

TEACHING EVOLUTION



Your guide to understanding the debate —
and what it means for your classroom. **By Jeanna Bryner**

After years of teaching science at Crestview Middle School in Columbus, Ohio, Sharon Higgins knows to approach today's topic—the origins of life on earth—with caution. As her seventh graders file into the classroom, Higgins takes a brief look at her lesson plan and then begins the class with an announcement: “We are approaching evolution as scientists; we aren't discussing religion. I am giving you this information, and you can believe whatever you want to believe,” she says.

Eighty years after the famous 1925 Scopes “monkey trial,” which tested a teacher's right to discuss the theory of evolution in the classroom, evolution—and its most recent counterview, called “intelligent design”—are in the headlines again, and just about everyone seems to have an opinion.

This past July, President Bush weighed in, telling reporters in Texas that intelligent design belongs in the public school curriculum, alongside evolution: “Both ought to be taught,” he said, “so people can understand what the debate's about.”

The National Congress of Science Education (NCSE), a group of leaders

from the National Science Teachers Association (NSTA), quickly issued a response expressing its disappointment with the President's statement:

“Teachers of science should be supported in the teaching of evolution and the strong body of scientific evidence supporting it, and not pressured to present nonscientific views.”

Want to know more about what's fueling this fiery debate, and more important, how it could affect your classroom? Below, we unpack the facts, decode the jargon, and talk to real teachers about their take on evolution in schools.

Intelligent Design, Explained

Just what exactly is meant by “intelligent design?” In essence, intelligent design attempts to explain phenomenon for which evidence of natural process is lacking. At its center is the idea that some features of the universe are irreducibly complex, and therefore can be explained only by an “intelligent” cause—whether the designer is called “God” or something else. The main driver of the intelligent design movement, the Seattle-based Discovery Institute, says that, “unlike creationism, the theory of intelligent design is agnostic regarding the source of design and has no commitment to defending the Bible.”

In other words, proponents of intelligent design want to distinguish themselves from evolution's former opponents—creationists—who argue that according to the Bible, God created the world in six days. Some say that since intelligent design is not a religious theory, it belongs in schools, right alongside evolution.

Others, including the Discovery Institute, more generally want schools to teach what they see as holes in the theory of evolution. “We recommend that schools teach both the evidence for



tough topic

Darwinian evolution as well as the scientific criticisms of the theory,” says Robert Crowther, director of communications at the Discovery Institute’s Center of Science and Culture.

Standing by Evolution

Most scientists oppose this line of argument because they say evolution is more

than just a theory. “The vast majority of scientists have no problem accepting that evolution has taken place and is continuing to take place. So the idea that there are weaknesses in the theory is something that has been created. It has little to do with biological science,” says Jay Labov, senior advisor for Education and Communication for the National

Research Council’s Center for Education.

In science, a “theory” is an attempt to explain a scientific fact. For example, gravity is a fact—when you drop something it falls to the ground. The theory of gravitation is an attempt to explain how gravity occurs. The same idea, says Labov, applies to the theory of evolution: The idea that life has changed on earth is a fact. The theory of natural selection explains how these changes occur. When used by scientists, Labov continues, the term “theory” has a very specific meaning. “It’s something that has developed as a result of a tremendous amount of work over long periods of time. Theories are confirming, replicable, ask testable questions, and have predictive value.”

Even Seventh Graders Are Talking

It’s not as clear-cut in the classroom, where the beliefs of not only the teacher but 30 different students enter into play. When Melissa Mills’ students at the Space Center Intermediate School in Houston bring up evolution, she tries to approach it as if it were any other scientific topic. She says, “I never overdo the ‘this is just one theory, there are many theories,’ because I think that minimizes what I am there to teach. At the junior high level, it’s difficult, if not impossible, to have real ‘debates’ on hot topics, because the kids simply voice their parents’ points of view.”

But not everyone shares Mills’ opinion that the controversy should stay out of the classroom. In a May 2005 editorial in the *Christian Science Monitor*, high-school biology teacher Doug Cowan says that he gives his students both the skepticism and evidential proof for evolution. The result: “When I note that contrary to their large and monolithic biology textbook, some highly-credentialed scientists insist that there are limitations to Darwin’s theory, the students perk up,” writes Cowan.

What’s a Teacher to Do?

Even if you haven’t yet faced the evolution firestorm in your own classroom, chances are that you will. This year more than 33 states have seen some kind of

Island Left

challenge to teaching evolution at either the state or local level, according to Eugenie C. Scott, executive director of NCSE. The challenges have taken many forms, including the promotion of curriculum that gives equal classroom time to Darwinism and alternative theories for life's history, the push for evolution disclaimers in textbooks, and even attempts to do away with the teaching of evolution and Earth history altogether.

Indeed a recent *New York Times* article reported many schools have attempted to “solve” the controversy by putting evolution on the back burner in terms of what’s required for teachers to cover in class. Dr. John R. Christy, a member of Alabama’s curriculum review board and a self-described evangelical Christian who wants to see evolution taught in schools, noted in the article that “the most common remark I’ve heard from teachers was that the chapter on evolution was assigned but that virtually no discussion in class was taken.” While this strategy may offer schools an easier way out of the battle, “evolution” is still stamped into most state’s science standards—and avoiding covering the concept could be as great a disservice as

further reading on evolution

■ **BACKGROUND READING:** The American Association for the Advancement of Science (AAAS) provides materials on the current controversy. www.aaas.org/news/press_room/evolution/

■ **EVOLUTION BASICS:** PBS steps it out in their six-part online video series “Videos for Students: Evolving Ideas.” www.pbs.org/wgbh

■ **INTELLIGENT DESIGN:** Find out more about the Discovery Institute’s Center for Science and Culture and its case for evolution here. www.discovery.org/csc

■ **LOCAL ISSUES:** National Public Radio describes state challenges to teaching evolution. www.npr.org/templates/story/story.php?storyId=4630737

■ **CLASSROOM DRAMA:** “Teaching about Evolution and the Nature of Science,” explores controversy through the eyes of fictitious teachers: www.nap.edu/readingroom/books/evolution98/

skimming over phonics or fractions.

NCSE’s Scott explains that teachers have a responsibility to give their students the skills and knowledge they need to develop into successful adults. “The job of K–12 teachers is to transmit the consensus view of the discipline at an age-appropriate level. That means they should teach evolution because that’s what students will learn in college.”

Finding Middle Ground—and Fun

Back in Ohio, Sharon Higgins agrees that as a science teacher, she needs to prepare her students for high school and college. That’s why she introduces evolution with the caution that “we’re approaching this as scientists.” But for a homework assignment that builds on opinion writing skills, Higgins asks her students to write a persuasive essay about their beliefs regarding the creation of the universe.

Halli Moskowitz, a teacher in East Harlem, New York, has a different tactic for framing conversations about evolution. Like Higgins, she knows that her students “need to understand this process, because when they get to high school they’ll be expected to know it.” So she brings in a variety of props—including skulls representing different stages of human development and photographs showing the different beak shapes of Darwin’s finches—to make learning and talking about evolution fun. During class discussions, Moskowitz invites students to try and figure out reasons for different beak shapes and skull sizes. “I’m constantly asking, ‘what do *you* think?’”

Higgins says that question is essential for teachers to keep in mind. “My students are inner-city kids who are very involved in their Baptist churches. Most of them end up focusing their essays on God and the Bible. They took it out of the scientific context and put it into their comfort zone.” Higgins’ essay assignment is kept separate from what the students are learning about evolution in science class—but it allows students some room to explore on their own the debate that’s raging in the headlines. □

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