

UPPER KEY STAGE 2/UNIT 2B.2

CREATION/FALL

CREATION AND SCIENCE:
CONFLICTING OR
COMPLEMENTARY?

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★ OUTCOMES

BY THE END OF THIS UNIT, PUPILS ARE EXPECTED TO BE ABLE TO:

-  Outline the importance of Creation on the timeline of the 'big story' of the Bible.
-  Identify what type of text some Christians say Genesis 1 is, and its purpose.
-  Taking account of the context, suggest what Genesis 1 might mean, and compare their ideas with ways in which Christians interpret it, showing awareness of different interpretations.
-  Make clear connections between Genesis 1 and Christian belief about God as Creator.
-  Show understanding of why many Christians find science and faith go together.
-  Identify key ideas arising from their study of Genesis 1 and comment on how far these are helpful or inspiring, justifying their responses.
-  Weigh up how far the Genesis 1 creation narrative is in conflict, or is complementary, with a scientific account.

KNOWLEDGE BUILDING BLOCKS

PUPILS WILL KNOW THAT:

- There is much debate and some controversy around the relationship between the accounts of creation in Genesis and contemporary scientific accounts.
- These debates and controversies relate to the purpose and interpretation of the texts. For example, does reading Genesis as a poetic account conflict with scientific accounts?
- There are many scientists throughout history and now who are Christians.
- The discoveries of science make Christians wonder even more about the power and majesty of the Creator.

NOTE: Teachers should read the Essential Information pages before teaching this unit.

➤ YOU MIGHT LIKE TO START WITH...

Briefly revise work on genre with your pupils. Give them a range of text types: for example, newspaper report, letter/email, children's fiction picture book, poem, manual for new bit of technical equipment, a prayer, a shopping list and so on. Get pupils to match the text type to the source (who might have written it – provide the list: reporter, parent to child, children's author and so on) and then give them the various audiences intended for the writing; for example, someone interested in current events, a son/daughter or friend, young child and so on. Talk about how they identified genres, and matched them to writer and audience – which clues did they look for? If you mix some up, can they say why the mixed-up versions are incorrect and why?

Through the process, identify with the class that writers have a purpose in writing.

MAKING SENSE OF THE TEXT

- Read Genesis 1:1–2:3 to your class. Use an appropriate translation (see Resources for suggestions). Choose some suitable music (without words) to accompany this, and get pupils to draw the events as they occur, or just the impression they gain from the text, to help them listen carefully. (Afterwards you might talk about what is suitable music and why – which features of the text does it reflect? What about the atmosphere?) Ask pupils to sum up the key message of the text, writing seven key words onto their sketches and a brief explanation of their ideas on the back. What does this story mean? How does it make them feel? Were there any surprising, interesting or puzzling moments?
- Suggest to pupils that this text is a detective story or a newspaper report. Ask them to find evidence for or against this. Ask pupils to suggest what type/genre of writing Genesis 1 is and how they know – what evidence is there? Remember that it is at least 2,500 years old: think about what life was like at the time, and whether that makes a difference. [Note that pupils need to consider both the historical context of when the text was written as well as the literary context – the disputed nature of the genre.]
- Have a look at the translation 'The Message' on Resource Sheet 1. This is set out as a poem. Are there any clues in the text that this is a poem? Are there repeated phrases? What do they suggest is important? Make the point that people (including Christians) disagree about the genre and purpose of Genesis, and that their views have implications for addressing the unit's key question.
- Introduce pupils to a scientific account of cosmology (the beginning of the universe) and of evolution (the development of living beings) (see Resource Sheet 2 for a clear – but not easy! – account. Read this aloud to pupils – some will love the technical complexity of the language!). Remind them of what they have learned in Science (see Resources for examples). Give them three minutes to draw a simple diagram to explain either cosmology or evolution, and, in pairs, explain their drawings to each other. Check for accurate explanations!
- Some people think that Genesis 1 cannot be true because the scientific account contradicts it, but that depends how you interpret Genesis. Use Resource Sheet 3 to explore these views and show their awareness of different interpretations.
- Ask pupils to come up with as many questions as they can about the Genesis text and about the beginnings of the universe and life. Get pupils to sort their questions: are some better answered by science and some by Genesis? (For example: Why doesn't Genesis mention dinosaurs? Why is the universe here? Does my life have a meaning?)



