autogenous species change and environmental effected**
56 **species change. Multi-generation breeding experiments illustrate the limits of natural**
57 **species change and its inadequacy for developing required genetic information found in**
58 **dissimilar species;**

59 **(h) The irreducible complexity of certain biological systems implies a completed**
60 **design and construction at inception rather than step-by-step development, as indicated**
61 **by the structures observed for sight, hearing, smell, balance, blood coagulation, digestion,**
62 **and hormone control;**

63 **(i) The lack of significant transitional forms between diverse species existing today**
64 **and in the fossil record implies all original species were completed at inception rather than**
65 **by a step-by-step development from other species. A lack of transitional forms is**
66 **illustrated by the appearance of large complex life forms in the Cambrian fossil record**
67 **without any significant previous fossils;**

68 **(j) Common designs and features evident in different species imply the intelligent**
69 **reuse of proven designs analogous to the reuse of proven designs by human designers;**

70 **(k) The lack of significant present-day observable changes in species due to random**
71 **variation, mutation, natural selection, adaptation, segregation, or other naturalistic**
72 **mechanisms implies intelligence as the cause for all original species;**

73 **(4) "Destiny", the events and processes that define the future of the universe,**
74 **galaxies, stars, our solar system, earth, plant life, animal life, and the human race and**
75 **which may be founded upon faith-based philosophical beliefs;**

76 **(5) "Empirical data", information obtained from observation or experimentation**
77 **about the physical universe. The components of observed information include the identity**
78 **of the observed object, date of observation, location of observation, means of observation,**
79 **observational tools, observing personnel, and recorded observations. The components of**
80 **experimental information include the methodology of experimentation, date of experiment,**
81 **location of experiment, experimental apparatus, experimenting personnel, and recorded**
82 **observations. Empirical data is not speculative, theoretical, hypothetical, inferred, or**
83 **extrapolated and of which conjecture;**

84 **(6) "Equal treatment", the approximate equal teaching of each specified viewpoint**
85 **for a single course of instruction in course textbooks and teacher-directed activities as**
86 **follows:**

87 **(a) Course textbooks contain approximately an equal number of pages of relevant**
88 **material teaching each viewpoint. Textbook materials include text, pictures, illustrations,**
89 **graphs, tables, questions, discussion items, student exercises, teacher support material and**

90 other material supplied with the textbook, with freedom allowed the textbook publishers
91 to arrange, substitute, or size material to provide an approximately equal teaching of each
92 viewpoint for a specific textbook;

93 (b) Teacher-directed activities teach each viewpoint approximately equal. Teacher
94 directed activities include lecture time, visual aids, reading assignments, homework,
95 experiments, speakers, test material, and other activities directed by the teacher, with
96 freedom to lengthen, shorten, or substitute activities to provide an approximately equal
97 teaching of each viewpoint for a specific course of instruction;

98 (c) In the absence of course textbooks which provide equal treatment, written
99 interim material may provide alternate viewpoints, with interim textbook material
100 developed pursuant to subsection 5 of this section allowed to be used for a period not to
101 exceed the compliance date specified in subsection 4 of this section;

102 (7) "Extrapolated radiometric data", estimated data based on the radiometric
103 decay of an unstable isotope as measured in half-life and which can be used to estimate the
104 date or age of an object containing the isotope. Estimated data may be accurate, partially
105 accurate, or inaccurate due to measurement variation, object heterogeneity, contamination,
106 infiltration, leaching, isotope uptake variation, and other uncontrolled factors. Examples
107 of estimated extrapolated radiometric data are dates based on Carbon-14, rubidium-
108 strontium, potassium-argon, argon-argon and uranium-lead dating methods;

109 (8) "Hypothesis", a scientific theory reflecting a minority of scientific opinion
110 which may lack acceptance because it is a new idea, contains faulty logic, lacks supporting
111 data, has significant amounts of conflicting data, or is philosophically unpopular. One
112 person may develop and propose a hypothesis;

113 (9) "Origin", the events and processes previous to written history that define the
114 beginning, development, and record of the universe, galaxies, stars, our solar system, earth,
115 earth geology, earth geography, fossils, species extinction, plant life, animal life, and the
116 human race, and which may be founded upon faith-based philosophical beliefs;

117 (10) "Scientific theory", an inferred explanation of incompletely understood
118 phenomena about the physical universe based on limited knowledge, whose components
119 are data, logic, and faith-based philosophy. The inferred explanation may be proven,
120 mostly proven, partially proven, unproven or false and may be based on data which is
121 supportive, inconsistent, conflicting, incomplete, or inaccurate. The inferred explanation
122 may be described as a scientific theoretical model;

123 (11) "Scientific law", a statement describing specific phenomena about the physical
124 universe which has been verified by observation or experimentation and has no exceptions
125 of verified empirical data. The statement may be described by formula;

126 (12) "Standard science", knowledge disclosed in a truthful and objective manner
127 and the physical universe without any preconceived philosophical demands concerning
128 origin or destiny. Knowledge is based upon verified empirical data obtained through
129 observation and experimentation and serves as the factual basis for formulae, events,
130 processes, principles, and laws and may be a component of theory, hypothesis, conjecture
131 and extrapolation. Knowledge growth as a result of human endeavor serves as the
132 foundation for the continuous reevaluation of theory, hypothesis, conjecture, and
133 extrapolation to determine their correctness based on supporting or conflicting verified
134 empirical data.

