



Arguing about God

definitions :: arguments :: faith and science

A multimedia resource for teaching GCSE Religious Studies

© 2011 Focus

ARGUING ABOUT GOD

definitions :: arguments :: faith and science

A multimedia resource for teaching GCSE Religious Studies

TEACHERS' GUIDE

If the application does not start automatically, open the CD in Windows Explorer and double-click on play.bat

Many people have contributed to the making of '**Arguing about God.**' We would particularly like to thank: Richard Blakely, Revd Dr. Rodney Holder FIMA FRAS, Revd Professor John Polkinghorne KBE FRS, Dr. Graham Swinerd Ceng, MRAeS, FRAS, Revd Dr. David Wilkinson FRAS, Peter Williams MA M.Phil, TG Productions, and NASA / Hubble Space Telescope for their part in the video sequences; Helen Gillam for developing the teaching materials, Su Strange for graphic design of the MS Powerpoint ® presentations, Lat Blaylock, editor of 'RE Today' for many helpful suggestions, and the members of Birmingham SACRE's Curriculum Committee for many comments which helped us to improve the usability of the material.

First published in 2011
by Focus Radio
54 The Avenue
Southampton
United Kingdom SO17 1XQ

ISBN-10: 0-9557668-2-6
ISBN-13: 978-0-9557668-2-4

A CIP record for this book is available from the British Library
© 2011 Focus Radio

All rights reserved. No part of this publication may be reproduced in any form or by any means, graphic, electronic or mechanical, including photocopying, recording, taping or information storage and retrieval systems, without the prior permission in writing of the publishers.

Whilst every effort has been made to trace copyright holders and obtain permission, this has not been possible in all cases. Any omissions brought to our attention will be remedied in future editions.

OVERVIEW

'Arguing about God' is a multimedia resource for teaching GCSE Religious Studies. The disc contains resources for four lessons covering:

- Classical arguments for the existence of God
- Contemporary version of the design argument from cosmic fine-tuning
- Counter arguments used by atheists
- Faith and Science

'Arguing about God' delivers relevant parts of the GCSE Religious Studies specifications for AQA, Edexcel and WJEC.

On the disk:

Multimedia presentations for four lessons – an initial double lesson of 100 minutes, two single lessons of 50 minutes, and a final double lesson of 100 minutes. Each lesson includes:

- starter questions and activities to get pupils thinking
- videos featuring leading scientists and theologians
- learning activities (e.g. Think/Pair/Share, class discussions, and written tasks)
- revision activities to drive home the key points

AQA GCSE RELIGIOUS STUDIES SPECIFICATIONS

Religious Studies A offers 14 units in total. A candidate must take any two units for the full course and any 1 unit for the short course. *Religious Studies B* offers 6 units in total. A candidate must take any two units for the full course and any one unit for the short course.

'Arguing about God' links to *Unit 7 of Religious Studies A*, 'Philosophy of Religion.' This unit has six topics, and this scheme of work is relevant to topic 1, 'The Existence of God,' and topic 5, 'The Compatibility of Science and Religion.'

[GCSE Specification Religious Studies A, AQA](#), pp. 21-22

'Arguing about God' also links to *Unit 4 of Religious Studies B*, 'Religious Philosophy and Ultimate Questions.' This unit has six topics, and this scheme of work is relevant to topic 1, 'The Existence of God,' and topic 6, 'Science and Religion.'

[GCSE Specification Religious Studies B, AQA](#), pp. 15-16

EDEXCEL GCSE RELIGIOUS STUDIES SPECIFICATION

The specification includes a total of fifteen units. For the short course a candidate must take any one unit. For the full course a candidate must take any two units.

'Arguing about God' links to Unit 2.1, which looks at the Christian's belief in God including experiences (miracles, the numinous, conversion) as well as the Design argument and the Causation argument, scientific explanations of the origins of the world and Christians response, the problem of evil and suffering and the effect of the media on belief in God.

