



## **National Curriculum Review - Call for Evidence Submission from the British Humanist Association (BHA) April 2011**

### **About us**

The British Humanist Association (BHA) is the national charity working on behalf of non-religious people who seek to live ethical and fulfilling lives on the basis of reason and humanity. We promote Humanism, support and represent the non-religious, and promote a secular state and equal treatment in law and policy of everyone, regardless of religion or belief. Founded in 1896, we have around 30,000 members and supporters, and over 70 local and special interest affiliates.

The BHA is an active member of many organisations working in education. We also provide materials and advice to parents, governors, students, teachers and academics. We have made detailed responses to all recent reviews of the school curriculum, and submit memoranda of evidence to parliamentary select committees on a range of education issues.

We welcome the opportunity to respond to this review of the National Curriculum and look forward to working closely with government as this work progresses. We will be responding to the sections and questions that are most relevant to our work and in which we have considerable expertise.

### **Summary**

We are in agreement with the government that a National Curriculum should teach 'the essential knowledge and understanding that pupils should be expected to have to enable them to take their place as educated members of society'. We also agree that a good National Curriculum 'should embody our cultural and scientific inheritance; the best that our past and present generations have to pass on to the next.'<sup>1</sup>

**In keeping with these principles, our main recommendations are:**

#### **Religious Education (RE)**

- RE should be included in this review and made a National Curriculum subject.

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<sup>1</sup> Department for Education, 'Review of the National Curriculum in England: Rationale for the National Curriculum Review', accessed <http://www.education.gov.uk/b0073043/remit-for-review-of-the-national-curriculum-in-england/rationale-for-the-national-curriculum-review>

- Education about religious and non-religious worldviews (currently taught through RE) should be part of the nationally determined content that will emerge from the present review. This is to ensure that the provision of such education in schools is of a higher standard, less prescriptive and includes learning about Britain's rich humanist heritage as well as its religious traditions.

### **Personal, Social, Health and Economic education (PSHE)**

- PSHE should be included in this review and made a National Curriculum subject.
- All children should have access to age-appropriate PSHE including Sex and Relationships Education (SRE) through making PSHE a compulsory part of the National Curriculum. We are aware that the government is planning to carry out an internal review of PSHE provision separate from this review. The Macdonald review of PSHE, carried out by the last government, recommended that PSHE became part of the National Curriculum. We encourage the government to use this current opportunity to make this change.

### **Science**

- Pupils should learn about and investigate the concepts of natural selection and evolution. Evolution is arguably the single most important idea underlying the life sciences today. In order to lay the foundation for a full scientific understanding of the subject it is vital that the subject is included in the primary curriculum as well as taught in all years of secondary education.
- In order for students to be able to understand the facts that the National Curriculum will impart to them, the science curriculum should make direct reference to the value of science as a way of finding out knowledge. Pupils should understand that the scientific method has provided a consistently reliable way of finding provisional answers to questions about the nature and behaviour of things. They should understand that it is rational, universal, enquiry-based, and one of humanity's greatest achievements
- SRE including the basic principles of human reproduction and physiology must be included in the science curriculum from primary school. It is essential that all children are able to learn about the changes to the human body caused by puberty and how to respond to them in advance of them experiencing these changes. Good SRE reduces unwanted pregnancies, the incidence of abortion and sexually transmitted diseases.

### **Citizenship**

- Citizenship education should be maintained within the National Curriculum. The subject has an important role imparting knowledge and understanding of human rights, civic responsibilities, democracy and the rule of law. It is essential to enable all children from a range of backgrounds to participate fully in a free and open society.

## **6 b) What do you think are the key things that should be done to improve the current National Curriculum?**

A key thing that should be done to improve the National Curriculum is to include nationally determined Religious Education (RE) and Personal, Social, Health and Economic Education (PSHE) within it.

We were encouraged when the Education Secretary Rt Hon Michael Gove MP announced in July 2010 that RE and PSHE would be included within the review<sup>2</sup>. It is deeply disappointing that the review has not, so far, included these subjects.

We would advise the government to implement the Secretary of State's announcement and to take the opportunity offered by this review to consider the status of these subjects within the National Curriculum. A revised National Curriculum should include nationally determined RE and PSHE Education.

### **'Religious Education'**

We have been involved in the curriculum subject of Religious Education (RE) for over forty years – for example, as a founding member of the Religious Education Council. There are humanist representatives in some sort of relationship with 88 standing advisory councils for religious education (SACREs) in England and Wales and the BHA itself was involved in work towards the national framework for RE in 2004 and government guidance on RE in 2010.

