OVERVIEW

3-Course Model

CALIFORNIA

Miller & Levine •

Experience Biology

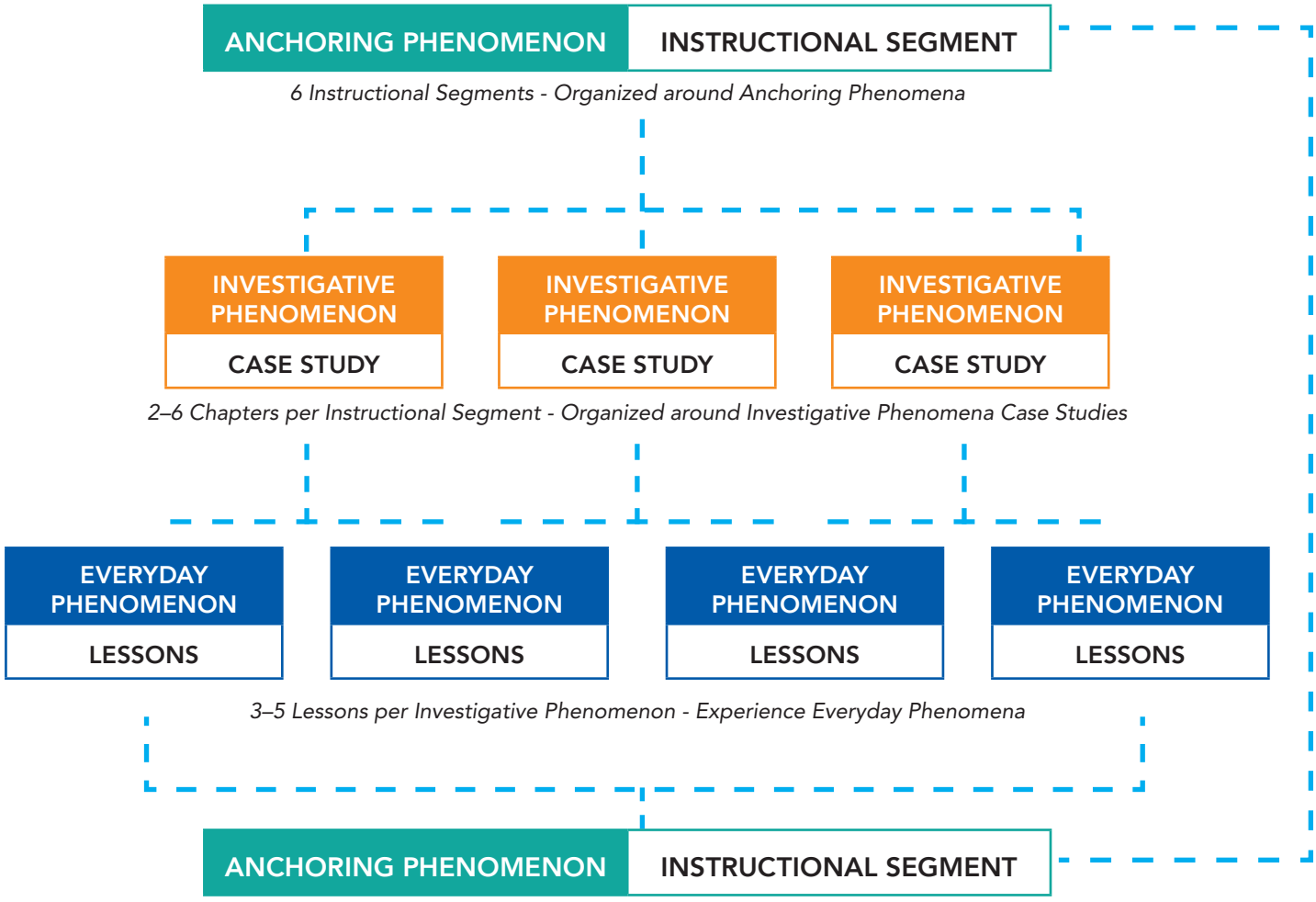
The Living Earth

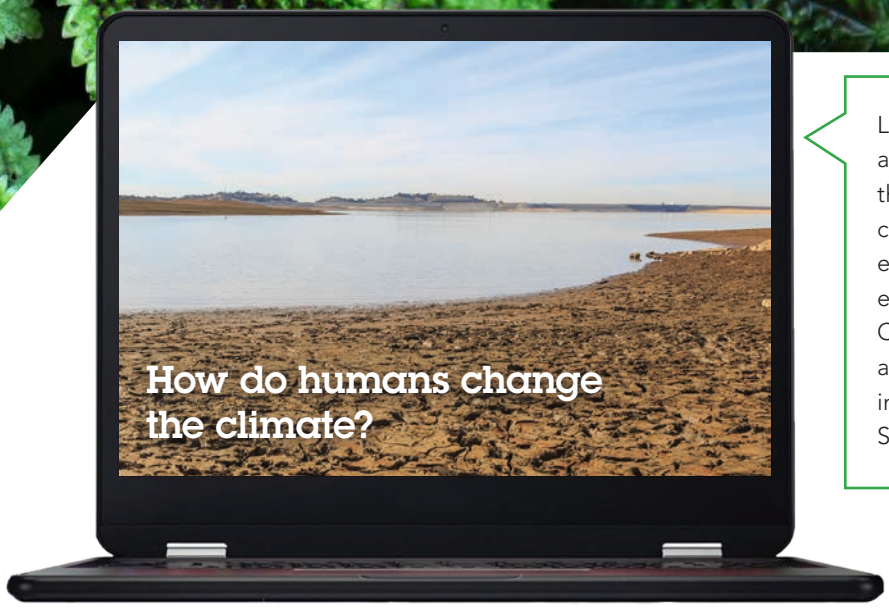
Experience

IT'S THE SCIENCE OF DOING!

Phenomenal
experiences drive student inquiry.

The *Miller & Levine Experience Biology: The Living Earth Three-Course Model* program uses phenomena to engage students in understanding the core ideas of biological science, the biosphere, and Earth systems. The program organization allows students to achieve the California NGSS performance expectations through Anchoring, Investigative, and Everyday Phenomena.





Launch every Instructional Segment with an **ANCHORING PHENOMENON** video that sets a clear storyline for studying the core concepts. Students use evidence, evaluate claims, and develop models to explain the phenomenon. They complete Claim-Evidence-Reasoning activities, analyze authentic readings, and engage in an Anchoring Phenomenon STEM project.

The **INVESTIGATIVE PHENOMENON CASE STUDY** launches every chapter with an intriguing, open-ended scientific problem or question. Students conduct investigations around the case as they progress through the chapter. They focus on DCIs, SEPs, and CCCs in their investigations.

Students relate Anchoring and Investigative experiences to **EVERYDAY PHENOMENA**. Engaging prompts in every lesson encourage discourse to explain scientific findings.

Ensure depth of understanding. Students **REVISIT THE ANCHORING PHENOMENON** in every chapter and continue to work on their Claim-Evidence-Reasoning activities.

Experience
creates real learning opportunities.