Edexcel GCSE in Religious Studies (2RS01) and Edexcel GCSE (Short Course) in Religious Studies (3RS01), page 16

WJEC/CBAC GCSE RELIGIOUS STUDIES SPECIFICATION B

The specification includes two units. Unit 1: 'Religion and Life Issues;' Unit 2: 'Religion and Human Experience.'

For the full course, candidates are required to study both units. For the short course, they are required to study one unit.

'Arguing about God' links to Unit 1, 'Religion and Life Issues.'

Topic 3: Looking for Meaning - Issues about God, life and death

Topic 4: Our World - Exploring creation and our place in the world

GCSE Specifications for teaching from 2009 – Religious Studies Specification B (Full and Short Course), pp. 11-12, 18

Title of Lesson	Timing	Cross Curricular Strands	Learning Objective	Resources
Creator God or Accidental Circumstance?	Double lesson 100mins	Literacy Science	To be able to state with explanation the Cosmological ('first cause') Argument for God's existence, and to compare this with the scientific account of universal origins in the 'Big Bang.'	Whiteboard & Projector 'Arguing about God' CD Card sort / washing line pegs Dominos
Creator God or Just Lucky?	Single lesson 50mins	Literacy Science	To be able to state with explanation the basics of the Teleological Argument for God's existence (argument from design), and the counter argument from Natural Selection (appearance of design).	Whiteboard & Projector 'Arguing about God' CD Washing line pegs / Post-its
Creator God or Rare Coincidence?	Single lesson 50mins	Literacy Science	To be able to explain how the complex nature of the Earth itself can be used as an argument for the existence of God.	Whiteboard & Projector 'Arguing about God' CD Sugar paper & Markers or Mini whites boards & markers or Post-its A3 blank paper for mindmaps / spider diagrams
Creator God or the Multiverse theory?	Double lesson 100mins	Literacy Science Maths	To be able to contrast the Multiverse theory with belief in a creator God as an explanation of cosmic fine tuning, and be able to explain how science and faith in a creator God need not be mutually exclusive but can in fact support each other.	Whiteboard & Projector 'Arguing about God' CD Scramble puzzle sets Printed quotes on A4

LESSON 1 PLAN

CREATOR GOD OR ACCIDENTAL CIRCUMSTANCE?

LEARNING OBJECTIVES

1. To correctly use the terms *Atheist, Theist, Agnostic, Cosmological Argument* and *Big Bang*.
 2. To identify key aspects of the Cosmological Argument for God's existence and the scientific 'Big Bang' account of universal origins
 3. To begin to analyse scientific and faith-based ideas about how the Universe began
- L/O: To be able to state with explanation the Cosmological ('first cause') Argument for God's existence, and to compare this with the scientific account of universal origins in the 'Big Bang.'

LEARNING OUTCOMES

SOME (A*-B GCSE)

- Will be able to attain all objectives using self evaluation and detailed explanation
- Will be able to compare and contrast the basic concepts of the Cosmological Argument (first cause argument) for God's existence and the scientific Big Bang theory of how the Universe began
- Will show an understanding that faith and science need not be incompatible

MOST (C-E GCSE)

- Will be able to attain all objectives using self evaluation and expanded description
- Will be able to explain separately without linking the ideas of the Cosmological Argument (first cause argument) for God's existence and the scientific Big Bang theory of how the Universe began
- Will be able to state one viewpoint with detail and personal justification

ALL (E-G GCSE)

- Will be able to explain all keywords and describe the basics of the Cosmological Argument for God's existence and the scientific Big Bang theory of how the Universe began
- Will be able to state their own view

Resources	Keywords/phrases	Cross curricular strands <i>[literacy/numeracy/ICT/specialism/PHSE]</i>
Whiteboard & Projector 'Arguing about God' CD Card sort / washing line pegs Dominos	Atheist, Theist, Agnostic, Cosmology Cosmological Argument First cause Big Bang.	Literacy Science

START

SLIDE 1: (TITLE: Creator God or Accidental Circumstance?)