The BHA campaigns for reform of RE, not for its abolition or for mass withdrawal, because we believe that all pupils in all types of school should have the opportunity to consider philosophical and fundamental questions, and that in a pluralist society we should learn about each other's beliefs, including humanist ones. We campaign for a reformed RE called by a more inclusive name such as Belief and Values Education, which would be characterised by inclusiveness, impartiality, objectivity, fairness, balance and relevance. We believe that such a subject should take its place on the National Curriculum.

Good quality education about religious and non-religious approaches to life such as Humanism should be an important part of the curriculum. It helps young people to understand the views and opinions of people whose beliefs and values differ from their own. It enriches pupils' knowledge of the religious and humanist heritage of humanity and thus supports other subjects such as History, English Literature, Art, Music, and Geography. It allows pupils to engage with serious ethical and philosophical questions in a way that develops important skills of critical thinking, reasoning and inquiry.

However, the promise of the subject is at present unfulfilled. In part we believe this is because it is delivered as part of the subject called 'Religious Education', which is not on the National Curriculum. Instead, schools follow one of 150+ local syllabuses prescribed at local authority

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<sup>2</sup> On 19<sup>th</sup> July 2010, Michael Gove stated in the House of Commons, 'As part of our curriculum review later this year, we shall address both religious education and sex and relationship education', see <http://www.publications.parliament.uk/pa/cm201011/cmhansrd/cm100719/debtext/100719-0001.htm>

level by quasi-political committees of which teacher representatives constitute only one quarter. The syllabuses constructed are reviewed every five years.

The current set up is not delivering consistently good syllabuses. A 2010 Ofsted study rated Religious Education as 'inadequate' in one in five secondary schools in England. The report found 'very significant variability in the quantity and quality of support for RE provided to schools by local authorities.'<sup>3</sup> Commenting on the report, Chief Inspector Christine Gilbert said, 'This report highlights two things – first the need for better support and training for teachers and, secondly, the need for a reconsideration of the local arrangements for the oversight of RE, so schools can have a clear framework to use which helps them secure better student achievement in the subject.' Poor quality, prescriptive syllabuses stand against the objects of the current curriculum review. Making RE a part of the National Curriculum with a nationally determined curriculum would help to ensure all children receive their entitlement of high quality education about different beliefs and values.

In fact, national rather than local directives are already influential. SACREs draw heavily on national best practice to influence their curricula. A freedom of information request by the BHA to all 152 local authorities carried out in 2010 found that over the last five years some local education authorities have spent individually as much as £164,580 on external RE consultants. Twenty-five of the 129 SACREs that replied, just under one-fifth, had each spent over £25,000.<sup>4</sup> In addition, RE advisers, non-statutory guidance, Ofsted Inspections, GCSE syllabuses and RE textbooks are all likely to have at least as much influence on schools as SACREs.

Moreover, current reform to school structures will weaken the influence of locally determined syllabuses, making them increasingly irrelevant. Education reforms carried out in this parliament will lead to increasing numbers of schools able to opt out of locally determined syllabuses. Efforts made to generate new curricula every five years will be perceived increasingly as onerous and good quality, best practice guidance that can be drawn on by schools able to teach their own curricula will increase in value.

It is well established, including in the National Framework for RE, and supported by bodies such as the Religious Education Council, that Humanism should be included in the subject as recommended study for all pupils. Including RE in the National Curriculum would ensure that non-religious beliefs such as Humanism are consistently included alongside religions, whereas at present the teaching of Humanism is patchy in quality, if it is taught at all.

Making RE part of the National Curriculum would help to ensure a high quality curriculum, rather than the patchy delivery of RE that occurs under the present system. It is far easier for a national body to draw upon research and gather together engaged and genuinely representative experts, than it is for a local body. The success of the current non-statutory guidance on RE – welcomed by religious, non-religious and educational groups – demonstrates the type of quality curriculum that could be developed at national level. Teacher training would also improve as teachers would not have to learn and develop resources for a new curriculum when moving across a local authority boundary. All of these factors would likely lead to a higher quality of subject provision.

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<sup>3</sup> Ofsted, 'Transforming Religious Education' (2010)

<sup>4</sup> Freedom of Information request to all local authorities in England.

