Are humans unique?

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Unit 11: Humans and the Rest of Creation

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Unit Overview

Unit 11: Humans and the Rest of Creation examines the scientific evidence that humans share ancestry with other creatures on earth and invites students to consider humanity’s unique place in creation as bearers of God’s image.

This unit features:

- A video introduction to geneticist Praveen Sethupathy.
- A devotional Bible study on the virtue of gratitude.
- A discussion of what it means to be created in God’s image.
- A reflection on what makes Homo sapiens a uniquely unique species.
- A study of hominin fossils to learn more about human origins.
- An exploration of the genetic evidence for human evolution with a focus on endogenous retroviruses and chromosome 2.
- An examination of questions Christians ask when interpreting the accounts of Adam and Eve in the Bible.
- A consideration of our unique calling as part of God’s majestic creation.
Learning Outcomes

What will students know or be able to do after this unit?

- Identify the positive effects of gratitude and express gratitude for humanity’s special place in creation.
- Describe three interpretations of the **doctrine** of the **image of God**.
- Articulate why biologists classify **humans** as animals, specifically primates.
- Summarize why appealing to biology alone cannot fully address questions about human uniqueness.
- Evaluate the fossil evidence for **human evolution**.
- Explain how **endogenous retroviruses (ERVs)** and chromosome 2 provide genetic evidence that humans share a common ancestor with chimpanzees.
- Identify questions Christians ask about Adam and Eve when reconciling human evolution and the Bible.
- Evaluate four interpretations of Adam and Eve for their agreement with theological commitments and scientific knowledge.

How to Use This Unit

Please see the **User Introduction and Overview** ([biologos.link/user-intro](biologos.link/user-intro)) for important information and links, such as the difference between the five module types (Meet, Grow, Experience, Engage, and Integrate); our terms of use (how documents may be modified and distributed); and advice for communicating with parents or others in your community about potentially controversial topics.

This document contains lesson plans for the entire unit. Other files, such as student handouts, images for the Grow module, teacher instructions for specific activities, answer keys, and slide presentations, are accessible via links within this document.

Teacher’s Notes and sample answers are formatted with italics.

Scope and Sequence

This unit presents the evidence for human evolution and ways Christians reconcile this evidence with the belief that humanity uniquely bears God’s image. After completing **Unit 11: Humans and the Rest of Creation**, you can continue with other units ([biologos.link/units-list](biologos.link/units-list)) that pair well with your science or Bible course ([biologos.link/course-pairing](biologos.link/course-pairing)). The modular design gives you flexibility to pick and choose the activities that best suit your goals, time constraints, and students’ interests.
This unit assumes students are familiar with the methods scientists and theologians use to arrive at consensus about science and theology, a topic that is explored in depth in Unit 2: Ways of Knowing. Principles for interpreting Scripture are further explored in Unit 8: Bible Interpretation and Science. This unit presents further evidence for evolution and an ancient earth and builds on Unit 9: Evolution and God’s Creation and Unit 10: The Fossil Record and Faith.

For an introduction to questions at the intersection of faith and science, see Unit 1: Faith and Science Foundations. To explore how science can be a way to serve God, see Unit 3: Science as a Christian Vocation. To explore questions that surround the complexity and value of life, see Unit 4: Cells and Design, Unit 5: Genetic Diversity and Human Dignity, Unit 6: DNA Technologies and Ethics, and Unit 7: Fearfully and Wonderfully Made. God’s provision for creation is explored in Unit 12: Seeing God in Creation, and God’s calling for humans to participate in creation care is presented in Unit 13: Caring for People and the Planet, Unit 14: Climate Change and Our Commission, and Unit 15: Biodiversity and Conservation.

Pedagogy of Hospitality

Integrate presumes acceptance of, or directly teaches, the scientific consensus on some matters of controversy within the Christian community: namely, modern cosmology, the age of the earth, evolution, and anthropogenic climate change. We as authors recognize this diversity of viewpoints within the Christian community and emphasize that our goal is education, not indoctrination. As such, we include opportunities to explore various Christian perspectives within the Integrate units. Reflection assignments and discussion questions are intentionally open-ended, without an expectation that students adopt any one “correct” perspective. We also believe practicing gracious dialogue is more important than winning an argument. For this reason the curriculum includes opportunities for respectful engagement with others who think differently. For tips on how to create a welcoming environment in your community, see biology professor Kerry Fulcher’s article A Pedagogy of Hospitality (biologos.link/hospitality).

Corequisite Science

While Integrate is flexible and may be used as a standalone resource for enrichment, it is designed to supplement, not replace, science instruction. Students will be prepared to engage with the material in this unit assuming concurrent or previous study of evolution and genetics.

NGSS Alignment

The Next Generation Science Standards (NGSS; biologos.link/ngss) are research-based, cutting-edge K-12 science standards. They set expectations for what students should know and be able to do. While not an NGSS curriculum, Integrate has many points of alignment with NGSS. If you refer to NGSS in your lesson planning, please see the NGSS Alignment for Integrate (biologos.link/ngss-alignment).
Vocabulary

The following terms and concepts are used in this unit or in the additional resources. Definitions and explanations are found in the Unit Glossary at the end of the unit. Many additional terms are included in the main Integrate Glossary (biologos.link/glossary).

