ByDesign Biology

The Scientific Study of Life

New!

Coming to Your Classroom

FALL 2020

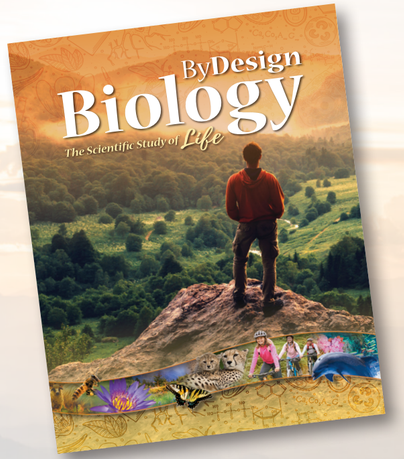
Humans are as much a part of nature as every other creature, and we have a specific role to play as part of God's Creation.

ByDesign Biology

The Scientific Study of Life

Life is recognized on the basis of its characteristics, which include cellular structure, metabolism, reproduction, development, homeostasis, genetic material, and adaptability. Our worldview strongly influences how we see life, the questions we ask about it, and the theories we will consider to explain it.

This new *ByDesign* Biology program, considers two popular contrasting worldviews—materialistic Darwinism, which claims that life originated without divine intervention, and biblical theism, which is the belief in the existence of God. Like all worldviews, the Darwinian and biblical worldviews provide a framework for understanding reality—and particularly biology. This new program explores both worldviews while adhering to the principles, beliefs, and high standards of the Seventh-day Adventist (SDA) educational system.



Student Edition

The *ByDesign* Biology curriculum is designed to serve the SDA family and is grounded in the foundations of the faith beliefs of the SDA church, making it easy for high school biology teachers to present content while maintaining accordance with SDA worldviews. Parents and families who have consciously chosen a faith-based education for their child(ren) can feel confident in the *ByDesign* Biology curriculum.

Additional Resources

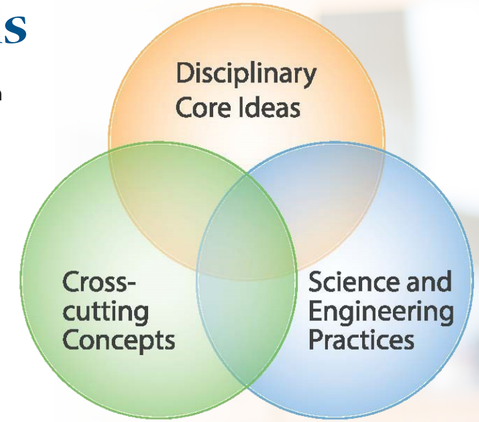
The *ByDesign* Biology curriculum offers additional resources to assist with program implementation. The in-depth *Teacher Edition* features reduced *Student Edition* pages and includes answer keys and curricular connections to other subjects, such as social studies.

The teacher lab resources also provide additional information to adapt experiments, guide students through potential areas of difficulty, and answer student questions.

***ByDesign* Biology** provides a commitment to excellence and expands what it means to receive a well-rounded education within our faith-based community.

Educational Standards

This first edition of ***ByDesign* Biology** aligns with the SDA high school curriculum standards as well as the Next Generation Science Standards (NGSS). These standards acknowledge that inquiry is central to science learning. The NGSS recommend that science education be built around three dimensions of learning: science and engineering practices, crosscutting concepts, and disciplinary core ideas.



Three Dimensions of Learning

The NGSS encourage an explicitly materialistic approach to the sciences, particularly biology. Christians approach nature from a different perspective, one that is either ignored or specifically opposed in most current texts; thus, Christian schools have a need for more balanced textbooks that examine a variety of understandings of nature, including the biblical perspective.

Click here to view
Program Correlation
to NAD Education and NGSS standards

ByDesign
Biology
The Scientific Study of Life

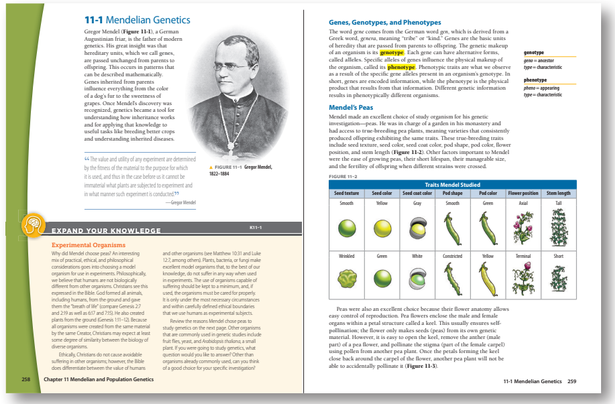
Science, and particularly biology, is not about knowing everything; it is a process for discovering something about reality, and that something is amazing. Science is a systematic method of acquiring knowledge and understanding the natural world by collecting and analyzing empirical data, followed by interpretation.