### **RE in 'faith' schools**

The current requirement for RE in all maintained schools but not as part of the National Curriculum allows many state-maintained schools with a religious character to meet their statutory requirement to provide RE by providing confessional instruction in the particular religion of the school. For example the most recent guidance on RE in Catholic schools in England, states that 'Religious education given to children and young people in Catholic schools must always... contribute to their education in and to the Catholic faith.'<sup>5</sup>

This opt-out option for 'faith' schools results in many students currently not having access to RE that explores a wide range of views and opinions, including of people whose beliefs and values differ from their own. This negates one of the key arguments in support of the subject – the promotion of community cohesion.

Religious education that presents a single worldview does not allow young people to develop critical thinking skills to evaluate the views and evidence they are presented with and form their own conclusions. In addition, it is confusing for young people to have conflicting information presented as absolute fact in both RE and other lessons, such as science.

Religious education as currently taught in some 'faith' schools can be exclusionary and offensive to those of a different belief from the school. For example, Church of England guidance on the teaching of RE in schools states that 'there is a divide between those with a religious faith and those for whom religion is meaningless' and that, 'the secular assumption that there is no reality beyond the physical world is ultimately sterile.'<sup>6</sup> It remains Church of England policy to "nourish those of the faith" but to "challenge those who have no faith"<sup>7</sup>.

In 2004 a Department of Education (then DfES) survey found that 65% of 12-19 year olds described themselves as non-religious. Many of these students will attend state schools with a religious character. RE that dismisses students' own beliefs in such a way may lead students to feel that they have no meaningful perspective to bring to debates on key moral issues or that 'values' or 'morals' have nothing to do with them. This is ultimately damaging for the spiritual, moral, social and cultural development of these young people.

**As RE is not included at present in this review of the National Curriculum, we have only summarised above some of the key points for its inclusion. Should the government consult further or more specifically on RE, which we strongly recommend, or at the request of the review team, we will make a more full, detailed and evidenced response.**

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<sup>5</sup> 'The Catholic Education Service Religious Education curriculum directory for Catholic schools' (1996)

<sup>6</sup> Church of England and National Society, 'Excellence and distinctiveness: Guidance on RE in Church of England Schools' (2005)

<sup>7</sup> Archbishops' Council: 'The Way Ahead: Church of England schools in the new millennium', June 2001 (the 'Dearing' report).

## **PSHE**

The government has announced its intention to conduct a separate 'internal' review of PSHE later in 2011, and not to include it in this review.

PSHE has already been under intense, comprehensive and expert review in recent years. In 2009, for example, the comprehensive review by Sir Alasdair MacDonald CBE recommended that PSHE education should become part of the statutory National Curriculum, in both primary and secondary education, and that recommendation was taken up by the Rose review of the primary curriculum. In 2010, with cross-Party support, PSHE, including SRE, was going to be made compulsory through the Children, Schools and Families Act. It was deeply unfortunate that those proposals were dropped at the last minute, although there is no reason why the government should not seek to rectify that by making PSHE part of the National Curriculum as soon as it can.

Rather than conduct further unnecessary reviews, we recommend that the government should take this opportunity to make PSHE part of the National Curriculum.

A vital task for all schools is the moral education of children, which includes the encouragement of understanding and respect between different groups in society. PSHE has an important role to play as part of a broader curriculum including RE and Citizenship education,.

We unequivocally support making PSHE a statutory part of the National Curriculum. We believe that once PSHE becomes statutory, it should be treated like any other National Curriculum subject. Any and all special powers that governors had in determining specific aspects of their school's PSHE should come to an end and the religious character of a school should not deprive children of their entitlement to good PSHE. We believe that the right of children to PSHE education is more important than any other consideration and consequently that the right of parental withdrawal should cease.

## **SRE**

Good quality, age-appropriate SRE is known to reduce unwanted pregnancies, to reduce the spread of sexually transmitted infections (STIs), and to equip young people with the language and tools to be clear about personal boundaries and understand appropriate and inappropriate behaviour, to be able assertively to resist improper pressure and to know whom to talk to and how to ask for help if and when they need it. For older children it helps them resist pressure, make safe choices and be able to challenge and be critical of misleading and inappropriate messages about sex in the media. National and International research shows that young people who have had good SRE are more likely to choose to delay having sex for the first time. When they do have sex they are more likely to use condoms and contraception<sup>8</sup>.

All children should be entitled to full and accurate SRE appropriate to their age, including unbiased information on contraception, STIs, abortion, sexual orientation, and the many forms of family relationship conducive to individual fulfilment and the stability of society.

