

## **Research Space**

Online educational resource

**14 resources for primary teachers on science religion encounters**

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# RESOURCES FOR PRIMARY TEACHERS ON SCIENCE/RELIGION ENCOUNTERS



# ABOUT NICER

## The National Institute for Christian Education Research

NICER is a University Research Centre at Canterbury Christ Church University. It undertakes research to inform the contribution of faith to the public understanding of education, to aid the mission of church schools, universities and Christian education in communities, to develop and improve religion and worldview education, and to support the work of Christians in education and leaders in education. It uses qualitative, quantitative and mixed methods research approaches in that work, and has developed novel approaches to investigating school ethos, character and curriculum in Christian schooling.

NICER receives funds from charities and other grant-making research bodies, supported by the University's commitment to the centre. NICER collaborates with specialists from other leading institutions, schools and research centres, including institutions of other religions and worldviews, across the country and from around the world. It acts as a hub to promote international Christian education research at the highest level, through seminars and conferences.

For more information about our work and to download recent reports visit our website

**[www.nicer.org.uk](http://www.nicer.org.uk)**

This project is being funded by Templeton World Charity Foundation as part of a wider scheme of research titled Big Questions in Classrooms.

Although studies have explored school pupils' attitudes concerning science and religion, there has been little research on beginning teachers' experiences in their development and formation and not much is known about how big questions are framed in classrooms or the extent of teachers' experiences of the science/religion encounter. This project addresses the gap, develops informed responses for teacher education and finds some preliminary understandings of the impact of the use of that knowledge in teacher education programmes.

Find out more at: **[www.nicer.org.uk/science-religion-encounters](http://www.nicer.org.uk/science-religion-encounters)**



**TEMPLETON WORLD**  
CHARITY FOUNDATION



**BIG QUESTIONS**  
*in* CLASSROOMS

# RESOURCES FOR PRIMARY TEACHERS ON SCIENCE/RELIGION ENCOUNTERS

## Science Religion Encounters Toolkit 14

This list of resources is primarily intended to support primary teachers of science and Religious Education who are interested in planning for Science/Religion Encounters. It is not intended to be exhaustive, but should introduce you to some areas of interest, or provide resources to expand your knowledge.

It is divided into 4 sections: Useful websites, general textbooks, edited anthologies and academic papers about the relationship between science and religion. Under each resource we've given a short introduction, alongside a link. We very much hope you enjoy navigating this fascinating area.

The NICER Science/Religion Encounters team <https://nicer.org.uk>

## SECTION 1: USEFUL WEBSITES

### Epistemic Insight Tutor Toolkit

Epistemic insight refers to 'knowledge about knowledge', and particularly knowledge about disciplines and how they interact. Teaching epistemic insight goes hand in hand with teaching a knowledge-rich, broad and balanced curriculum. Gaining epistemic insight is about developing an appreciation of individual disciplines' strengths and limitations by exploring how they work in cross disciplinary contexts. This website provides access to a tutor's toolkit. These are pedagogical tools such as the discipline wheel and question box that help teachers to plan lessons that cross disciplinary boundaries. The website explores the nature of Big questions and what it means to be scholarly and understand how knowledge is formed in various disciplines.

[sites.google.com/view/epistemicinsighttoolkit/toolkit](https://sites.google.com/view/epistemicinsighttoolkit/toolkit)

### God and the Big Bang

God and the Big Bang runs interactive workshop days for Year 5 – 13 students to discover, discuss, and debate science and faith's compatibility. They have produced a text and DVD resource to support teaching in this area. These use the questions put forward by students at God and the Big Bang school events. They explore "questions at the heart of contemporary science and Christian faith through the work of scientists, philosophers and thinkers who are also Christians." There are 5 units, including Genesis, The Rise of Humanity, Earthquakes and Evil, Religion and Science: what are their purposes and Religion and Science: a problem of language? Whilst the units are directed at KS3, they provide insights and background knowledge for anyone interested in science and religious encounters. The units are supported by videos supplied on DVD.

[gatbb.co.uk](http://gatbb.co.uk)

### Godly Play UK

The website introduces resources, which enable children to learn and express their views, reflect and respond to stories and engage with challenging questions in life, such as those associated with death. There are three different genres: parables, sacred stories from the old and new testament and stories related to church liturgy Baptism, the Eucharist and the Circle of the Church Year.

[www.godlyplay.uk](http://www.godlyplay.uk)

### NASA Space Place – NASA Science for Kids

This website provides a range of resources and animations for teaching children about the earth and space. It covers various aspects, such as the earth, sun, solar system, universe, and Science and technology. The tab for the universe explores the question: 'What is the Big Bang?' The website uses child-friendly language and helpful photographs. Children can navigate their way around this resource easily and enrich their conceptual understanding.