MAKING SENSE OF THE TEXT

- Return to the starter task and the idea of purpose of text. Ask pupils to identify what they think the genre of the Genesis creation text may be, and why it was written. Offer alternatives to help them express ideas, such as: Was this story written for a science textbook or for a service to worship God? Was this story written to explain to believers who we are or who God is?

Was this story written to explain to believers why the world is beautiful or that God is good? (These do not necessarily require either/or responses.)

- Look at the unit key question: ask pupils to come up with some reasons why some people might say Creation and science are in conflict or complementary.



UNDERSTANDING THE IMPACT

- Recall previous learning that Christians celebrate God as Creator through harvest, but also in art and music. Have a look at some artistic responses to God and Creation. You might try the *Picturing Christianity* pack that came with these resources, or have a look at the Creation stained glass in the Rondo Chapel (see Resources). You could listen and read the popular hymn 'O Lord my God, when I in awesome wonder, consider all the works thy hand hath made', or even the children's song, 'Who is the king of the jungle?' www.youtube.com/watch?v=DJwUvjVq9k4
- Pupils need to know that there are many Christians who are scientists. Watch the interviews with Dr Jennifer Wiseman, astrophysicist (see Resources). Which questions would pupils want to ask her? How do they think she interprets Genesis and why? There

are extensive video clip interviews available from the Faraday Institute (see Resources) – pupils could prepare questions as for a visitor, and see if the interviews answer them.

- Note also that the Anglican and Roman Catholic Churches (among others) have accepted evolution – see Resource Sheet 4 to explore this further.
- Get pupils to find out about Christians who are scientists, or who are interested in science. They could be teachers, other staff or parents, a local vicar, vet, doctor or dentist. Find out how these Christians make sense of believing in a Creator God and also doing science. How do they read Genesis 1? Support pupils to ask questions to such people about faith and science: are they compatible or in conflict?



MAKING CONNECTIONS

- Set a homework for pupils to gaze up at the night sky and record their feelings and sensations. Share their responses in class. How often do pupils stop and wonder at how amazing the world is? Ask them to collect images that make them marvel. Look at them together – consider what difference it would make to how people treat the Earth if we all reflected on it like this more regularly. Ask pupils if they can make a connection between this experience and how reading Genesis 1 might help to inspire Christians to care for the Earth and to worship God.
- Ask pupils to identify the main ideas they have learned about Christian beliefs about God as Creator. Ask them to summarise the key points. Use Resource Sheet 5 to help with this.
- Write this statement on the board: '**Genesis explores why the universe and life exists. Science explores how the universe works the way it does.**' Discuss how far pupils agree or disagree, and why. Science is really important for lots of reasons (pupils can come up with some – technology, medicine, construction and so on). Consider if there are questions that science cannot answer; for example: How should we live? Does my mum love me?

What is my purpose in life? What is more important, truth or freedom? Who is better, Taylor Swift or One Direction? What is right and wrong? Why should I help someone who is in need? Is there life after death? Which questions do pupils have that *can* be answered by science, and which cannot? (This does not mean that religion can answer them completely either – but it can offer a way of thinking and responding.) Present a cardboard box with two slots cut into it as a 'Question Machine': one slot labelled 'science' and one slot labelled 'religion'. Post their questions into the appropriate slots, explaining why.

- Look at the unit question: **Creation and science: conflicting or complementary?** Open the Question Machine and look at the questions. Sort them on a large Venn diagram – science/religion – with an overlap. Get pupils to express their understanding in two ways:

- a) with a short written answer to the key question, with explanation, evidence and examples;
- b) a creative response, expressing their own views about the universe, Creation, a Creator, science, cosmology, evolution and so on.