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<sup>8</sup> See Sex Education Forum, 'Does sex and relationships education work? A Sex Education Forum evidence briefing'

As there is strong evidence that comprehensive SRE reduces the number of unwanted pregnancies and the incidence of STIs, the current status of SRE has important ramifications for public health. It is also very confusing for young people to have to cope with the changes that occur to their bodies without the necessary information to respond.

Despite the obvious public health and child rights imperative for SRE, the current situation means that schools do not have to teach any SRE in PSHE lessons or go beyond basic information on human reproduction and sexually transmitted infections in the science curriculum. Parents are entitled to withdraw their children from these lessons.

Pupils' right to comprehensive and objective SRE is further compromised in 'faith' schools, which are entitled to teach SRE in a way skewed by religious doctrine. Good SRE is important enough for health and wellbeing that 'faith' schools should not be allowed to deny pupils good, comprehensive and objective SRE on religious grounds. Making SRE part of the National Curriculum could help to address this.

Making comprehensive SRE compulsory in all schools, together with the necessary training and investment in teaching resources and information, should help to give teachers in all schools the skills and confidence to teach excellent SRE to their pupils.

A robust National Curriculum is also vital for informing parents of the key information that their child should be learning. This is of particular importance for parents of children attending Academy schools, which are able to opt out from the National Curriculum and from any obligation to teach even basic human reproduction.

**It is of vital importance that PSHE is addressed by this review and that age-appropriate PSHE including SRE is placed on the National Curriculum.**

The BHA is a member of the Sex Education Forum, a collaboration of member organisations and practitioner networks committed to working with stakeholders to achieve quality SRE.

We fully endorse their submission to this review on the importance of SRE in PSHE and the need for the subject to be nationally determined.

## **11 a) Science**

**What knowledge do you regard as essential to include in the Programme(s) of Study for science? Please also set out why this is essential and at what age or key stage.**

### **Evolution in primary and secondary National Curriculum science**

The effective teaching of evolution is vital for scientific understanding and yet it is currently not a compulsory part of the science curriculum until well into secondary school.

Evolution is the most important idea underlying biological science. It is a key concept that children should be introduced to at an early stage so as to protect them from popular misconceptions (“it is all a matter of chance”) and ensure a firm scientific understanding when they study it in more detail and depth later on. An understanding of evolution is central to understanding all aspects of biology, from human behaviour to the genetic basis of disease, to ecological relationships and how the environment affects the development and diversity of life on earth. As such it should be a central tenet of, not, as is currently too often the case, marginal to the study of school biology.

The wealth of resources on evolution available for children of primary school age clearly demonstrates their ability to grasp its central concepts.

The importance of teaching evolution from primary age is recognised by leading scientists, educationalists and by the previous government. In both 2009 and 2010, a number of leading scientists and science educators, including among them three Nobel laureates, have supported our call to include the teaching of evolution on the primary curriculum. The joint letters, sent first to the Labour government and then to the present Education Secretary Rt Hon Michael Gove MP, are included as an the appendix to this submission, and make the case for the importance of including evolution and natural selection as compulsory parts of the primary science curriculum. In 2009, that was agreed but, deeply unfortunately, was dropped from legislation in the final days of the last parliament. Now is the time for this government to pick up the baton and make sure that children and young people are taught about evolution in science in both primary and secondary schools. We urge the review to recommend its inclusion.

This area is also of particular relevance to the government’s commitment that the National Curriculum ‘should embody our cultural and scientific inheritance; the best that our past and present generations have to pass on to the next’. Two years ago we celebrated the 200th anniversary of Charles Darwin’s birth and the 150th anniversary of the publication of *On the Origin of Species* as one of the most exciting and influential bodies of work ever published. It is essential that all students understand the ground-breaking work of the British scientist responsible for the theory of evolution by natural selection.

### **Creationism in science**

We are pleased that the government is clear that ‘creationist’ views of the origin of living things such as ‘intelligent design’ are not science and have no place in the science curriculum. We remain deeply concerned however that in state-maintained ‘faith’ schools that are able to teach their own syllabus of RE, creationist ideas about the origin of life will be presented. If evolution



is not taught in science lessons throughout the key stages then children will not have the opportunity to develop understanding of the difference between scientific theories and religious myths, such as young earth creationism. We are deeply disturbed at evidence that some faith schools teach evolution in science lessons as untrue but necessary for passing examinations.