SLIDE 2: (AIM)

SLIDE 3

Opinion line and justifications:

The starter can be used in two ways. Either:

- Split the room into three sections. One side =1; the middle =5; the other side =10.
- Students stand in the relevant position in the line across the room.
- Pick several to justify their answer.

Or:

- Get the students to draw the line and place a stick person on the line where they would be.
- Again pick several to justify their answer.

Assessment for Learning	Reflecting/Evaluating	/	Problem solving		Student Presentation	
	Demonstrating knowledge/skill		Peer assessment		Written/oral	/
	Questioning	/	Self assessment			

DEVELOP

The lesson will develop with the following tasks / activities:

SLIDE 4

Definitions of Key words: *Atheist, Agnostic, Theist*

First ask the students to explain their own ideas of what these words mean...

SLIDES 5, 6, and 7

...then show the correct definitions.

SLIDE 8

Statement sorting & discussion

This task can be completed in three ways:

- Have the students work in pairs to sort the cards.

Or

- Have two lines hung across the room and these statements enlarged
- In groups (each group given one statement) one at a time come up and peg their statement on the correct line.
- Ask the class if they agree.

Or

- Have the students create a table and write the sentences in the correct section.

SLIDE 9

This slide shows the statements sorted under the correct headings.

SLIDE 10

Think/Pair/Share activity to discuss the question: 'Can faith and science co-exist?'

SLIDE 11

Watch the video segment 'A Very Unlikely Place.' This introduces questions that will be discussed in later segments, and introduces the contributors, who are both scientists and Christian believers.

(**IMPORTANT NOTE:** Depending on the speed of your computer, the video may take a few seconds to start playing.)

After the video has finished, click **ONCE** on the blue surround to move on to the next slide

SLIDE 12

Title: The Cosmological Argument. This is an argument for God's existence.

SLIDE 13

It begins with the statement: 'Everything that begins to exist has a cause.'

SLIDE 14

Is this statement true?

Use the domino demo to show cause and effect visually. Either:

- use an actual domino line set up, and once knocked over you follow the cause back to your hand: muscle movement, your brain impulses – your conception – parents – ancestors etc. - back to the beginning of time.

Or

- use a string of students stood in a row (either pre prime one student or tell them quietly you will gently push them into the next in line) – domino effect: explain as above.

SLIDES 15 - 18

The demonstration illustrates the idea that everything that begins to exist has a cause. The Universe began to exist, therefore the Universe has a cause. This is the *First Cause*, that was not caused by anything else. Theists identify this first cause with God.

This is the Cosmological Argument for God's existence, sometimes also called the 'First Cause' argument.

SLIDES 19 and 20

Use the slides to explain the scientific Big Bang theory.

Explain that some people think the idea of a creator God and the Big Bang can go together (God is the cause of the Big Bang). Others see the Big Bang as an alternative to a creator God. The Big Bang itself is the first cause – there is no need for a God to explain it.

SLIDE 21

Watch the video segment titled ‘Life on a Razor’s Edge.’

(**IMPORTANT NOTE:** Depending on the speed of your computer, the video may take a few seconds to start playing.)

After the video has finished, click **ONCE** on the blue surround to move on to the next slide

SLIDE 22

Intention / accident opinion line

After a discussion of the lesson information use the choice line the same way as in the starter.

See if anyone would change their position on the choice line.

Assessment for Learning	Reflecting/Evaluating	/	Problem solving		Student Presentation	
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	/
	Questioning	/	Self assessment			

CONCLUDE

SLIDE 23

Conclude the lesson by completing the final two tasks as a plenary. Encourage students to share their ideas with the class.

TASK 1:

Describe in one or two sentences each:

- The Cosmological argument (first cause argument) for God’s existence
- The Big Bang theory for how the Universe began
- How the two may co-exist

Use the words: *Fine tuning, Physics and probability, Atheist & Theist.*

TASK 2:

Write down one thing that the DVD has made you think about today, and say why.