Scripture Spotlights
show students the connections between unit topics and the Word of God in the Bible, and explicit biblical connections (e.g., the Great Flood as an example of a population bottleneck) also help students use their faith to understand what they learn.

Curriculum Design

The *ByDesign* Biology program materials feature a new interior design and layout that actively engages all students in the study of science and weaves together a faith-based curriculum. The layout is teacher-friendly and includes suggestions and materials for assessment, differentiation of instruction, and incorporation of technology.

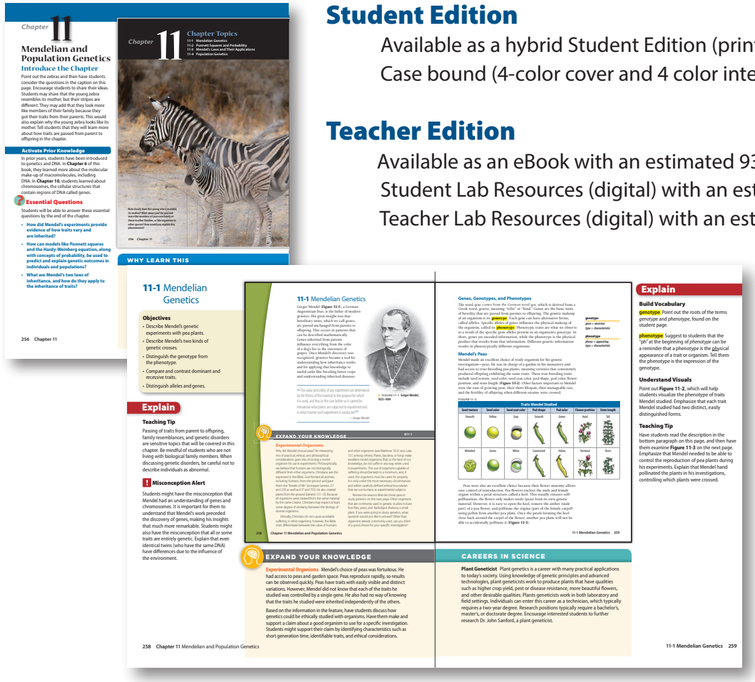
This customized Christian based program includes 27 chapters that offer teachers the flexibility to select the chapters they plan to teach within an eBook. The program provides all the lab resources you will need for you and your students.



Student Edition, *Chapter 11*

ByDesign Biology presents the two contrasting worldviews of Darwinism and biblical creationism, allowing students to learn the history and merits of each approach to the understanding of life on Earth. Included are concepts to help deal with philosophical issues that arise when you study faith and science together. The content for student and teacher provides a sound basis for what we believe, and why, regarding origins.

Component Overview



Teacher Edition, *Chapter 11*

Student Edition

Available as a hybrid Student Edition (print and eBook with 6-year license)
Case bound (4-color cover and 4 color interior) with an estimated 744 pages.

Teacher Edition

Available as an eBook with an estimated 932 pages.
Student Lab Resources (digital) with an estimated 322 pages.
Teacher Lab Resources (digital) with an estimated 416 pages.

Click here to view
Sample Chapter

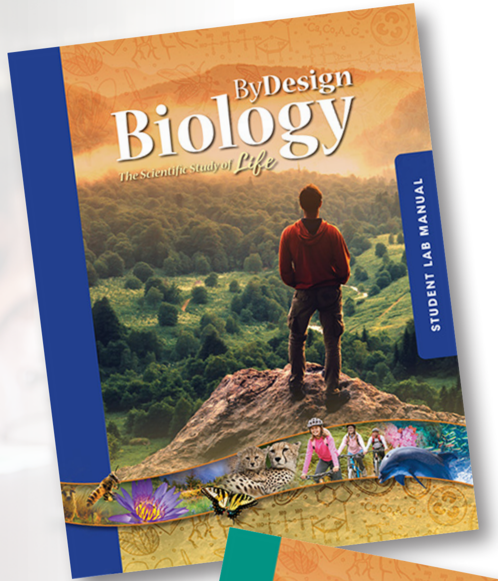
ByDesign Biology is an inquiry-based biology program that is creative, engaging, and interactive, challenging students' natural curiosity. The underlying structure of each unit is designed with the principles of inquiry in mind, and the labs accompanying each unit allow students to put their learning into action.

