



Canadian Federation  
of Earth Sciences

Fédération canadienne  
des sciences de la Terre

*The unified voice of Earth Science in Canada*

*La voix unifiée des sciences de la terre au Canada*

### **CFES position paper on Creationism / Intelligent Design - 2008**

Canadian media report growing public pressure to introduce Creationism and its equivalent Intelligent Design (ID) in school curricula, hinting that Creationism/ID is a 'theory', thus suggesting that it shares common ground with science-based theories. Such reporting ignores the fundamental difference between faith and measurable facts. CFES-FCST is extremely concerned about this trend, and not only because of the demonstrated importance of science to Canadian society.

Science progresses through the application of the scientific method in which hypotheses are supported or falsified. Hypotheses are tested through meticulous observation and experimentation. Results are reported in articles which are reviewed thoroughly by more than one expert in the field (peer review). When experts conclude that it is no longer possible to refute a hypothesis, it becomes a theory. The road from hypothesis to theory is long and arduous and may take decades, even centuries. A theory is therefore an extremely well-substantiated explanation of certain aspects of the natural world, incorporating facts and tested hypotheses. Thus, proper use of the scientific method results in the discovery of universal truths from which all of humanity, irrespective of religious leanings, may benefit. Unlike common vernacular sometimes suggests, a theory is anything but a vague, speculative idea.

The theory of plate tectonics for example explains the motion of continental plates which form the Earth's crust. It explains why and where earthquakes occur, and why mountain chains, mineral assemblages and fossil fuels are where we find them. Similarly, the theory of evolution explains how species evolve through genetic mutation over time. Both are solid theories in the sense that there are no measurable and observable facts that indicate that they are wrong. In addition, we know the age of the earth (ca. 4.5 billion years) and we can date events that took place between the time of origin of the earth and today by measuring the remaining amounts of naturally occurring radio-active elements of which the half lives (the time during which the element changes its properties so that half of its original mass remains) can be reliably and accurately calculated.

Creationism and ID do not qualify as science, because the scientific method is not deployed and these ideas are therefore not theories or hypotheses in universally accepted scientific sense. Hence, Creationism and ID do not belong in any K-12 science curriculum. CFES-FCST strongly recommends that science education is limited to those subjects to which the scientific method applies.