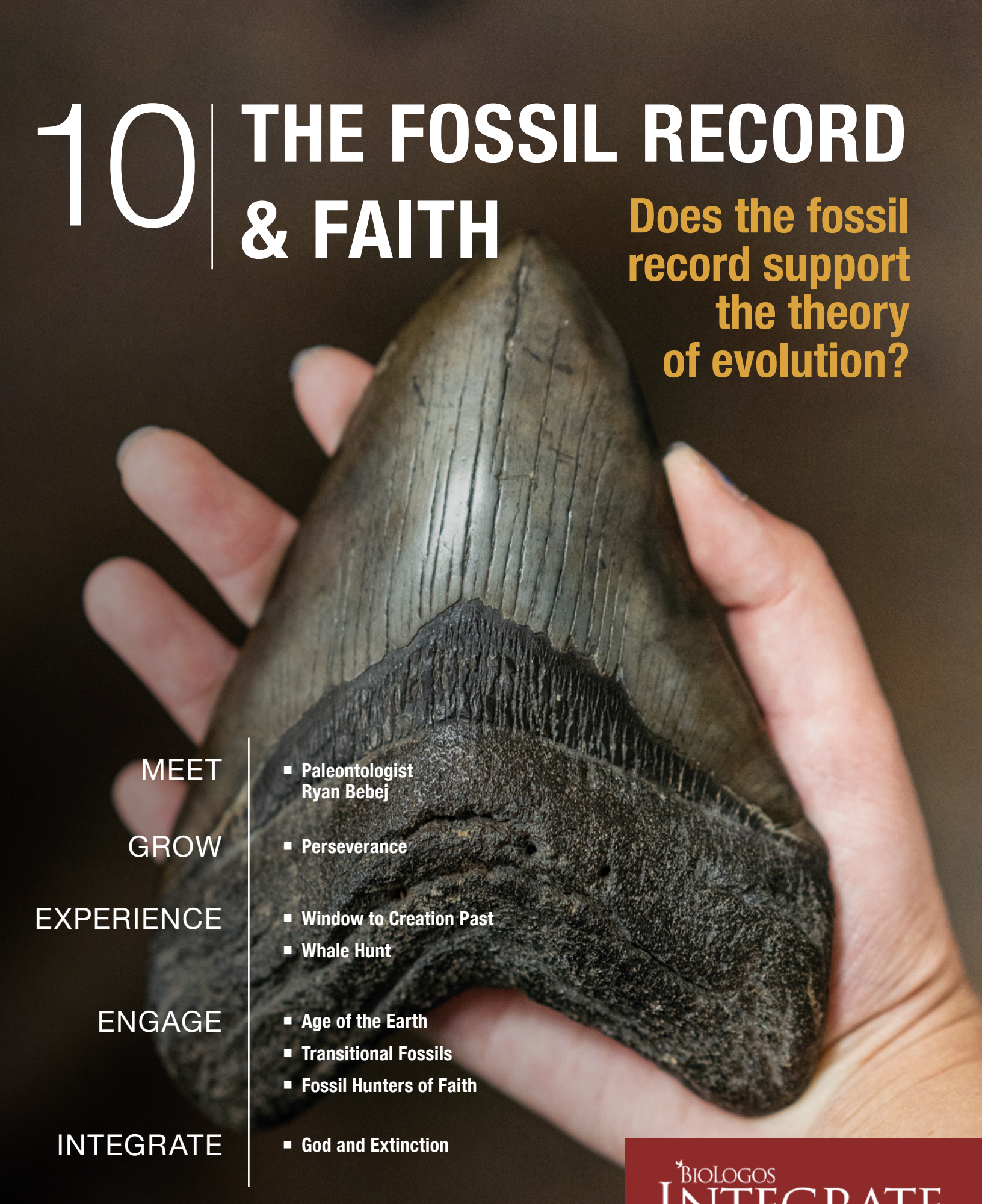
10 THE FOSSIL RECORD & FAITH

Does the fossil record support the theory of evolution?



MEET
- Paleontologist Ryan Bebej

GROW
- Perseverance

EXPERIENCE
- Window to Creation Past
- Whale Hunt

ENGAGE
- Age of the Earth
- Transitional Fossils
- Fossil Hunters of Faith

INTEGRATE
- God and Extinction

Above: *Carcharocles* tooth

BioLogos INTEGRATE

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10 The Fossil Record and Faith

TEACHING TIME
5:30–7:00
HOURS

Does the fossil record support the theory of evolution?

Unit Overview

Unit 10: The Fossil Record and Faith guides students through the evidence for evolution found in the fossil record, and takes a closer look at how this evidence can be harmonized with the Bible.

This unit features:

- A video introduction to paleontologist Ryan Bebej.
- An introduction to scientific dating methods.
- A hands-on activity finding and researching fossils.
- A chance to learn about the role transitional fossils play in evolutionary theory.
- An activity that guides students through the evidence for the claim that whales evolved from land mammals.
- A discussion of four Christian women in paleontology who persevered in their work when faced with opposition.
- A devotional Bible study on the virtue of perseverance.
- A challenge to consider what the fossil record can teach us about the character of God.

QUICK LINKS

User Introduction and Overview

Units List

Course Pairing

Next Gen Science Standards Alignment

Glossary

Learning Outcomes

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

- Compare different views about the meaning of "day" in Genesis 1.
- Identify appropriate ***scientific dating methods*** to measure the age of specific items.
- Define two principles of geological ***stratigraphy***: ***superposition*** and ***faunal succession***.
- Depict the life of a creature prior to fossilization.
- Postulate how the presence or absence of ***transitional fossils*** in the geologic record might influence a Christian's acceptance of ***evolution***.
- Evaluate the claim that whales evolved from land mammals based on evidence from fossil and extant skeletons.
- Explain how perseverance can help both scientists and people of faith be successful as they pursue truth.
- Articulate how a relationship with Jesus can empower perseverance in ways that go beyond human will power.

How to Use This Unit

Please see the **User Introduction and Overview** (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 an ancient earth and common descent in the fossil record and ways Christians can reconcile this evidence with their understanding of the Bible. After completing *Unit 10: The Fossil Record and Faith*, you can continue with other units (biologos.link/units-list) that pair well with your science or Bible course (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*. This unit also builds on the principles of Bible interpretation used by Christians who accept scientific consensus that are introduced in *Unit 8: Bible Interpretation and Science*. To learn more about how Christians interpret Genesis and reconcile core Christian beliefs with evolution and an ancient earth, see *Unit 9: Evolution and God's Creation,* and *Unit 11: Humans and the Rest of Creation.*

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 ethical and theological 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 geology.

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).

analogous structures
appearance of age
baraminology
biblical genealogy dating
biblical literalism
catastrophism
common descent
creationism
creation science
evolution
evolutionary creation (EC)
faunal succession
flood geology
geologic time scale (GTS)
global flood
gradualism
historical science
homologous structures
human evolution
intermediate fossil
kinds (biblical kinds)
K-Pg boundary (K-T boundary)
local flood
old earth creation (OEC)
operational science
paleoanthropology
phylogenetic tree
phylogenetics
radiocarbon (carbon-14) dating
radiometric dating
rapid speciation
scientific consensus
scientific dating methods
speciation
stratigraphy
superposition
transitional fossil
uniformitarianism
vestigial structure
young earth creationism (YEC)

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