Additionally, a robust National Curriculum that fully supports the teaching of evolution will provide a vital guide to parents of children in Academy schools that are able to opt out of the National Curriculum, about the core body of knowledge that their child would otherwise be learning.

**We urge the government to ensure that the study of evolution is included at all key stages so as to ensure that all students are able to develop a firm understanding of this important concept.**

### **The Scientific Method**

In order for students to be able to understand the facts that the National Curriculum will impart to them, the science curriculum should make direct reference to the value of science as a way of finding out knowledge. Pupils should understand that the scientific method has provided a consistently reliable way of finding provisional answers to questions about the nature and behaviour of things. They should understand that it is rational, universal, enquiry-based, and one of humanity's greatest achievements.

Serious consideration should be given to including an overview of the history of human understanding of the world and the development of science as an inspiring story of achievement. This is arguably more important at pre-university level than some detailed (but usually simplified) scientific facts and theories. For those going on to study science at a more advanced level 'school science' can be quickly picked up. More pupils are likely to be interested in doing so if they can understand the way scientific understanding has advanced, especially over the last few centuries.

### **SRE as part of the science curriculum**

As we have outlined above, it is of paramount importance that good quality SRE is provided to all pupils, including the basic principles of human reproduction and physiology. Comprehensive SRE should be provided to all pupils in the science curriculum from primary school.

Because of the importance of SRE for health and wellbeing, we recommend that the government remove the parental opt out for this aspect of the science curriculum.

**15 a) Citizenship is currently a compulsory National Curriculum subject, with a statutory Programme of Study, at Key Stages 3 and 4. In future, do you think citizenship should continue to be a National Curriculum subject?**

We are strongly committed to National Curriculum Citizenship education in schools. Citizenship is important for ensuring that young people are able to access the knowledge they require to take their place in society as well as assist in the development of young people as citizens with critical faculties who are socially and morally responsible.

Ensuring that citizenship remains a National Curriculum subject is vital for ensuring that all students are able to access good quality citizenship education.

**Citizenship Education and Faith Schools**

We would not claim that 'identity politics' are wholly incompatible with democratic politics, but we do have concerns about religious schools and the need to ensure that the teaching of Citizenship education in these schools meets nationally agreed requirements.

The government must ensure that schools that teach according to the tenets of the faith of the school nevertheless promote gender equality and sexual orientation equality. This is both important to delivering a tolerant society where equality is respected by all children as well as to properly equipping and preparing children for a life navigating the norms of a secular society where equality before the law is respected.

Recent rulings in UK Courts have underlined the fact that the UK is no longer a society where religious principles guide or shape the secular law. Legislation, including the 2010 Equality Act, has enshrined the dignity of the individual to be protected from discrimination. In order to obtain work or take part in public service young people will be required to commit to equal opportunities. In order to achieve a coherent public sphere, it is vital that all children are provided with this opportunity to learn about their rights and responsibilities as global citizens.

There is also evidence that strong religious identities are not those which best equip young people to participate in civil society. The Runnymede trust in an interim report on their large piece of qualitative research into 'faith' schools found that, in faith schools, 'the goal of promoting a strong faith identity can sometimes be in tension with that of enabling community cohesion.'<sup>9</sup> Similar findings come from research by the Nestlé Social Research Programme into young people's civic action. The group found that young people who strongly associated their identity with their nation or religion were least likely to vote or to take part in demonstrations. These young people had the lowest rate of participation in recent community and political activities.<sup>10</sup>

Ofsted's 2006 report on Citizenship identified particular problems in 'faith' schools that stated that: 'Especially in faith schools, (teachers) cited the ethical and moral values of their pupils as evidence of effective provision. In these schools, head teachers may well point to the

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<sup>9</sup> Audrey Osler, 'Faith Schools and Community Cohesion: A Runnymede Trust Interim Report', 2007

<sup>10</sup> Helen Haste 'My Voice. My Vote, My Community: a study of young people's civic action and inaction', Nestle Social Research programme Report number four, 2005.

demeanour of their pupils as good citizens in a general sense, and to all the parts of their school's work that contribute to this; but they have missed the point that National Curriculum citizenship is now a subject that is taught, learned, assessed and practised.<sup>11</sup>

This judgment, finds an echo in the widely reported comments of David Bell when he was Chief Inspector of Schools who reported particular concerns for the teaching of Citizenship in independent 'faith' schools that did not teach children enough about a 'common heritage' and needed to do more to promote principles of mutual tolerance and social inclusion. Mr Bell reported that 'I worry that many young people are being educated in faith-based schools, with little appreciation of their wider responsibilities and obligations to British society.'<sup>12</sup>

Statutory Citizenship Education is essential for ensuring that children in all schools receive the information they require to take their place in society.