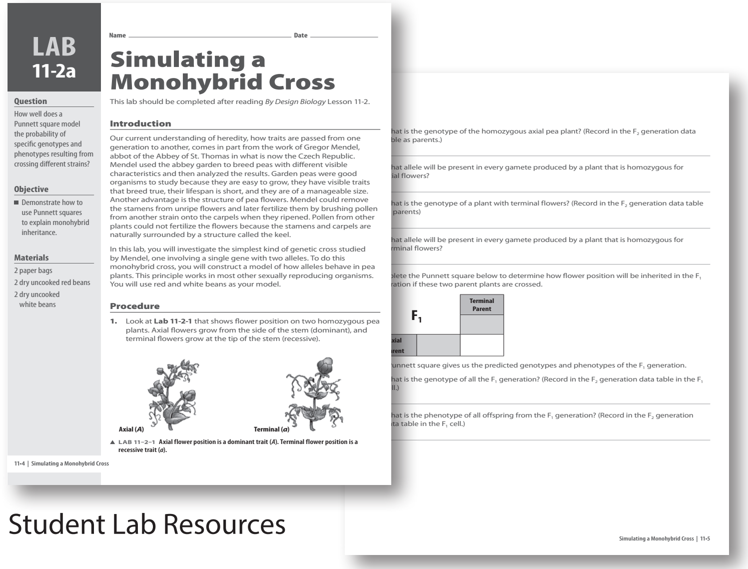
Lab Resources*

The ***Student Lab Resources*** are a resource for teachers to provide to each student. Teachers select labs based on the chapter and lesson they are using with their instruction. Labs are organized by chapter and lesson.

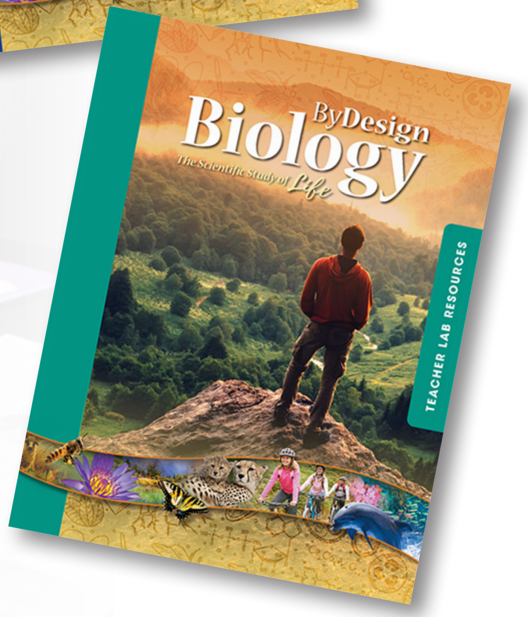
The ***Teacher Lab Resource*** contains instructions for conducting the inquiry labs as well as additional instruction and answers to the questions that appear in the labs.

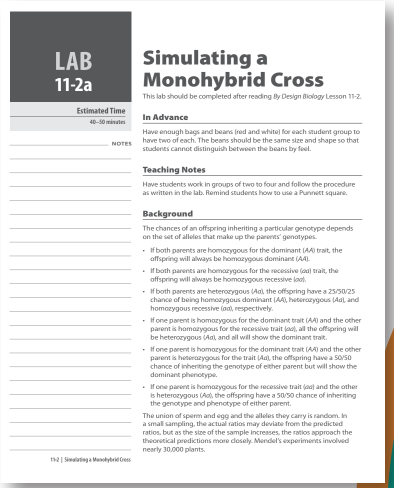
**Printed manuals are available by request for the Teacher Lab Resources and the Student Lab Resources.*





Student Lab Resources





Teacher Lab Resources

Click here to view **Sample Pages**

eBooks

The eBooks offer teachers and students access to high-quality content that can be viewed in either single- or double-page mode and can be enlarged for easier viewing. eBook functionality allows students to take notes and highlight key concepts. Links from the table of contents provide quick access to chapters, lessons, glossary definitions, and supporting labs developed to enhance the inquiry experience.

Flourish is an online platform that provides you with all the materials for *ByDesign Biology* in a digital format. Everything is available all day, every day through online access so that you can plan at school or at home and your students can learn wherever they are. The student textbook, your teacher edition, and all lab resources needed to complete a lesson are readily accessible at the point of use.