- anatomically modern human
- archetypal Adam and Eve
- biblical literalism
- common descent
- doctrine
- dominion (over creation)
- endogenous retrovirus (ERV)
- evolution
- evolutionary creation (EC)
- fall (of humanity)
- federal headship
- fossil record
- gene
- genetic bottleneck
- genome
- historical Adam and Eve
- hominid
- hominin
- homologous structures
- human
- human evolution
- image of God
- intermediate fossil
- kinds (biblical kinds)
- macroevolution
- microevolution
- myth
- mythological Adam and Eve
- natural selection
- nested hierarchies
- original sin
- paleoanthropology
- phylogenetic tree
- phylogenetics
- population genetics
- pseudogenes
- second Adam
- sole progenitors
- special creation
- stewardship (of creation)
- trait
- transitional fossil
- vestigial structure
- vocation
Authors’ Note

This unit is about human evolution and how this exciting area of science can be reconciled with the Bible’s teaching on human origins. We start with the foundational belief that humans are special. Of all God’s creatures, the Bible says only of humans that we are made in God’s image. This fact should fill us with awe, wonder, humility, and gratitude. At the same time, science has revealed that our species, *Homo sapiens*, bears the marks of an evolutionary history—a history that links us through common ancestry to all other creatures on earth. This fact should also fill us with awe, wonder, humility, and gratitude!

These two truths—that we were lovingly and intentionally created by God, and that we share a common ancestor with non-human life forms—may seem incompatible to many people. Yet we, and thousands of other Christian scientists and scholars, believe it is possible to take Scripture seriously and the science of human evolution seriously. Not only is it possible, but it helps us better understand who God is, who we are, and what our roles are as God’s image bearers.

In this unit, students will encounter anatomical, fossil, and genetic evidence for the common ancestry of humans with other organisms. They will confront the reality that our distant ancestors were non-human animals who over many generations became anatomically and behaviorally fully human. This may be deeply unsettling to some students and will require pastoral sensitivity on your part. Take time to allow students to share what they are thinking and feeling, and assure them that your goal is not to convince them to accept evolution, but rather to help them understand why some Christians do accept it. This approach is supported by science education research. See, for example, Christy Hemphill’s BioLogos article *Five Essential Practices for “Culturally Competent” Biology Instructors* (biologos.link/5-practices) and April Maskiewicz Cordero’s CACE article *Tips for Teaching Controversial Science Content* (biologos.link/teaching-tips).

While the scientific evidence for the evolutionary transition from non-human to human is undeniably strong, it is a matter of considerable debate as to when in evolutionary history we “got the image of God” or “became truly human” or “became distinct from non-human animals.” These questions have a biological dimension as well as a spiritual one. When looking at biology, people debate whether humans are different from other animals in kind or in degree. We are not clearly distinct from other organisms when it comes to our physical makeup (e.g., DNA, cells, anatomy). And many behaviors we once thought were unique to humans have now been observed in other animal species (e.g., making tools, showing empathy, using trickery, cooperating). This leads some Christians in science to conclude that the main difference between humans and other animals is the spiritual role we have been given as God’s image bearers. Others argue that our extraordinary capacity for language and cooperation has brought the human species to a whole new level of being—that we really are a different kind of organism.

Regarding the question of when in evolutionary history humans became image bearers, some Christians believe spiritual capacities and the image of God were imparted gradually to a whole population. Others believe God first made himself known to just two individuals. Students will hear from several interpreters who all agree that being made in the image of God is not dependent on the first humans being specially created from dust and a rib.

Of course, all of these questions depend not only on what we mean by the image of God, but also on how we are using the word “human.” The scientific literature tends to include all of the genus *Homo* (“homo” means “man” or “human” in Latin) in the definition of “human.” In some contexts, scientists also use “human” when referring to only *Homo sapiens* or to only the subset of *Homo sapiens* who are “behaviorally modern.” In contrast,
some Christians say being “fully human” means having spiritual awareness or capacity for a relationship with
God, which is not something science can measure at this time and may not map directly onto one of the above
groups. We recommend reviewing the glossary definitions of human and human evolution before you begin
teaching so you can introduce or remind students of these ideas when they come up.

This unit only scratches the surface of the debate about what it means to be human. To dive deeper, we
recommend the six-part BioLogos Language of God podcast series Uniquely Unique (biologos.link/uniquely
-unique). A wide range of guests share important insights about our biology, morality, language, culture,
technology, and what it means to be made in the image of God.

Finally, when Christians are convinced by scientific evidence that humans evolved from non-human animal
ancestors, they seek answers to questions about Adam and Eve that both satisfy their theological commitments
and their scientific understanding. Different people may think some questions are more important than others
or that the answers to some questions are more debatable than others. In this unit, students will learn about
several interpretations proposed by advocates of evolutionary creation and evaluate what questions are
most important to them personally. We have sought to fairly represent a range of interpretations without push-
ing toward one “correct” view. You may also want to incorporate teaching from your denomination or faith
tradition.

All of these topics are challenging and nuanced. There are risks in teaching them, as well as risks in not teaching
them! If you have questions or simply need some encouragement, please reach out to us on the Educator’s
Forum (biologos.link/forum).
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