[spaceplace.nasa.gov](http://spaceplace.nasa.gov)

## Natural History Museum

The natural history museum has a range of free cross-curricular learning resources for teachers and home-educators to enable 4-11 year-olds to explore the natural world currently and in the time of dinosaurs. There is a range of animations to view, e.g. how fossils are formed. The resources address the big questions about the evolution and extinction of dinosaurs.

[nhm.ac.uk](http://nhm.ac.uk)

## Never Off Topic

Never Off Topic is a website packed with helpful classroom resources produced by the LASAR research team (Learning about Science and Religion) at Canterbury Christ Church University. There are exciting lesson ideas here for Science and RE lessons across the curriculum for Year 6 and above. Topics for Year 6 include 'A history of life on earth', 'evolution', 'The Big Bang and Creation', 'Do we have to choose?' and 'Can a scientist believe in miracles?' The topics bring Science and religion together. There are many animations to support teaching and learning, e.g. Mary Anning, how an ammonite becomes fossilized, the evolution of a horse, and Galileo's story. There are also individual guides for Year 6 teachers and teachers' notes to accompany the activities.

[www.neverofftopic.com](http://www.neverofftopic.com)

## Primary Evolution

This website, produced by LASAR, Canterbury Christ Church University and the Wellcome Trust, provides a selection of lesson plans, videos, animations, posters and events to support the teaching of evolution in primary schools. It has pages directed at pupils as well as teachers. The website provides insights into fossils, adaptation, variation, evolution, religion, and antibiotic-resistant bacteria. There are free CPD workshops available to teachers.

[www.primaryevolution.com](http://www.primaryevolution.com)

## Primary Resources Science Reach Out CPD

Reach Out CPD is a free online resource to help primary school teachers teach the science curriculum. The site, developed by a team of educational and production experts from Imperial College London and Tigtag, provide units on working scientifically, the earth and space and evolution and inheritance. Each unit is divided into four sections: The Big Idea, Big Questions, Core Learning and Practical Ideas. Each unit contains helpful video clips to accompany the teaching of each unit.

[www.reachoutcpd.com](http://www.reachoutcpd.com)

## The Faraday Institute for Science and Religion

The Faraday Institute for Science and Religion aims to improve public understanding of religious beliefs concerning the sciences. A dedicated team develop materials for schools and provide teacher development. There are some thought-provoking videos, links to their current research projects and example lesson plans for teaching evolution on their website.

[www.faraday.cam.ac.uk](http://www.faraday.cam.ac.uk)

## The Stapleford Centre Resources

'Someone Like Sam' is a teaching resource pitched at KS1 and KS2 pupils. The lesson materials are based on four themes: Being loved, identity, relationship and strength. The website introduces 40 Creative Teaching Ideas for RE, written by Margaret Cooling, which focuses on practical strategies for making RE lessons fun and engaging. There are some freely available ideas to download to get you started.

[www.stapleford-centre.org/resources](http://www.stapleford-centre.org/resources)

## SECTION 2: GENERAL TEXTS

**Billingsley, B., Abedin, M., and Chappell K. (2018) *A Teacher's Guide to Science and Religion in the Classroom*. Oxon: Routledge.**

This book provides practical guidance for pre-service and practising teachers to get children thinking about the relationship between Science and religion. It explores key concepts, identifies gaps and common misconceptions in children's knowledge, and offers advice on how to help them form a deeper understanding of both Science and religion. The concepts include Nature of Science; power and limitations of Science; evolution, genes and human improvement; miracles, natural disasters and mystery; and scientists' profiles, including Galileo and Newton. Each chapter contains activities and session plans to help children understand why Science and religion do not necessarily conflict based on research and workshop outcomes. It highlights children's interest in the "Big Questions" that bridge science and religion.

**Dixon, T. (2008) *Science and Religion: A Very Short Introduction*, Oxford: Oxford University Press.**

This pocket-sized book is the perfect way to get ahead in a new subject quickly. Dixon explores the fundamental philosophical questions that underlie the debate and the social, political, and ethical context. Dixon examines landmark historical episodes such as Galileo's trial by the Inquisition in 1633 and the famous argument between 'Darwin's bulldog' Thomas Huxley and Bishop Wilberforce in Oxford in 1860.

