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The Texas Education Agency released proposed [drafts](#) [4] of the state's science education standards on September 22, 2008. Not surprisingly in light of the ongoing controversies over teaching evolution in Texas, reporters focused on the place of evolution in the draft standards, with the *Dallas Morning News* (September 23, 2008) [reporting](#) [5], "Proposed curriculum standards for science courses in Texas schools would boost the teaching of evolution by dropping the current requirement that students be exposed to 'weaknesses' in Charles Darwin's theory of how humans and other life forms evolved. Science standards drafted by review committees of teachers and academics also would put up roadblocks for teachers who want to discuss creationism or 'intelligent design' in biology classes when covering the subject of evolution."

In particular, a requirement in the current standards for high school biology that reads "The student is expected to analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information" would be replaced with "The student is expected to analyze and evaluate scientific explanations using empirical evidence, logical reasoning, and experimental and observational testing," and a description of the limits of science (adapted from the recent National Academy of Sciences publication [Science, Evolution, and Creationism](#) [6]) -- "Science uses observational evidence to make predictions of natural phenomena and to construct testable explanations. If ideas are based upon purported forces outside of nature, they cannot be tested using scientific methods" -- would be added.

Such revisions may seem small and unimportant, but in 2003, the "strengths and weaknesses" language

in the Texas state science standards was selectively applied by members of the board attempting to dilute the treatment of evolution in the biology textbooks then under consideration. At the time, board member Patricia Hardy observed that it was invidious to apply the language only to a single topic; while if it were applied across the board, "we'd need a crane to carry the books to the schools." In the end, all of the textbooks were adopted without substantial changes, but it was clear that the "strengths and weaknesses" language would be a matter of contention when the standards were next revised. As Kathy Miller of the [Texas Freedom Network](#) [7] [told](#) [8] *The New York Times* (June 4, 2008), "'Strengths and weaknesses' are regular words that have now been drafted into the rhetorical arsenal of creationists."

Groups supporting the integrity of science education therefore applauded the changes. In a September 23, 2008, [press release](#) [9], the Texas Freedom Network's Kathy Miller was quoted as saying, "These work groups have crafted solid standards that provide a clear road map to a 21st-century science education for Texas students ... These common-sense standards respect the right of families to pass on their own religious beliefs to their children while ensuring that public schools give students a sound science education that prepares them to succeed in college and the jobs of the future." "It's time for state board members to listen to classroom teachers and true experts instead of promoting their own personal agendas," she added. "Our students can't succeed with a 19th-century science education in their 21st-century classrooms. We applaud the science work groups for recognizing that fact."

In a September 23, 2008, [blog post](#) [10] for the *Houston Chronicle*, [Texas Citizens for Science](#) [11]'s Steven Schafersman also welcomed the the addition of the description of the limits of science and the removal of the "strengths and weaknesses" language, which he described as "the primary weapon that Creationists have to attempt to damage and corrupt science textbooks." He expressed regret, however, that those revisions were not emulated in all of the standards. Schafersman also lamented the omission from the biology standards of any requirement to learn about human evolution in particular, commenting, "I'm sure the competent teachers on the biology panel discussed a requirement for human evolution, but they ultimately decided against it. They should have included it and forced the [state board of education] members to remove it by majority vote rather than by giving their prior permission to continue censorship."

The chair of the state board of education, avowed creationist Don McLeroy, defended the "strengths and weaknesses" language, [telling](#) [12] the *Austin American-Statesman* (September 23, 2008), "I'd argue it doesn't make sense scientifically to take it out ... Evolution shouldn't have anything to worry about -- if there's no weaknesses, there's no weaknesses. But if there's scientifically testable explanations out there to refute it, shouldn't those be included too?" The newspaper added, "he prefers the 'strengths and weaknesses' language because it allows the board to reject a textbook that doesn't cover the weaknesses of evolution." But Kevin Fisher, who helped to write the draft biology standards, told the *American-Statesman*, "Something doesn't become a theory if it's got weaknesses. There may be some questions that may yet to be answered, but nothing that's to the level of a weakness."

What's next? The Texas Education Agency is expected shortly to solicit public comment on and expert review of the draft standards. The draft standards will then be revised in light of that input, and submitted to the state board of education for its approval. Their fate is uncertain, since, as the *American-Statesman* reported, "In previous public discussions, seven of 15 board members appeared to support, on some level, the teaching of the weaknesses of evolution in science classrooms. Six have been opposed, and two -- Geraldine Miller, R-Dallas, and Rick Agosto, D-San Antonio -- are considered swing votes." And, as Schafersman commented, "Since there are no scientists on the SBOE and since seven members are Young Earth Creationists -- most of whom have publicly stated their intention to distort evolution

standards and damage science instruction -- it is likely that the public debate and approval will be contentious."

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