### **Delivering Citizenship Education through RE**

We would be concerned if citizenship education was removed from the National Curriculum and instead taught through a space set aside for religious education. As stipulated above, religious education is both patchy, often ignoring the plurality of religious and non-religious beliefs and in 'faith' schools is permitted to be confessional in nature.

One reason for our support of statutory Citizenship education is that it allows a space for values to be discussed outside the context of RE and so is more inclusive of those whose beliefs are not religious. We would be concerned if Citizenship were taught through RE at the risk of implying that values, such as those values that are explored in Citizenship, are necessarily dependent on *faith*. If Citizenship were largely taught through RE we should be concerned that non-religious young people might feel alienated from the discussion of shared values.

A concern that being a good citizen would be bound up with ideas of being a religious adherent are particularly the case in faith schools. This threatens to instil a sense of 'incivility' for those outside the religious world view and especially those of no religious belief. A worrying example of religious education is to be found in the Church of England's document 'Excellence and Distinctiveness: Guidance on RE in Church of England Schools'. Although on page 6 'promoting inclusion for all' is recommended, on the same page the beliefs of those who do not believe in a non-material world are described as 'ultimately sterile' – this is hardly the model of inclusion. The document also draws the distinction noted above between Christian children who are to be 'nourish[ed]', children of other religions, who are to be 'encourage[d]' and children with no faith who are to be 'challenge[d]' (See page 5 of this submission).

**We urge the Government to maintain Citizenship as a National Curriculum subject.**

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<sup>11</sup> *Towards Consensus? Citizenship in Secondary Schools*, Ofsted, 2006

<sup>12</sup> BBC, Muslim Schools Citizenship Warning, <http://news.bbc.co.uk/1/hi/education/4180845.stm>

**25 d) How do you think the needs of other specific groups of pupils should be addressed through the National Curriculum?**

The consultation has identified specific groups of pupils whose needs must be taken into account when designing an effective curriculum. It is important to consider the ways that pupils from religious families are treated through the National Curriculum.

In many aspects of the education system in the UK, young people are discriminated against for their or their parents' beliefs. In order for young people to be able to exercise freedom of belief and expression it is vitally important that young people are treated as individuals in the school system.

**The curriculum must adopt a child focused 'needs based' approach in order to allow children to both develop and express their own beliefs as well as access necessary parts of the curriculum.**

**Our recommendations for a revised curriculum are:**

**Religious Education (RE)**

- RE should be included in this review and made a National Curriculum subject.
- Education about religious and non-religious worldviews (currently taught through Religious Education (RE)) should be part of the nationally determined content that will emerge from the present review. This is to ensure that the provision of such education in schools is of a higher standard, less prescriptive and includes learning about Britain's rich humanist heritage as well as its religious traditions.

**Personal, Social, Health and Economic education (PSHE)**

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- All children should have access to age-appropriate PSHE including Sex and Relationships Education (SRE) through making PSHE a compulsory part of the National Curriculum. We are aware that the government is planning to carry out an internal review of PSHE provision separate from this review. The Macdonald review of PSHE, carried out by the last government recommended that PSHE became part of the National Curriculum. We encourage the government to use this current opportunity to make this change.

**Science**

- Pupils should learn about and investigate the concepts of natural selection and evolution. Evolution is arguably the single most important idea underlying the life sciences today. In order to lay the foundation for a full scientific understanding of the subject it is vital that the subject is included in the primary curriculum as well as taught in all years of secondary education.

- In order for students to be able to understand the facts that the National Curriculum will impart to them, the science curriculum should make direct reference to the value of science as a way of finding out knowledge. Pupils should understand that the scientific method has provided a consistently reliable way of finding provisional answers to questions about the nature and behaviour of things. They should understand that it is rational, universal, enquiry-based, and one of humanity's greatest achievements.
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### **Citizenship**

- Citizenship education should be maintained within the National Curriculum. The subject has an important role imparting knowledge and understanding of human rights, civic responsibilities, democracy and the rule of law. It is essential to enable all children from a range of backgrounds to participate fully in a free and open society.