DIGGING DEEPER

★ OUTCOMES

BY THE END OF THIS UNIT, PUPILS ARE EXPECTED TO BE ABLE TO:

-  Identify the type of text that Psalm 8 is, and its purpose.
-  Explain what Psalm 8 has to say about the idea of God as Creator and the place of humans in Creation.
-  Make clear connections between Psalm 8 and some ways Christians respond to God as Creator.
-  Show understanding of why some Christians find science and faith compatible.
-  Respond to the idea that humans have great responsibility for the Earth.
-  Weigh up how well humans are responding to this responsibility, taking into account religious and non-religious viewpoints.

KNOWLEDGE BUILDING BLOCKS

PUPILS WILL KNOW THAT:

- There are many scientists through history and now who are Christians.
- The discoveries of science make Christians wonder even more about the power and majesty of the Creator.

EXTENSION
(FROM KS3 BUILDING BLOCKS):

- Creation reveals something about the nature of God – for example, power, creativity, concern for life – and reminds humans of their place as dependent upon the Creator.

NOTE: Teachers should read the Essential Information pages before teaching this unit.

CREATION/FALL

CREATION AND SCIENCE: CONFLICTING OR COMPLEMENTARY?

YOU MIGHT LIKE TO START WITH...

Find some amazing images of the heavens and the earth, humans and animals. (For example, www.spacetelescope.org, <http://bit.ly/1oFCCr1>)

Distribute some images and ask pupils in groups of five to use their senses imaginatively as they look at their image. Get them to finish these sentence starters:

Set 1: I see..., I hear..., I smell..., I feel..., I taste..., I wonder;
Set 2: I notice..., I want to say..., I imagine..., It reminds me of...,
It's like..., It makes me think... and so on.

Then weave these sentences together, alternating between sets 1 and 2, to form a poem (I see..., I notice..., I hear..., I want to say...)
(See Resource Sheet 6)

Share the poems. How do they feel about our amazing universe?

MAKING SENSE OF THE TEXT

- First read **Psalm 8** to the class. The Psalms are meant to be sung, so you could play a piece of music in the background as you read. Psalm 8 is about the greatness of God, and the privileged role given to humans by God, so choose a stately and uplifting piece. What is the link between the starter activity and this? This is the Psalmist's response to Creation in the form of a poem/prayer!
- Then give groups a copy of Resource Sheet 7 containing extracts from Psalm 8. Ask pupils to identify who the blue boxes describe and who the white boxes describe (answer: blue = God; white = humans).
- What does the psalm tell the reader about God and what does it tell the reader about humans? Offer some words on the board to help describe God and humans: scary, powerful, great, in charge, and so on. Use words from the text, such as 'majestic' and 'rulers'. Write these words around the corresponding blue and white boxes on Resource Sheet 7.
- Talk about how this is a psalm – a prayer used in worship. Ask pupils what it might make worshippers think and feel about God, the world, themselves and other creatures. Collect their suggestions. How does it make pupils themselves think and feel about these things? Compare pupil responses with the perspectives they have suggested for Christians (and Jewish people).
- Focus on the description 'a little lower than the angels'. Ask pupils to think about what this might mean and where it seems to place humans. Look at the words used to describe humans. What does Psalm 8 say about humanity's status on planet Earth? Identify the notion that humans have control over the planet, derived from their place as being in the 'image of God' (Genesis 1:28).
- Divide the six extracts among the class, give groups the task of illustrating each extract. Groups could draw elements of the text, or use some of the images from the starter activity, and should communicate the overall meaning of the text.
- Look at all groups' illustrations, or display together on a central board. Ask the class to identify what this psalm tells Christians about God and humans. Reflect on how it might relate to questions of religion and science.