END OF LESSON:

Either

- Have two or three students share their comments on the task questions with the class.

or

- Quick fire questions on the keyword definitions. *Theist, Atheist, Agnostic, Cosmological Argument & Big Bang.*

Assessment for Learning	Reflecting/Evaluating	/	Problem solving		Student Presentation	
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	/
	Questioning	/	Self assessment			

LESSON 2 PLAN

CREATOR GOD OR JUST LUCKY?

LEARNING OBJECTIVES

1. To begin to analyse scientific and faith-based ideas about how the Universe began and continues
2. To identify key aspects of the Teleological Argument for God's existence (argument from design) as a faith-based and scientific view
3. To correctly use Paley's Watch analogy to explain the design argument

L/O: To be able to state with explanation the basics of the Teleological Argument for God's existence (argument from design), with its faith-based aspects, and the counter argument from Natural Selection.

LEARNING OUTCOMES

SOME (A*-B GCSE)

- Will be able to attain all objectives using self evaluation and detailed explanation
- Will be able to compare the basic concepts of the Teleological Argument (argument from design) with a naturalistic understanding
- Will show an understanding that faith and science need not be incompatible
- Will be able to use analogy correctly to show deeper understanding

MOST (C-E GCSE)

- Will be able to attain all objectives using self evaluation and expanded description
- Will be able to explain separately without linking the ideas of the argument from design and the appearance of design through Natural Selection
- Will be able to state the idea behind Paley's Watch story

ALL (E-G GCSE)

- Will be able to describe the basics of the argument from design
- Will be able to state Paley's Watch story

Resources	Keywords/phrases	Cross curricular strands <i>[literacy/numeracy/ICT/specialism/PHSE]</i>
Whiteboard & Projector 'Arguing about God' CD Washing line pegs / Post-its	Argument from design Teleological Argument Paley's Watch Natural Selection Random / designed	Literacy Science

START

SLIDE 1: (TITLE: Creator God or Just Lucky?)

SLIDE 2: (AIM)

SLIDE 3

Image interpretation: odd one out, with explanation. The sheep and the goat are natural. The Geep is a hybrid – a genetically created cross between a sheep and a goat. Such a creature is impossible in nature, but has been purposefully designed by scientists.

Assessment for Learning	Reflecting/Evaluating	/	Problem solving		Student Presentation	
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	/
	Questioning	/	Self assessment			

DEVELOP

The lesson will develop with the following tasks/activities:

SLIDE 4

The Teleological argument, or design argument: an argument for God's existence

When some people look at the solar system, the world and everything in it they see a design, a pattern to it.

SLIDE 5

Explanation of the Teleological argument (argument from design) through picture dot examination and class discussion.

The picture appears to be a random pattern of black and white dots. Ask the students if they can make out any images. You will probably get many different ideas about what could possibly be in the picture.

Discuss: what is the difference between something that is random and something that is designed? (Responses might include the idea that something that is designed often has a purpose, it may have a pattern, and that something that is designed needs someone to design it.)

The picture is actually upside down.

SLIDE 6

The picture is now the right up way – does this help? On the 2nd click of the slide a red box will appear around the Dalmatian. Discuss the question: what is the picture trying to say?

SLIDE 7

The Teleological Argument (argument from design) notices things in the natural world that look as if they have been designed for a purpose, and appear to show a pattern. It says that where there is a design, there must be a designer. That designer is God.

SLIDE 8

Paley's watch analogy.

Imagine a person who has never seen a watch before finds one at the beach.

They would see that it has many parts and that these were put together for the purpose of producing motion.

This motion is so well regulated that they are able to tell the time of the day with accuracy. They would see that if there were any small change in the shape, size, or position of the many parts of the watch, there would either be no motion or it would not keep time accurately.

They would conclude that the watch was so well made, with a specific purpose, that it must have a maker.

SLIDE 9

What do you think about Paley's Watch story & the argument from design?

Question: Is the complexity of the world so different?

Think (individually) / Pair (discuss idea with partner) / Share (share ideas with the group).