**For more details, information and evidence please contact:**

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## Appendix

1. Letter to Rt Hon Ed Balls MP, Secretary of State for Children, Schools and Families, on the 27<sup>th</sup> July 2009 sent by the BHA and signed by leading scientists. The letter called on the Government to make vital changes to the proposed new science curriculum for primary schools in England. The letter called for the inclusion of evolution in the primary curriculum.

Rt Hon Ed Balls MP  
Secretary of State for Children, Schools and Families  
Department for Children, Schools and Families  
Sanctuary Buildings,  
Great Smith Street,  
London SW1P 3BT

27 July 2009

As scientists and educators, we are writing to seek improvements in the proposed 'Scientific and technological understanding' area of learning proposed in Sir Jim Rose's review of the primary school curriculum.

### Evolution

We find it extraordinary that evolution and natural selection find no place in the section 'Science – life and living things' (page 6). The theory of evolution is one of the most important ideas underlying biological science. It is a key concept that children should be introduced to at an early stage so as to ensure a firmer scientific understanding when they study it in more detail later on.

The wealth of new resources on evolution available for children of primary school age clearly demonstrates their ability to grasp its central concepts. We consider its inclusion vital.

### Scientific method

The 'Essential knowledge' section on page 2 of the document seeks to set out the key areas of knowledge of which children should develop a secure grasp. The list does not make reference to the value of science as a way of attempting to find explanations for observed natural phenomena. As this is science's principal function it must be referred to. We recommend adding it as the first item of the list: 'how the scientific method enables us to explain natural phenomena.'

The information provided under the 'Key skills' section of the same page taken together constitutes the scientific method, but the term itself is not referred to and this absence is notable. We recommend that the term 'scientific method' is explicitly incorporated as a key skill in this section.

### Enjoyment from science

We note that guidance on other draft areas of learning offer more emphasis on how rewarding and enlightening learning about them can be for pupils than does 'Scientific and technological understanding'. Our final recommendation is that at the end of the section

'Why is this area of learning important' on page one the following be added: 'Children's understanding of science is a source of inspiration, enjoyment and fulfilment. It enables them to participate in and respond to debates in the life of their communities about scientific and technological issues using skills of critical evaluation.'

We hope that these recommendations will be taken up by your Department to help ensure that primary science education is enjoyable and comprehensive.

Yours sincerely,

**Professor Sir Tom Blundell FRS FMedSci**  
**Professor Paul Braterman**  
**Professor Richard Dawkins FRS**  
**Professor Sir Anthony Epstein, CBE, FRS, hon FRSE, FRCP.**  
**Professor Robin Dunbar FBA**  
**Professor R. John Ellis FRS**  
**Dr Dylan Evans**  
**Sir James Gowans CBE FRCP FRS**  
**Adam Hart-Davis**  
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**Sir Tim Hunt FRS**  
**Professor Hugh Huxley FRS MBE**  
**Professor Steve Jones**  
**Professor Sir Hans Kornberg FRS**  
**Professor Sir Harold Kroto FRS**  
**Professor John Lee**  
**Sir Paul Nurse FRS**  
**Revd Professor Michael Reiss FIBiol, FRSA**  
**Sir David Smith FRS FRSE**  
**Professor Sir Kenneth Stuart FRCP**  
**Sir Fraser Stoddart FRS, FRSE**  
**Sir John Sulston FRS.**  
**Professor Sir David Weatherall FRS**  
**James Williams FIBio CSciTeach**  
**Professor Raymond Tallis FMedSci**  
**Professor Lewis Wolpert CBE FRS**

2. Letter to Rt Hon Michael Gove MP, Secretary of State for Education on the 17th June 2010 sent by the British Humanist Association and signed by leading scientists and educators. The letter urges the Secretary of State to protect and promote science in the school curriculum, and specifically, to include the teaching of evolution in the primary curriculum.

17 June 2010

Rt Hon Michael Gove MP  
Secretary of State for Children, Schools and Families  
Department for Education  
Sanctuary Buildings  
Great Smith Street  
London  
SW1P 3BT