UNDERSTANDING THE IMPACT

- Ask pupils to describe how they think Christians might behave in the light of the ideas expressed in Psalm 8. Imagine someone was looking for evidence that Psalm 8 was true. What kinds of actions might they expect to find among Christians? List the evidence pupils would expect. For example, some might worship God, or become scientists to explore creation more, or artists to express God's creativity in their art, or farmers to care for the planet, or architects who create places of worship, or therapists to care for humans who are suffering from depression...
- Divide this list among your class and get them to produce a short case study (a one-page leaflet or two PowerPoint slides) to show how Christians worship their Creator, look after Creation and other people; and where science fits into their work. For example:
- *Christian scientists* (see Core Learning section): Note the organisations *Christians in Science* and *Christians in Engineering*: belief in God is no barrier to their work in science. As an extra, how about Steve Roels' poem, prompted as he cleaned some fossils: <http://godandnature.asa3.org/poem-the-new-plant-and-animal-kingdoms-by-steve-roels.html> There are some tricky words but worth a look for your most able! If any of them are obsessed with space, they might like to compare Psalm 8 with this *Scientist's Psalm* <http://godandnature.asa3.org/poem-scientists-psalm.html>
- *Christian artists*: how about this regular Christian music festival? www.creationfest.org.uk/default.asp or this annual festival www.greenbelt.org.uk, or the gallery of www.christianartists.org.uk?
- *Christian farmers*: what kinds of things do the Farming Community Network do? www.fcn.org.uk/
- *Christian architects*: Find out about the building and design of some Christian cathedrals: how do they put the ideas of Psalm 8 into action? (Link with Unit 2b.1 and the work on Coventry Cathedral).



MAKING CONNECTIONS

- Return to the phrase from Psalm 8 about humans being 'a little lower than the angels'. This suggests that humans have a very high position and great authority in God's creation – the idea of 'stewardship' explored in 2a.1 Creation unit. Some people argue that humans have misused this authority by treating the Earth badly. Briefly ask pupils what evidence they know of to support this view (deforestation, greenhouse gases leading to climate change, fossil fuels, litter, waste and so on). Ask pupils to weigh up how well humans have taken care of the world.
- Consider any implications for today's world of these passages. Imagine that there is a God and that God gives humans a clear message that the Creator is going to come to Earth in a year's time to inspect what humans have done as stewards or caretakers of the world. What might people do to prepare? Christians will want to show that they have taken their responsibility of being 'a little lower than the angels' seriously. For the many people who do not believe in God, what might they do? What argument can pupils offer for why all humans should care for the Earth, without God? What do pupils think their own responsibility is? Make it personal – how well do pupils care for the world? Do they only buy local produce? Do they re-use, recycle – or get the latest mobiles and tablets, with all those rare Earth metals from China? Reflect on whether or not it is easier to judge others than to change one's own behaviour.
- Pupils might express their response to this text by writing their own version of the psalm – whether secular, atheist, agnostic, Muslim, Hindu, Jewish, Sikh...
- Reflect on how the biblical idea of God as Creator and humans as God's representatives relates to the question: 'Creation and science: conflicting or complementary?' Pupils should be able to offer a selection of responses on both sides, referring to Genesis and Psalm 8 and diverse Christian views, as well as atheist and agnostic responses.

SELECT AND WEAVE TOGETHER ACTIVITIES TO ACHIEVE THE OUTCOMES

MAKE SENSE OF THE TEXT
UNDERSTAND THE IMPACT
MAKE CONNECTIONS



OUTCOMES

BACKGROUND FOR TEACHERS

We revisit the story of Creation from Genesis 1. (Have a look at Units 1.2 and 2a.1 and read their Essential Information too.)

Here we address what the texts say about God and human nature, and begin to think about the purpose of the Genesis Creation text (and Psalm 8). Pupils may ask whether or not the Genesis account is 'true', reflecting a common view that religious accounts of the universe's origins are in conflict with scientific accounts (whether cosmological accounts of the origins of the universe, such as the 'big bang', or the biological account of the origins and development of life, evolution).