SLIDE 10

Can the design argument fit with a scientific viewpoint?

Everyone agrees that things in nature **look like** they have been designed.

'Biology is the study of complicated things that give the appearance of having been designed for a purpose.' (Richard Dawkins, 'The Blind Watchmaker.' 1986)

SLIDE 11

Dawkins says that things in nature that appear to be designed have not really been designed at all. They have evolved naturally in a way that looks like they have been designed. This is a result of Natural Selection.

(**Important note:** it is essential in what follows not to say or imply that Natural Selection is a 'chance' or 'random' process. Although the genetic changes that it works on may be random, Dawkins is very careful to say that the process itself is non-random and law-like.)

SLIDE 12

There are small random changes in a plant or animal's genes from one generation to the next. These cause changes in the plant or animal. Some of these changes will make it better equipped to survive. Others will make it worse equipped.

SLIDE 13

Nature 'selects' the changes that make the plant or animal better equipped to survive.

So for example a lion with sharp teeth and claws will be selected by nature over one with blunt teeth and claws.

This can give the appearance that the lion's teeth and claws have been designed, when in fact they have been selected by nature. This is an atheist counter to the design argument.

SLIDE 14

Watch the video segment '**Just Lucky?**'

(**IMPORTANT NOTE:** Depending on the speed of your computer, the video may take a few seconds to start playing.)

After the video has finished, click **ONCE** on the blue surround to move on to the next slide

SLIDE 15

Discuss: Look again at design and the appearance of design through what they have been considering throughout the lesson.

Designer / Natural Selection opinion line.

For this task, either

- Hands up to explain personal positions

Or

- Have the class move to different sides of the room in a straight line, one side being 'Designer,' the other 'Natural Selection,' and in between these those who are unsure, at different levels.

Or

- Post it notes with name written on and placed on the line on the white board

Assessment for Learning	Reflecting/Evaluating	/	Problem solving		Student Presentation	
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	/
	Questioning	/	Self assessment			

CONCLUDE

SLIDE 16

Conclude the lesson by completing the final three tasks as a plenary:

TASK 1:

Describe Paley's Watch design argument in your own words.

Explain the counter argument from Natural Selection.

TASK 2:

Compare the Teleological argument (argument from design) with the Cosmological argument (first cause) from last lesson. Which one do you find more convincing (if either)? .

TASK 3:

Write down one thing that the DVD has made you think about today, and say why.

END OF LESSON:

Either

- Have two or three students share their comments on the task questions with the class.

Or

- Quick fire questions on the keyword definitions: *Paley's Watch*, *Teleological Argument*, *Argument from Design*, *Natural Selection*.

Assessment for Learning	Reflecting/Evaluating	/	Problem solving		Student Presentation	
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	/
	Questioning	/	Self assessment			

LESSON 3 PLAN

CREATOR GOD OR RARE COINCIDENCE?

LEARNING OBJECTIVES

1. To begin to analyse the concept of a 'Goldilocks' Universe – one that is 'just right' for us
2. To identify key characteristics of the Earth that make it just right for life
3. To explain how the concept of fine tuning and the Goldilocks Universe relate to the Teleological Argument for God's existence (argument from design)

L/O: To be able to explain why the complex nature of the Earth and the fine-tuning of the Universe can be used as a design argument for the existence of God.

LEARNING OUTCOMES

SOME (A*- B GCSE)

- Will be able to attain all objectives using self evaluation and detailed explanation
- Will be able to relate the scientific understanding of the fine tuning of the Universe to the Teleological Argument for God's existence (argument from design)
- Will show an understanding that faith and science need not be incompatible but can be used to support each other
- Will be able to interpret quotations correctly to show understanding

MOST (C-E GCSE)

- Will be able to attain all objectives using self evaluation and expanded description
- Will be able to explain separately without linking several different unique qualities of the world that make it suitable for life
- Will be able to state that theists attribute these qualities to God

ALL (E-G GCSE)

- Will be able to describe the basics without linking several different ways that the world is just right for life
- Will be able to state that people who believe in God think it is this way because God created the world

Resources	Keywords/phrases	Cross curricular strands <i>[literacy/numeracy/ICT/specialism/PHSE]</i>
Whiteboard & Projector 'Arguing about God' CD Sugar paper & Markers or Mini whites boards & markers or Post-its A3 blank paper for mindmaps / spider diagrams	Cosmic fine-tuning. Unique Design 'Just right' Goldilocks Universe	Literacy Science

START

SLIDE 1: (TITLE: Creator God or Rare Coincidences?)

