

**National Association of Geoscience Teachers
Position Statement on Teaching Evolution**

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The National Association of Geoscience Teachers (NAGT) recognizes that the scientific theory of evolution is a foundational concept of science, and therefore must also be a cornerstone of science education. Evolution in the broadest sense refers to any change over time. The study of Earth's evolution provides society with the time and space perspectives necessary to understand how Earth's physical and biological processes developed, provides insight into the natural processes active on Earth, and shapes our view of Earth's future.

Evolutionary studies apply to most branches of science, including organic evolution, cosmic evolution, geologic evolution, planetary evolution, and cultural evolution. Each of these subdisciplines of science provides evidence that evolution is pervasive: galaxies have changed, stars and planets have changed, Earth has changed, life forms on Earth have changed, and human culture has changed. Evolution is therefore factual and is a unifying concept of the natural sciences. For this reason, the National Science Education Standards (NRC), Benchmarks for Science Literacy (AAAS), numerous national education policy documents, and individual states, through their published science education frameworks, all recognize that evolution is a unifying concept for science disciplines and provides students with the foundation to help them understand the natural world. NAGT fully agrees with and supports the scientific validity of evolution as reflected in the position statements of the numerous scientific societies that unanimously support evolution on scientific grounds. NAGT further maintains that the scientific theory of evolution should be taught to students of all grade levels as a unifying concept without distraction of non-scientific or anti-scientific influence.

Published and reaffirmed position statements on the scientific validity of evolution by all of the scientific societies clearly demonstrate that the modern scientific community no longer debates whether evolution has occurred. Scientific investigation of the mechanisms of evolution and the interconnected "details" of mechanism, process, history, and outcome remain at the current scientific forefront of evolutionary studies. This is the nature of scientific inquiry itself: to continually evaluate scientific theories with an eye towards improving our scientific models and adding more details to our understanding of the natural world. Scientists often disagree about explanations of how evolution works,

the importance of specific evolutionary processes, or the patterns that are observed, but all agree that evolution has occurred and is occurring now. Global change will be the future projection of past and ongoing evolutionary processes. While evolution is factual, evolution is also a “scientific theory”, which is an explanation for the observed changes. This usage of theory should not be confused with the non-scientific usage of theory as an ad-hoc idea unsupported by testing or evidence.

In science, disagreements are subject to rules of scientific evaluation, and this includes the methodologies of teaching scientific concepts. Scientific conclusions are tested by experiment, observation, and evaluation. Sound practices of scientific education are tested and evaluated much the same way. NAGT recognizes that invoking non-naturalistic or supernatural events or beings, often guised as “creation science,” “scientific creationism,” or “intelligent design theory,” are not scientific in character, do not conform to the scientific usage of the word theory, and should not be part of valid science curricula.

As stated in NAGT’s Constitution, the purpose of the NAGT is to foster improvements in the teaching of the earth sciences at all levels of formal and informal instruction, to emphasize the relevance and cultural significance of the earth sciences, and to disseminate knowledge in this field to educators and the general public. The NAGT fully accepts its role in the evaluation and betterment of the teaching of scientific evolution in formal and informal educational settings, with the explicit goal of helping everyone to understand the scientific merit this fundamental concept has in modern science. The *Journal of Geoscience Education* publishes papers related to research concerning the pedagogy, assessment, history, philosophy and culture of teaching and learning about the geosciences, especially of fundamental concepts like geologic time and faunal and stratigraphic succession, all aspects of evolution.