135 3. All science taught in Missouri public elementary and secondary schools,
136 including material concerning physics, chemistry, biology, health, physiology, genetics,
137 astronomy, cosmology, geology, paleontology, anthropology, ecology, climatology, or other
138 science topics shall be standard science. All standard science course materials and
139 instruction shall meet the following criteria:

140 (1) If empirical data is taught, only such data which has been verified or is
141 currently capable of being verified by observation or experimentation shall be taught.
142 Data with the appearance of empirical data which has never been verified and is currently
143 incapable of being verified shall be identified as nonverifiable when taught orally or in
144 writing;

145 (2) If extrapolated radiometric data is taught, such data shall be identified as
146 extrapolated data and explained as estimated data when taught orally or in writing. For
147 each textbook or course of instruction, if the date or age of an object is given based upon
148 extrapolated radiometric data, a one-time explanation of the extrapolation method shall
149 be taught when the date or age is introduced. The one-time explanation shall include the
150 identity of the isotope used, the isotope decay process, the end product of decay, isotope
151 decay half-life, specific materials which can be dated by the method, and the approximate
152 time range of the dating method. The one-time explanation shall include assumptions of
153 the extrapolation method, potential for error, and relevant examples of invalid, inaccurate,
154 or suspect results;

155 (3) If scientific law is taught, written textbooks statements identified as scientific
156 law shall have no known exceptions of verified empirical data;

157 (4) If scientific theory is taught, the theory shall be identified as theory when taught
158 orally or in writing. Empirical data and conjecture may be presented to support taught
159 theory where considered instructive. As used in this subsection, the term "theory" shall
160 mean theory or hypothesis;

161 (a) If a scientific theory concerning origin or destiny is taught without the teaching
162 of opposing scientific theory, the taught theory may be criticized by the teaching of
163 conflicting empirical data where considered instructive;

164 (b) If scientific theory concerning biological origin is taught, biological evolution
165 and biological intelligent design shall be taught and given equal treatment. Other scientific
166 theory or theories of biological origin may be taught and given equal treatment. If
167 biological intelligent design is taught, any proposed identity of the intelligence responsible
168 for earth's biology shall be verifiable by present-day observation or experimentation and
169 teachers shall not question, survey, or otherwise influence student belief in a nonverifiable
170 identity within a science course;

171 (5) If an event previous to written history is taught, the event shall be supported by
172 physical evidence. Physical evidence and data concerning the event may be taught where
173 considered instructive. Conjecture concerning an event previous to written history as to
174 the occurrence of the event, cause of the event, date of the event, length of time for the
175 event to occur, subsequent effects of the event, or other speculative details shall be taught
176 as theory or hypothesis as specified in subdivision (4) of this subsection;

177 (6) If a naturalistic process previous to written history is taught, the naturalistic
178 process shall be duplicated by an analogous naturalistic process. Details of the analogous
179 naturalistic process may be taught where considered instructive. Conjecture concerning
180 a naturalistic process previous to written history as to the occurrence of the process, cause
181 of the process, date of the process, length of time for the process to occur, process
182 conditions, process mechanisms, process materials, or other speculative details shall be
183 taught as theory or hypothesis as specified in subdivision (4) of this subsection;

184 (7) If a scientific theory or hypothesis proven to be false is taught for historical,
185 illustrative, or other reasons, the theory or hypothesis shall be identified as false when
186 taught orally or in writing.

187 4. New textbooks purchased after January 1, 2006, for use in Missouri public
188 elementary and secondary schools shall meet the requirements of this section. All
189 textbooks used after January 1, 2016, in Missouri public elementary and secondary schools
190 shall meet the requirements of this section.

191 5. The state commissioner of education shall appoint a temporary committee of no
192 fewer than five individuals who are knowledgeable of science and supportive of intelligent
193 design to serve without compensation. The committee shall develop supplemental textbook
194 material for interim use by schools for the teaching of standard science and biological
195 intelligent design by September 1, 2005. Interim textbook material shall be accessible for

196 copying on the department of elementary and secondary education Internet web site
197 without cost or restriction.

198 6. The state commissioner of education shall prescribe a list of suitable textbooks
199 which meet the requirements of this section no later than January 1, 2006. The prescribed
200 list shall be accessible on the department of elementary and secondary education Internet
201 web site. The textbook publisher shall certify to the commissioner of education that each
202 textbook edition complies with the requirements of this section.

203 7. Willful neglect of any elementary or secondary school superintendent, principal,
204 or teacher to observe and carry out the requirements of this section shall be cause for
205 termination of his or her contract.

206 8. The state commissioner of education shall ensure that any assessment or
207 competency testing of elementary or secondary school pupils for academic performance
208 used and controlled by the state conforms with this section concerning science material.

209 9. Each public school classroom in this state from grades eight through twelve in
210 which science is taught exclusively shall post a copy of this section in a conspicuous
211 manner.