SLIDE 2: (AIM)

SLIDE 3

Discuss: what do the images show? (Click once to reveal the captions: rain, temperature, energy source, carbon.) Why are these things important? (Without any of them, life on Earth would be unsustainable.)

Assessment for Learning	Reflecting/Evaluating	/	Problem solving		Student Presentation	
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	/
	Questioning	/	Self assessment			

DEVELOP

The lesson will develop with the following tasks / activities:

SLIDES 4 and 5

Task: under the following headings ('The right ingredients,' 'The right temperatures,' 'The right position') list everything you can think of that makes this planet just right for human life. Be prepared to justify your answers.

This task can be done in several ways.

- Split the class into groups. Give each group a large sheet of sugar paper and a board pen or marker pen. Have the group discuss and write down ideas around the three headings / icons. Then have the group discuss with the class – have a designated voice for the group. Or in groups of four, have one student to be scribe, while the other three each take one section to feedback to the class.

Or

- Have the students write their ideas individually into their books in a similar way to the first option, and then discuss with the class.

Or

- Have the students put at least one idea for each section onto post-it notes, and put these around the respective icons on the board. (**Slide 5** has just the icons for this purpose, or to write the students' ideas on from the discussion.)

SLIDE 6

The right ingredients: discuss the scientific information provided in the light of the students' own ideas from the previous task.

SLIDE 7

The right temperature: continue to discuss the scientific information provided.

SLIDES 8 - 11

The right positioning: continue to discuss the scientific information provided.

Information researched at:

<http://science.howstuffworks.com/environmental/life/evolution/earth-just-right-for-life.htm>

SLIDE 12

Question: If you were a scientist, how could you explain the fact that the Earth is just right for life in so many ways?

Either in groups or as a class discuss the question, or write individual answers in book.

One way to explain it is that there are millions upon millions of planets in the Universe. On some of them, the conditions are bound to be 'just right' for life. We happen to be on one of these. (Of course, we couldn't be on a planet where the conditions weren't right for life.)

SLIDE 13

Watch the video segment 'Right for us?'

(**IMPORTANT NOTE:** Depending on the speed of your computer, the video may take a few seconds to start playing.)

After the video has finished, click **ONCE** on the blue surround to move on to the next slide.

Assessment for Learning	Reflecting/Evaluating	/	Problem solving		Student Presentation	/
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	/
	Questioning	/	Self assessment			

CONCLUDE

The lesson will conclude with –

SLIDE 14

Ed Harrison quotation.

(**Note:** The quotation on screen has been simplified slightly. Harrison's exact words are: 'Here is the cosmological proof of the existence of God – the design argument of Paley – updated and refurbished. The fine-tuning of the Universe provides prima facie evidence of deistic design. Take your choice: blind chance that requires multitudes of universes or design that requires only one.' (Harrison, E, 1985 *Masks of the Universe*, New York, Collier Books, Macmillan p. 252.))

SLIDE 15

Questions:

- What does Harrison mean when he calls fine tuning 'the design argument of Paley – updated'?
- An atheist would say that Natural Selection can explain the appearance of design in nature (e.g. the lion's claws) without the need for a designer. How could cosmic fine-tuning be explained?

SLIDE 16

TASK:

- Explain the phrases 'cosmic fine-tuning' and 'Goldilocks universe (one that is 'just right for us').'
- What does the quotation mean?
- How could cosmic fine-tuning be explained without a designer?