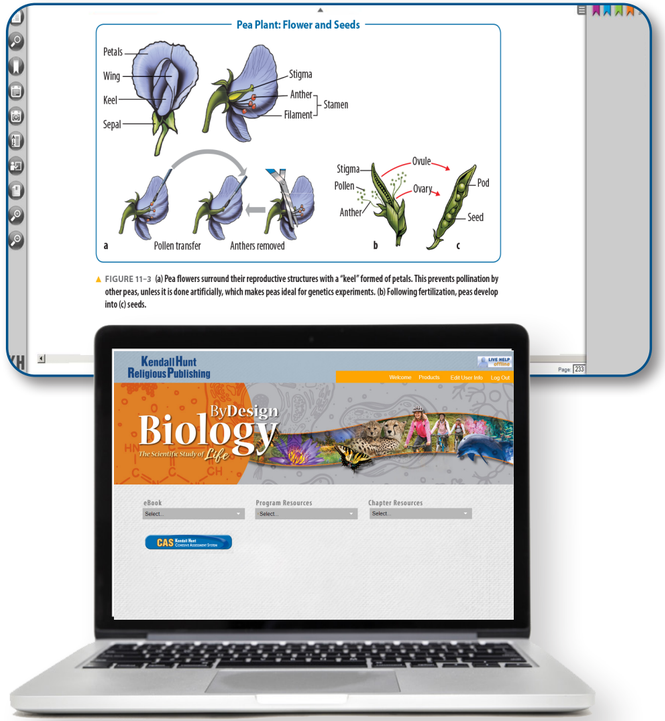


Table of Contents*

The *ByDesign Biology* program consists of 27 chapters covering a wide range of essential biology topics, giving teachers and students insight into ecosystems, cell structure and function, genetics, taxonomy, and human biology.

With its clear diagrams, beautiful images, and various extension and review activities, students will be amazed by what they will learn about God's Creation and the scientific principles that help them understand it.

** Aligns with the SDA high school curriculum standards and the Next Generation Science Standards (NGSS)*

Ecology and Interdependence

Chapter 3 **Ecosystems**
- **Lesson 1** Introduction to Ecology
- **Lesson 2** Energy Flow in Ecosystems
- **Lesson 3** Matter Cycles in Ecosystems
- **Lesson 4** Types of Ecosystems

Chapter 4 **Populations and Communities**
- **Lesson 1** Describing Populations
- **Lesson 2** Community Structure and Interactions
- **Lesson 3** Ecological Succession

Chapter 5 **Conservation**
- **Lesson 1** Importance of Biodiversity
- **Lesson 2** Humans and the Environment
- **Lesson 3** Conservation Biology

Humans are as much a part of nature as every other creature, and we have a specific role to play as part of God's Creation.

Cell Structure and Processes

Chapter 6 **Molecules of Life**
- **Lesson 1** Water
- **Lesson 2** Carbon
- **Lesson 3** Macromolecules

Chapter 7 **Cell Structure and Function**
- **Lesson 1** Cellular Life
- **Lesson 2** Cell Parts
- **Lesson 3** Cell Transport

Chapter 8 **Photosynthesis**
- **Lesson 1** Energy for Life Processes
- **Lesson 2** Overview of Photosynthesis
- **Lesson 3** The Process of Photosynthesis
- **Lesson 4** Variations of Photosynthesis

At its most basic level, life depends on an elegant organization of macromolecules—the building blocks of living things. The structure of these molecules determines how each one functions inside the cell.

Chapter 9 **Cellular Reproduction**
- **Lesson 1** Overview of Cellular Respiration
- **Lesson 2** Process of Cellular Respiration
- **Lesson 3** Fermentation and Anaerobic Respiration

Chapter 10 **The Cell Cycle**
- **Lesson 1** Cell Growth and Reproduction
- **Lesson 2** The Cell Cycle
- **Lesson 3** DNA Replication
- **Lesson 4** Regulation of the Cell Cycle
- **Lesson 5** Cell Differentiation

Genetics

Chapter 11 **Mendelian and Population Genetics**
- **Lesson 1** Mendelian Genetics
- **Lesson 2** Punnett Squares and Probability
- **Lesson 3** Mendel's Laws and Their Applications
- **Lesson 4** Population Genetics

Chapter 12 **Chromosomes and Inheritance**
- **Lesson 1** Meiosis
- **Lesson 2** Chromosomes and Mutation
- **Lesson 3** Tracing Inheritance

Chapter 13 **Gene Expression and Regulation**
- **Lesson 1** Types of RNA
- **Lesson 2** Protein Synthesis
- **Lesson 3** Gene Regulation

Chapter 14 **Technology and Bioethics**
- **Lesson 1** The New Frontier
- **Lesson 2** Biotechnology
- **Lesson 3** Ethics and Biotechnology

At its core, genetics is about coded information stored in amazingly long strands of DNA. Genetics is also about how that information is transmitted, retrieved, and used to make proteins and other structures that ultimately deem what an organism's body is capable of being.

Taxonomy

Darwinian evolutionism forces similarities into a universal common ancestry, yet the biblical worldview looks at the diversity of biology as origin by design.

Human Biology

The human body is amazing. Its sophisticated organization allows us to experience the world around us and gives us the ability to think, create, and respond in ways that no other creature can.

Conclusion

ByDesign Biology

The Scientific Study of Life

Educators and students will benefit from this customized, faith-based biology curriculum.

Kendall Hunt Religious Publishing

For more information about bringing *ByDesign* Biology to your classroom, call 1-800-542-6657 or visit rpd.kendallhunt.com

Developed in Collaboration with the Seventh-day Adventist NAD Office of Education and Kendall Hunt Religious Publishing A Division of Kendall Hunt Publishing