**McGrath, A. (2020) *Science and Religion: A New Introduction*, Third Edition, Chichester: Wiley-Blackwell.**

This popular book provides a comprehensive introduction to the major themes and debates associated with science and religion interaction. It incorporates history, philosophy, the natural sciences, and theology. It examines how Science and religion approach central questions and discusses the relationship between the two areas throughout the centuries. The chapters are perfect for readers with minimal knowledge of Science or theology. The book includes sections on Scientism, evolutionary theodicy, the Theory of Relativity, warranted belief in Science and religion, and the influence of Science and religion on human values.



Spencer, N. (2019) *Science and Religion: The Perils of Misperception*, London: Theos.

[www.theosthinktank.co.uk/research/2019/06/18/science-and-religion-the-perils-of-misperception](http://www.theosthinktank.co.uk/research/2019/06/18/science-and-religion-the-perils-of-misperception)

This document is an online report available on the above website. How is the relationship between Science and religion viewed in the UK? Is Young Earth Creationism on the rise? Do religious people think more negatively about Science? If there is a conflict between Science and religion, who perceives it and why? The report used over ten years of polling data to produce a complete picture of the UK's science and religion landscape. It drew on 18 significant studies and looked at public opinion on Science and religion, evolution and creationism, scientists, scientific progress, and its moral implications. It revealed, "pockets of antagonism" (rather than all-out conflict) focused less on God or evolution but the nature and status of human beings.

Bube, R. H. (1995) *Putting it All Together: Seven Patterns for Relating Science and the Christian Faith*, Lanham, MD: University Press of America.

Bube explores possible patterns for relating Science and the Christian faith, giving examples and providing a balanced critique of each. A series of possible patterns are discussed, ranging from the destruction of Christian Theology by Science to complementary insights between Christian Theology and Science.

Barbour, I. G. (2000) *When Science Meets Religion: Enemies, Strangers or Partners*, San Francisco, CA: HarperSanFrancisco.

The book is "the definitive introduction to the relationship between religion and science." It provides the following sections:

- In The Beginning: Why did the Big Bang occur?
- Quantum Physics: A challenge to our assumptions about reality?
- Darwin and Genesis: Is evolution God's Way of creating?
- Human Nature: Are we determined by our genes?
- God And Nature: Can God act in a law-bound world?

Barbour is a nuclear physicist and theologian, winner of the 1999 Templeton Prize for Progress in Religion for his pioneering role in advancing the study of religion and Science. The book introduces the essential issues, ideas, and solutions in the relationship between religion and Science. Barbour explores the fascinating topics that illuminate the critical encounter of the spiritual and quantitative dimensions of life.

Hutchings, D. and McLeish, T. (2017) *Let There Be Science: Why God loves Science, and Science Needs God*. Oxon: England.

Science can be presented as a robotic, detached, unemotional enterprise. Christianity can be dismissed as ancient superstition. In reality, neither is the case. Science is a profoundly human activity, and Christianity is reasonable. Many individuals throughout history have committed to both, enabling our understanding of the world. McLeish and Hutchings use fascinating human stories to illustrate how Science and religion belong together. They explore the big questions about life and the nature of reality. Ultimately, they portray a biblical God who loves Science and a Science that truly needs God.

**Pritchard, M. and Harris, D. (2018) *Philosophy, Science and Religion for Everyone*. Oxon: Routledge.**

This book brings together the truth-seeking disciplines and seeks to understand how they challenge and inform each other. Key topics discussed include:

- Foundational Issues: Why should anyone care about the science-and-religion debate? How do scientific claims relate to the truth? Is evolution compatible with design?
- Faith and Rationality: Can faith ever be rational? Are theism and atheism totally opposed? Is God hidden, or does God simply not exist?
- Faith and Science: What provides a better explanation for the origin of the universe? Science or religion? Faith and physics: can they be reconciled? Does contemporary neuroscience debunk religious belief? Creationism and evolutionary biology - what constitutes Science and what constitutes pseudo-science?
- Practical Implications: Is fundamentalism just a problem for religious people? What are the ethical implications of the science-and-religion debate? Do logic and religion mix?

**Rolston, H. (2007) *Science and Religion: A Critical Survey*, New York: Random House.**

Rolston argues that there are fundamental questions that Science alone cannot answer. These questions are religious. He uses the scientific method of inquiry to distil critical issues from Science. He then integrates them in a study that begins with matter and moves through life, mind, culture, history, and spirit. Incorporating religious and scientific worldviews, he examines two natural sciences: physics and biology. He then extrapolates examples from two human sciences: psychology and sociology. Finally, he moves to the storied universe and world history, raising and addressing religious questions.

