2 WAYS OF KNOWING

How do we gain trustworthy knowledge in science and theology?

MEET

- Philosopher Jim Stump

GROW

- Faith

EXPERIENCE

- Scientific Knowledge

ENGAGE

- Different Kinds of Knowledge
- Theological Knowledge
- Parallels in Science and Theology
- Cognitive Bias
- Trust and Skepticism

INTEGRATE

- Two Perspectives
Unit 2: Ways of Knowing

Unit Overview ................................................................. 3
Learning Outcomes .......................................................... 4
How to Use This Unit ....................................................... 4
Vocabulary ................................................................. 6

2.1 Meet: Philosopher Jim Stump ........................................... 7
Jim Stump explains what philosophers do and describes the relationship between knowledge and faith in science and theology.

2.2 Grow: Faith ................................................................. 9
How can we continue entrusting our lives to God even in the face of doubts and questions?

2.3 Engage: Different Kinds of Knowledge ............................... 13
Is some knowledge more valuable than other knowledge?

2.4 Engage: Theological Knowledge: Doctrines, Beliefs, Practices ........... 16
How does Christianity change over time?

2.5 Experience: Scientific Knowledge .................................. 19
How do we acquire knowledge in science?

2.6 Engage: Parallels in Science and Theology ....................... 23
What do gaining knowledge in science and in theology have in common?

2.7 Engage: Cognitive Bias ............................................... 25
How do cognitive biases influence the way we respond to new ideas?

2.8 Engage: Trust and Skepticism ....................................... 28
When should we trust experts and leaders?

2.9 Integrate: Two Perspectives ......................................... 37
How do science and Scripture provide complementary answers?

Unit Glossary ............................................................... 39
Unit Overview

Unit 2: Ways of Knowing explores the differences between theological knowledge and scientific knowledge. Students are invited to consider how different ways of knowing can complement each other as we pursue holistic truth about the world. This unit features:

• A video introduction to philosopher Jim Stump.
• A devotional Bible study on the virtue of faith.
• An activity to explore different ways of knowing and describing the world.
• An activity that shows how Christian beliefs and practices change over time.
• Hands-on practice using the scientific method.
• A comparison of the parallel process in science and theology for acquiring knowledge and coming to consensus.
• A research activity to identify cognitive biases.
• A discussion of how to employ trust and skepticism in healthy ways.
• A Bible study exercise that demonstrates how science and theology ask and answer different kinds of questions.
Learning Outcomes
What will students know or be able to do after this unit?

- Identify activities that strengthen faith.
- Distinguish between ways of knowing in science versus theology.
- Identify questions that science is not equipped to answer.
- Distinguish between Christian doctrines, beliefs, and practices.
- Explain how revised interpretations and new applications lead to changes in doctrines, beliefs, and practices.
- Practice observation and inference to create and refine a hypothesis and critically evaluate competing hypotheses.
- Compare and contrast how scientific and theological knowledge is acquired and evaluated.
- Describe several forms of cognitive bias and evaluate the extent to which they affect how we respond to new ideas in science and theology.
- Critically evaluate the trustworthiness of scientists and scientific claims.
- Critically evaluate a scientific claim for scientific merit and a theological claim for orthodoxy.

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.
Unit 2  | Ways of Knowing

UNIT OVERVIEW

Scope and Sequence

This unit provides a comparison between theological and scientific knowledge and the methods scientists and theologians use to arrive at a consensus. After completing Unit 2: Ways of Knowing, 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.

For an introduction to questions at the intersection of faith and science, see Unit 1: Faith and Science Foundations. If you would like to take an in-depth look at different approaches Christians use to interpret Scripture and harmonize theological knowledge with scientific knowledge, dig into Unit 8: Bible Interpretation and Science. An emphasis on seeing truth about God in the natural world is found in Unit 12: Seeing God in Creation. To explore how science can be a way to serve God, see Unit 3: Science as a Christian Vocation. Open questions and debated issues about how to best reconcile theological and scientific knowledge are explored in Unit 4: Cells and Design, Unit 5: Genetic Diversity and Human Dignity, Unit 6: DNA Technologies and Ethics, Unit 7: Fearfully and Wonderfully Made, Unit 9: Evolution and God’s Creation, Unit 10: The Fossil Record and Faith, Unit 11: Humans and the Rest of Creation, 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. At the same time, we as authors recognize that in any community of Christians, there is likely a diversity of viewpoints. 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 the nature of science.

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).

Christian apologetics  
cognitive bias  
doctrine  
eisegesis  
empirical evidence  
epistemology  
eugenics  
exegesis  
falsifiability  
genetically modified organism (GMO)  
geologic time scale  
heliocentrism  
historical science  
inference  
K-Pg boundary  
“man's word”  
metaphysical naturalism  
natural theology  
opernicid science  
operational science  
orthodox  
peer review  
pseudoscience  
scientific consensus  
scientific method  
scientific theory  
scientism  
two books metaphor  
worldview
Integrate was made possible through the generous financial support of the John Templeton Foundation, TBF Foundation, and other supporters. The opinions expressed in this resource are those of the authors and do not necessarily reflect the views of the funders.

© BioLogos 2020

Authors (biologos.link/integrate-authors):
   Kathryn Applegate
   April Maskiewicz Cordero
   Christy Hemphill
   Sarah Bodbyl Roels
   Diane Sweeney
   Kendra Terpstra

Design: Bracket Publishing

Cover and interior image: Vladimir Fedotov (Unsplash)

All icons from the Noun Project:
“Cross” icon by Guilherme Furtado; “Gears” icon by David; “Handshake” icon by Takao Umehara; “Head” icon by Gilbert Bages; “Microscope” icon by Creative Stall; “Paper” icon by Icon Factory; “Puzzle” icon by Agarunov Oktay-Abraham; “Video” icon by i cons.

Copyright and Usage Agreement

The documents comprising Integrate are copyrighted by BioLogos and may be used or modified for use in the household or classroom of the purchaser and up to one co-facilitator; these documents, or any modified documents based on these documents, may not be sold or distributed beyond the household or classroom of the purchaser without express permission of BioLogos. See our Terms of Service (biologos.link/terms-of-service) for additional details regarding access to, purchase, and use of Integrate.