

## **Science Education, Intelligent Design and Creationism**

### **A statement from the Association for Science Education**

#### **The purpose of this statement**

This statement has been issued against a backdrop of concern about the teaching of controversial issues in science, in particular Intelligent Design and Creationism. The statement has been agreed by ASE Council. However the statement does not necessarily represent the views of all ASE members. ASE recognises that the science teaching profession includes individuals with a range of religious and non religious perspectives and that there will be some members, albeit a small number, whose personal perspectives might not resonate fully with these messages. It is, however, our intention that all members and others who are concerned about this controversial issue will find guidance and direction herein.

An important professional challenge for science teachers is the need to develop a sensitivity to the many belief systems which will permeate a group of learners and to ensure that, should questions of belief arise, they are well prepared to offer an appropriate level of engagement which retains a focus on science and what constitutes a viable scientific theory, whilst respecting the personal belief systems of individual learners.

#### **What is meant by Intelligent Design?**

Intelligent Design is a claim that many living organisms are so complex that their existence cannot be explained by natural evolutionary processes. Intelligent Design also claims that the complexity of such organisms can be accounted for only by invoking the intervention of an agent of design – a designer.

#### **Should Intelligent Design find a place in school science education?**

The rationale for science education involves the stimulation and motivation of young people towards appreciating and understanding some of the key ideas in science. It aims to engage them in exploring first hand the processes of science through experimentation, investigation, argument, and modelling thereby teaching them how science works in both an historical context and within the social community which is science. In doing so, science education explores the relationships between evidence and theory whilst appreciating the provisional nature of scientific 'knowledge'. Such an education should prepare learners to be confident in engaging with scientific issues and be able to take a critical approach when evaluating claims which are 'scientific', thereby making an assessment of what might be seen as 'good science' and 'poor science'.

When set against this rationale it is clear to us that Intelligent Design has no grounds for sharing a platform as a scientific 'theory'. It has no underpinning scientific principles or explanations to support it. Furthermore it is not accepted as a competing scientific theory by the international science community nor is it part of the science curriculum. It is not science at all. Intelligent Design belongs to a different domain and should not be presented to learners as a competing or alternative scientific idea. As such, Intelligent Design has no place in the science education of young people in school.

### **Should Intelligent Design be presented as an example of a controversy in science?**

There are many examples which teachers might use to illustrate controversial issues in science. Some are competing ideas such as the nature of light – waves or particles or heliocentric v geocentric notions of the solar system, others might be examples of poorly planned and inadequately tested science such as the claim for 'cold fusion' or even examples of 'dishonest or biased science', such as the case of the midwife toad. All these examples deserve a place in science education as they are founded to a greater or lesser degree on aspects of scientific methodology. Their study will better enable learners to take a more critical and informed view of claims which purport to be 'scientific'. Intelligent Design, with no foundation in scientific methodology, cannot be classed as science, not even bad or controversial science.

### **Should Intelligent Design be included in other areas of the curriculum?**

The ASE does not claim to have any authoritative voice regarding religious and moral education or other areas of the curriculum. However we recognise that an idea which suggests the existence of an 'intelligent designer' is more likely to find a place in a course which deals explicitly with belief systems. Should Intelligent Design find such a place, we strongly argue that it should not be presented as an alternative scientific theory.

### **Doesn't Creationism sit alongside theories of creation such as the 'big bang'?**

The concept of Intelligent Design is only one of many religious views concerning the nature of the universe. A related idea is Creationism (or 'Young Earth Creationism') which takes the view that the universe was created very recently. Not all religious believers hold these or similar views and many find it perfectly possible to combine their faith with a scientific description of the universe. When ideas about the origin of the universe are covered in science lessons it is appropriate that teachers share with learners the tentative nature of a theory such as the 'big bang'. There is mounting evidence to support the idea that the universe at one time underwent a singularity which we call a 'big bang'. However the context of such teaching would also explore alternative theories, many in existence in the mid 20<sup>th</sup>. century and which were supported by evidence at the time, which offered competition to the big bang notion. This is an example of how evidence and theories coexist and interact in the culture of science and how they drive the direction of scientific endeavour. Creationism, like Intelligent Design, is not based on scientific evidence and, as such, is not a scientific theory.

### **Additional statements**

Statements which are aligned with this ASE position have been made by the Interacademy Panel; a global network of the world's science academies, and by the Department for Children, Schools and Families (DCSF). These can be obtained from:

Interacademy Panel statement [www.royalsoc.ac.uk/document.asp?tip=1&id=4926](http://www.royalsoc.ac.uk/document.asp?tip=1&id=4926)

DCSF guidance on the place of creationism and intelligent design in science lessons  
[www.teachernet.gov.uk/docbank/index.cfm?id=11890](http://www.teachernet.gov.uk/docbank/index.cfm?id=11890)

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