Either

- write a couple of sentences for each question in an essay format

Or

- use the quotation as the centre of a spider diagram / mindmap with the explanations of each part of the task written around it, and with the conclusion written underneath the spider diagram / mindmap.

END OF LESSON:

- Have two or three students share their comments on the task question with the class.

or

- Quick fire questions on the things that make the Earth life sustaining & recap keywords:
Unique, creator, theist, fine-tuning, design argument, Teleological Argument.

Assessment for Learning	Reflecting/Evaluating	/	Problem solving		Student Presentation	
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	/
	Questioning	/	Self assessment			

LESSON 4 PLAN

CREATOR GOD OR MULTIVERSE?

LEARNING OBJECTIVES

1. To begin to analyse the concept of the Multiverse
2. To evaluate the ideas of a creator God vs. the Multiverse as alternative explanations of cosmic fine-tuning.
3. To explain why the fine-tuning of the Universe needs explanation either in terms of a 'scientific' theory such as a multiverse, or in terms of a faith-based belief in a creator God.

L/O: To be able to explain how science and faith in a creator God need not be mutually exclusive. but can support each other. To be able to compare the Multiverse explanation of the fine-tuning of the Universe with the belief in a creator God as an explanation.

LEARNING OUTCOMES

SOME (A*-B GCSE)

- Will be able to attain all objectives using self evaluation and detailed explanation
- Will be able to explain the main points of the Multiverse theory and contrast this with belief in a creator God as a possible explanation of the fine tuning of the Universe
- Will be able to explain how science involves data that can be checked experimentally, and explain the shortcomings of the Multiverse theory in this area
- Will be able to analyse the faith-based understanding of science as a useful tool and as a pointer to a creator God
- Will be able to evaluate how faith and science (while often perceived as incompatible) can provide complementary viewpoints

MOST (C-E GCSE)

- Will be able to attain all objectives using self evaluation and expanded description
- Will be able to describe the main points of the Multiverse theory and the concept of fine tuning of the Universe
- Will be able to state how scientific data may point towards religious ideas
- Will be able to explain how faith and science can be seen as complementary

ALL (E-G GCSE)

- Will be able to describe the basics of the Multiverse theory and the idea of fine tuning of the Universe
- Will be able to state that people who believe in God can see God in everything including science

Resources	Keywords/phrases	Cross curricular strands <i>[literacy/numeracy/ICT/specialism/PHSE]</i>
Whiteboard & Projector 'Arguing about God' CD Scramble puzzle sets ready cut up. Printed quotes on A4	Fine-tuning. Multiverse Faith / Belief Revelation	Literacy Science Maths

START

Note: you will need to prepare several cut-up sets of the scramble puzzle picture (on the CD) before the lesson. These must be printed in colour for the puzzle to work!

SLIDE 1: (TITLE: Creator God or Multiverse?)

SLIDE2: (AIM)

SLIDE3

The starter is a 'simple' 9 square scramble puzzle which has to be completed in a fixed time. It works like a jig-saw puzzle, except that all the pieces have straight edges. The goal is to put the pieces together so that the colours of the beetles all match up (as they do on the uncut version). There are only nine squares, but there are hundreds of ways to combine the individual squares to make up a big square. However, there is only one combination that is exactly right to complete the puzzle.

Note: Keep one uncut printed copy of the puzzle as a master for those students who need to complete it at the end of the task, or for those who do not believe it can be done.

Assessment for Learning	Reflecting/Evaluating	/	Problem solving	/	Student Presentation	
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	
	Questioning	/	Self assessment			

DEVELOP

The lesson will develop with the following tasks / activities:

Note: Before putting up slide 4, ask the class if anyone knows what the Multiverse theory is.

SLIDE 4

The Multiverse is the idea that there are many universes that all exist side by side. We can only experience the Universe we are in. Each universe is slightly different from the next. Among so many universes, there is probably at least one that has just the right conditions for life. This is one possible way to explain cosmic fine-tuning.

SLIDE 5

Task: Maths tasks on slide.