Dear Mr Gove,

As scientists and educators, we are writing to urge you to protect and promote science in the school curriculum, with the specific inclusion of the teaching of evolution in the primary curriculum. For the first time, the teaching of evolution had been included in the revised primary curriculum in the previous government's Children, Schools and Families Bill. We regret that those reforms were dropped from the legislation in the final days of the last parliament. We are deeply concerned to ensure that evolution and science form a core part of any revised primary curriculum. Science is not only key to understanding the world around us, but it is also vital for democratic citizenship. Without an understanding of key scientific concepts people cannot properly engage with public debates around the scientific and technological issues which will directly affect their lives. The teaching of science in schools also opens up the wonder of the natural world to inquiring minds, and at the same time equips young people with the tools for explaining natural phenomena and an understanding and practical application of scientific methods. In particular, the evolution is the most important idea underlying biological science. It is a key concept that children should be introduced to at an early stage so as to ensure a firm scientific understanding when they study it in more depth later on. An understanding of evolution is central to understanding all aspects of biology, from human behaviour to the genetic basis of disease, to ecological relationships and how the environment affects the development and diversity of life on earth. As such it should be a central tenet, not, as is currently too often the case, marginal to the study of school biology. Whatever curriculum reforms are made, we urge that there is teaching of evolution for all school age children, and especially in the primary curriculum.

Yours sincerely,

**Professor Sir Tom Blundell FRS FMedSci** is Sir William Dunn Professor of Biochemistry and head of the Department of Biochemistry at the University of Cambridge.

**Paul Braterman** is Professor Emeritus, University of North Texas and Honorary Senior Research Fellow in Chemistry, University of Glasgow.

**Professor Richard Dawkins FRS** is the former Professor for Public Understanding of Science at Oxford University and a prominent broadcaster on science.



**Professor Robin Dunbar FBA** is Professor of Evolutionary Anthropology at the University of Oxford.

**Professor Sir Anthony Epstein, CBE, FRS, hon FRSE, FRCP** is former Professor of Pathology, and Head of Department at the University of Bristol.

**Professor R. John Ellis FRS** is professor at the department of Biological Sciences, University of Warwick, Gairdner International Award Winner 2006, Cell Stress Society International Medal winner 2008.

**Dr Dylan Evans** is Lecturer in Behavioural Science in the School of Medicine at University College Cork

**Sir James Gowans CBE FRCP FRS** was Henry Dale Research Professor of the Royal Society at the University of Oxford

**Professor Robert A Hinde CBE FRS FBE** is Emeritus Royal Society Research Professor of Zoology at the University of Cambridge and former master of St. John's College, Cambridge. **Sir Tim Hunt FRS** is a Nobel laureate in Physiology or Medicine.

**Dr Julian Huppert**, Member of Parliament.

**Professor Hugh Huxley FRS MBE** won the Royal Medal in 1977 and the Copley Medal in 1997. He was Professor of biology at Brandeis University.

**Professor Steve Jones** is professor of genetics and head of the biology department at University College London.

**Professor Sir Hans Kornberg FRS** is Professor of Biology at Boston University and former Master of Christ's College, Cambridge.

**Professor Sir Harold Kroto FRS** was joint 1996 Nobel laureates in Chemistry.

**Professor John Lee FRCPATH** is consultant histopathologist at Rotherham General Hospital and clinical professor of pathology at Hull York Medical School. He has also broadcast on science and medicine.

**Sir Paul Nurse FRS** is a Nobel laureate in Physiology or Medicine and President of Rockefeller University.

**Revd Professor Michael Reiss FIBiol, FRSA** is Assistant Director and Professor of Science Education at the Institute of Education, University of London.

**Sir David Smith FRS FRSE** is former Principal of Edinburgh University (1987-1994), former President of Wolfson College, Oxford (1994-2000) and was awarded the Gold Medal for Botany of the Linnean Society in 1989.

**Professor Sir Kenneth Stuart FRCP** is a former adviser to Commonwealth Secretariat, London; Professor and Head of Department of Medicine, University of the West Indies, Jamaica; consultant, University Hospital, Jamaica; and consultant advisor to the Wellcome Trust.

**Sir Fraser Stoddart FRS, FRSE** is professor of Chemistry, Northwestern University

**Sir John Sulston FRS** is Chair, Institute for Science, Ethics and Innovation (ISEI) at the University of Manchester

**James Williams FIBio CSciTeach** is Lecturer in Science Education at the University of Sussex.

**Professor Raymond Tallis FMedSci** is Emeritus Professor of Geriatric Medicine at the University of Manchester.

**Professor Sir David Weatherall FRS**, current Chancellor of Keele University. Former Professor of Haematology, former Nuffield Professor of Clinical Medicine at the University of Oxford and former Regius Professor of Medicine.

**Professor Lewis Wolpert CBE FRS** is Emeritus Professor of Biology as applied to Medicine, University College London.