The controversy depends upon how the Genesis account is interpreted. Some Christians do believe that the text is literally true – the earth is only a few thousand years old, God created it in six days of 24 hours. This view holds that scientific accounts of the big bang and of evolution must be incorrect, because you cannot hold both competing views.

This is not the only way Christians interpret the text, however. Many reject the idea that the purpose of the text is to give a scientific description at all. Some see the genre as poetic, requiring different methods of interpretation. Some see it as communicating a message about the nature of God the Creator rather than the mechanism of creation. They see it as a picture of a glorious Creator and wonderful creation, perhaps written partly to persuade other ancient nations to abandon their beliefs in many gods, but now seen as something to inspire worship and awe at God and the place of humanity within creation.

Rather than seeing scientific accounts and Genesis as being in conflict, there are many Christians who see them as complementary. One simple explanation offered by many Christians is that science addresses *how* questions about the universe, its origins and mechanisms, whereas religion – in this case, Christian belief in a Creator – addresses *why* questions: why is there a universe at all? Why do humans matter?

COMMENTARY ON THE TEXT AND ITS MEANING(S) GENESIS 1:1–2:3

There are differences among Christians about how to read Genesis chapters 1–11. One view is that Genesis 1 is a historical account, true in all literal detail. Some with this view believe that scientific explanations must be wrong, and the universe is actually only around 10,000 years old (sometimes called 'Young Earth Creationism'). Close to this is the idea that the Genesis 1 account connects with history but not literally: Genesis 1 can be stretched to fit a kind of scientific timeline – a 'day' representing a much longer period of time, allowing for some harmonisation of the text with the scientific accounts of cosmology and evolution.

At the other end of the spectrum, some Christians see the early chapters of Genesis texts as human attempts to explain the way the world is, with no literal or historical significance, but rather as mythical accounts with some explanatory value about what it means to be human.

Many Christians are somewhere in the middle. They might argue that Genesis chapters 1–11 speak truths about humanity: as created and dependent, as imperfect but full of potential, and in an

ongoing relationship with a Creator God. They don't look to the text of Genesis 1 to answer questions it cannot – for example, about dinosaurs – when the writers/editors could have known nothing of such creatures. Instead they recognise a stylised, poetic form and structure and so look to ask different kinds of questions about its *effect*: How does this text make me feel about God and Creation? How should I respond to this God? Some Christians go on to ask questions about its *meaning*: how is this text structured? What can we understand from its form and imagery? What does it tell us about God, humans and our place in the natural world? How should humans live? How does this help us to make sense of the rest of the Bible?

Evidence of a poetic structure includes the repeated use of phrases ('And God said... It was good...') and words (God, Earth, good and so on); balance (for example, how days 1–3 give the world form, and days 4–6 fill the spaces made in days 1–3). This kind of poetic structure offers a reason for there being days and plants (day 3) occurring before the sun (day 4).

COSMOLOGY AND EVOLUTION: A SCIENTIFIC ACCOUNT

Cosmology includes the study of the origins of the universe – the ‘big bang’ theory is the dominant current model. The scientific approach allows for new discoveries to improve or even replace models, as our understanding of the universe increases.

Evolution is the current (and well-accepted) model of how life developed from simple origins, based on certain features:

1. random genetic change (occurring mainly through mutation, sometimes through random genetic drift)
2. natural selection (in competition for scarce resources, those species best adapted to their environment will survive)
3. self-replication (genetic structures are passed on to offspring; genetic structures that provide competitive advantages survive to be passed on).

Pupils will be exploring the theory of evolution in Science.

NOTE: It is not legal to present ‘Young Earth Creationism’ as a scientific theory within Science lessons.

It is appropriate to discuss it in RE as a view held by some Christians who interpret Genesis 1 literally and hold that God’s Word supersedes anything science might teach.

WHAT DOES THIS STORY SAY ABOUT GOD, AND ABOUT HOW PEOPLE SHOULD LIVE?