The purpose of this task is to help students grasp the full impact of the very large number which they will be shown on the next slide.

This task can be done

- on individual student white boards, and held up to show the class their understanding

or

- completed in students books

or

- ask for volunteers to write the answer on the main board beside / under the sum.

10^{100} and 10^{250} don't really need to be done - the idea will be clear by then.

Research information:

<http://www.faithinterface.com.au/science-christianity/fine-tuning-the-multiverse-theory>

SLIDE 6

According to one theory, there may be as many 10^{500} different universes in the Multiverse. Ours would be the lucky one which is 'just right' for life.

SLIDES 7, 8 and 9

Interpretation of quotations – on slides.

This task can be done

- As a whole class discussion

Or

- As a think/pair/share

Or

- Split the class into groups. Each group is given one of these quotations on a printed sheet so it is in front of them. They discuss their quotation, then give feedback to the class on what they think it means. The class as a whole draws a conclusion as to what they are all trying to say.

Class discussion of conclusion: All the quotations suggest that science differs from faith /religion as it works on empirical evidence that can be checked by anyone, whereas faith by its very nature cannot be demonstrated.

Quotations found at:

http://www.brainyquote.com/quotes/authors/r/richard_dawkins.html

<http://www.age-of-the->

[sage.org/quotations/quotes/richard_dawkins_god.html+dawkins+quotes+evidence&cd=8&hl=en&ct=clnk&gl=uk](http://www.age-of-the-sage.org/quotations/quotes/richard_dawkins_god.html+dawkins+quotes+evidence&cd=8&hl=en&ct=clnk&gl=uk)

http://www.goodreads.com/quotes/show_tag?name=evidence

http://www.todayinsci.com/QuotationsCategories/E_Cat/Evidence-Quotations.htm

SLIDE 10

Read, or get a student to read, the quotation.

Think/pair/share the question: what do you think?

SLIDE 11

Watch the video segment ‘**God or the Multiverse?**’

(**IMPORTANT NOTE:** Depending on the speed of your computer, the video may take a few seconds to start playing.)

After the video has finished, click **ONCE** on the blue surround to move on to the next slide.

SLIDE 12

TASK:

In books individually, write one sentence to answer each of the questions:

- What is the multiverse theory?
- How does it explain the appearance of design?
- What is its limitation as a scientific argument against the existence of God?

SLIDE 13

Over the last few lessons we have looked at how science alongside faith can create a deeper awareness or understanding of the existence of God.

The deeper we delve into scientific discoveries the more we can develop understanding of a creator God.

Many would say the more the Universe's mysteries are uncovered the greater revelation of a divine designer are shown.

SLIDE 14

Ask class questions: write down definitions.

SLIDE 15

Watch the video segment 'A deeper story?'

(**IMPORTANT NOTE:** Depending on the speed of your computer, the video may take a few seconds to start playing.)

After the video has finished, click **ONCE** on the blue surround to move on to the next slide.

Assessment for Learning	Reflecting/Evaluating	/	Problem solving	/	Student Presentation	/
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	/
	Questioning	/	Self assessment			

CONCLUDE

The lesson will conclude with:

SLIDE 16

Think/Pair/Share – Einstein’s quotation & Class discussion.

Possible points to discuss:

- Science tells you how things work. Religion tells you why they work.
- Science is limited – for example, it cannot tell you whether something is right or wrong.
- It is important to think critically about what you believe and what you do not believe.

END OF LESSON:

Quick fire questions on the key words and key ideas of the whole unit: *Theist, Atheist, Agnostic, Cosmological Argument (first cause), Teleological Argument (argument from design), Paley’s Watch, Natural Selection, Big Bang, fine tuning, Goldilocks Universe, Revelation, Multiverse, Creator, faith, science.*

Assessment for Learning	Reflecting/Evaluating	/	Problem solving		Student Presentation	
	Demonstrating knowledge/skill	/	Peer assessment		Written/oral	/
	Questioning	/	Self assessment			