**Sweetman, B. (2010) *Science and Religion: An introduction*. London: Continuum.**

Sweetman summarises the history of religion and science's relationship and clearly explains issues of concern for us today. The book covers topics such as the religious, philosophical and moral implications of evolutionary theory, the nature of the human person, evidence for design in the universe, and the place of ethics in both fields. His explanations of religious doctrine and scientific theory are accurate and easy to understand. [Chapter One introduces the relationship between Science and religion. It covers some models for understanding the relationship between Science and religion and considers why we should be interested in the relationship between Science and religion.

[\(99+\) \(PDF\) BOOK CHAPTER: Religion and Science: An Introduction | Dr Brendan Sweetman - Academia.edu](#)

## SECTION 3: EDITED ANTHOLOGIES, COLLECTIONS, COMPANIONS, ENCYCLOPEDIAS AND HANDBOOKS

**Clayton, P., and Simpson, Z. (eds) (2006) *The Oxford Handbook of Religion and Science*, Oxford: Oxford University Press.**

This book is a single-volume introduction to the debate concerning Science and religion. Each chapter defends a central intellectual position. A series of 'pro' and 'con' papers cover current 'hot topics' (such as evolution versus creation, naturalism versus the supernatural). In addition to treatments of methodology and implications for life and practice, the handbook includes sections devoted to the major scientific disciplines and the major world religions.

**Harrison, P. (ed.) (2010) *The Cambridge Companion to Science and Religion*. Cambridge: Cambridge University Press.**

In recent years, the relations between Science and religion have been the object of renewed attention. Developments in physics, biology, and neurosciences have reinvigorated discussions about life's nature and ultimate reality. Simultaneously, the growth of anti-evolutionary and intelligent design movements has led many to the view that Science and religion are necessarily in conflict. This book provides a comprehensive introduction to the relations between Science and religion, with contributions from historians, philosophers, scientists and theologians. It explores the impact of religion on the origins and development of Science, religious reactions to Darwinism, and the link between Science and secularization. It also offers in-depth discussions of contemporary issues, with perspectives from cosmology, evolutionary biology, psychology, and bioethics. The volume contains philosophical reflections on the connections between atheism and Science, the nature of scientific and religious knowledge, and divine action and human freedom.

**Van Huyssteen, J. W. (EIC) (2003) *Encyclopedia of Science and Religion*, Second Edition,**

New York, NY: Macmillan Reference. The Encyclopedia of Science and Religion addresses the interactions, contradictions and tensions between Science and religion, both historically and in contemporary life. The two-volume set examines technologies like in-vitro fertilization, cloning, and continuing neurophysiology developments against the backdrop of deeply-held religious beliefs. The issues studied include the origins of life, the nature of sin, and the philosophy of Science and religion.

## SECTION 4: SELECTED ACADEMIC PAPERS IN THIS AREA

Billingsley, B., Abedin, M. and Nassaji, M. (2020) 'Primary school students' perspectives on questions that bridge science and religion: Findings from a survey study in England', *British Educational Research Journal*, 46(1), pp. 177-204.

DOI: <https://doi.org/10.1002/berj.3574>

Billingsley, B., Nassaji, M., Fraser, S., and Lawson, F. (2018). A Framework for Teaching Epistemic Insight in schools. *Research in Science Education*.

<https://doi.org/10.1007/s11165-018-9788-6> (Open Access).

Hanley, P., Bennett, J. & Ratcliffe, M. (2014) The Inter-Relationship of Science and Religion: A Typology of Engagement, *International Journal of Science Education*, 36(7), pp. 1210-1229.

DOI: 10.1080/09500693.2013.853897

Harris, P.L. and Koenig, M.A.(2006) 'Truth and Testimony: How children learn about Science and Religion', *Child Development*, May/June 77(3), pp. 505-524.

Levesque, P. J. & Guillaume, A. M. (2010) 'Teachers, Evolution, and Religion: No Resolution in Sight', *Review of Religious Research*, 51(4), pp. 349-365.

Mansour, N. (2015) 'Science Teachers' Views and Stereotypes of Religion, Scientists and Scientific Research: A Call for Scientist–Science Teacher Partnerships to Promote Inquiry-Based Learning', *International Journal of Science Education*, 37(11), pp. 1767-1794.

DOI: 10.1080/09500693.2015.1049575

Subedi, B. (2006) 'Preservice Teachers' Beliefs and Practices: Religion and Religious Diversity, *Equity & Excellence in Education*, 39(3), pp. 227-238. DOI: 10.1080/10665680600788495

Van der Zee, T., Hermans, C. and Aarnoutse, A. (2006) 'Primary school students metacognitive beliefs about Religious Education', *Educational Research and Evaluation* 12, (3), June, pp.271–293.

Voas, D. and Crockett, A. (2005) 'Religion in Britain: Neither believing nor belonging', *Sociology*, 39(1), pp. 11-28.





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