Pupils need to know that there are many Christians who are scientists, in the fields of cosmology, biology and other disciplines, and find no contradiction between their faith and their science. They see the God of Genesis as giving humans the freedom to explore creation and humanity’s place within it.

Don’t forget that for Christians this Creation account is an important part of the ‘big story’ of the Bible – that it sets up the context in which human life exists, as part of an extraordinary Creation and in relationship with (and in the image of) an extraordinary Creator God. This suffuses the universe and life with goodness and with purpose, as far as Christians are concerned, and also sets up the reason why God is concerned to bring healing and salvation to Creation through Jesus.

RESOURCES

Teachers should read the full text in an up-to-date translation (for example, *New Century Version* or *New International Version UK*). Search online on the Bible Gateway, which will give lots of translations. www.biblegateway.com/

The Message translation gives a contemporary rendition, conveying the spirit of the original text with modern idioms. The *International Children’s Bible* is a good text to use with pupils.

Wikipedia has an exhaustive list of scientists who were or are Christians: https://en.wikipedia.org/wiki/List_of_Christian_thinkers_in_science

Faraday Schools Project includes lots of resources, including short video explanations: www.faradayschools.com/library/video-gallery/

Interview clips with scientists who are also Christians: a range of topics www.testoffaith.com/resources/subCategories.aspx?sub=true&id=13

Jennifer Wiseman is a good example: www.testoffaith.com/resources/resources.aspx?resource=true&catid=13&id=156 Start with her personal story clips 1 & 2 <http://bit.ly/1lv1o1G>

She also talks about *how* and *why* questions here: www.faradayschools.com/primary/different-types-of-explanation/

Prof Denis Alexander talks about interpreting Genesis 1: www.testoffaith.com/resources/resource.aspx?id=510

ARTWORK

Some artwork from Genesis 1: www.textweek.com/art/creation.htm

Jewish artwork: www.israelbiblemuseum.com/virtual/genesis/creation_n.htm

Genesis window in Rondo Chapel, Tanzania: www.minchchurch.org.uk/index.php/church-groups/masasi/1018-the-rondo-chapel; Images of the stained glass in the Rondo Chapel: www.minchchurch.org.uk/index.php/rondo-stained-glass

Picturing Christianity, a pack of 24 images and activities linked to the core concepts of this project, by Lat Blaylock, available from RE Today Services.

For more confidence in dealing with some of these issues, try the leaflets produced by Christians in Science www.cis.org.uk/resources/thinking/

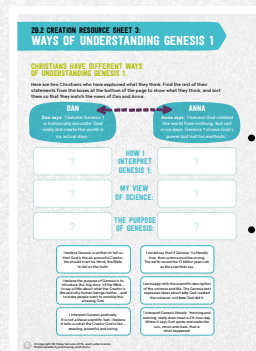
DOWNLOADABLE RESOURCES AVAILABLE AT: WWW.UNDERSTANDINGCHRISTIANITY.ORG.UK



GENESIS CHAPTER 1



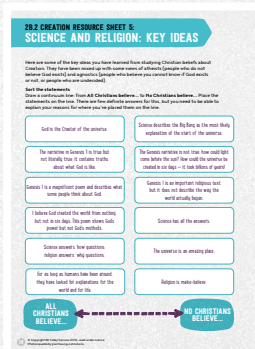
COSMOLOGY AND EVOLUTION



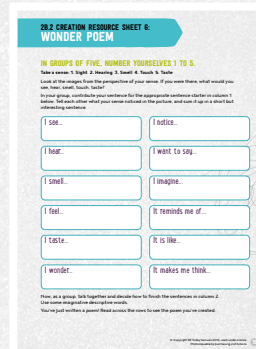
WAYS OF UNDERSTANDING GENESIS 1



CHRISTIAN VIEWS ON RELIGION AND SCIENCE



SCIENCE AND RELIGION: KEY IDEAS



WONDER POEM



PSALM 8