Do more inquiry! Ongoing exposure to phenomena creates inquiry in every lesson. Students experience the DCIs and use the three dimensions as they form connections to the Investigative and Anchoring Phenomena. This is real science requiring investigation of real phenomena.

Labster

Award-winning Virtual Lab Simulations

- Immersive, interactive learning
- Lifelike 3-D animations
- Gamified missions and storytelling
- Real-life, open-ended cases
- Point-of-use quizzes
- No expensive lab equipment
- Eliminates all safety issues

hhmi BioInteractive

Animations

Engaging animations, integrated at point of use in the student program, combine scientific rigor with best practices of visual storytelling.

Scientists at Work Career Videos

Watch scientists describe how they apply the scientific process to understanding a range of phenomena.

Spreadsheet Data Analysis Tutorials

Students learn essential quantitative skills applied to biology research.

Inquiry Warm-Ups

Activities, demos, or labs engage students in collaborative discourse with hands-on science in every lesson opener.

HS-LS3-2

Quick Lab Open-Ended Inquiry

Modeling DNA Replication

1. Cut out small squares of white and black paper to represent phosphate and deoxyribose groups. Label the white squares "phosphate" and the black squares "deoxyribose."
2. Then cut colored paper strips to represent the four nitrogenous bases. Match the colors used in **Figure 13-11**. Label each strip with its nucleotide name. Then tape together a set of five nucleotides.
3. Using your nucleotides, tape together a single strand of DNA. Exchange strands with a partner.
4. Model DNA replication by creating a strand that is complementary to your partner's original strand.

ANALYZE AND INTERPRET DATA

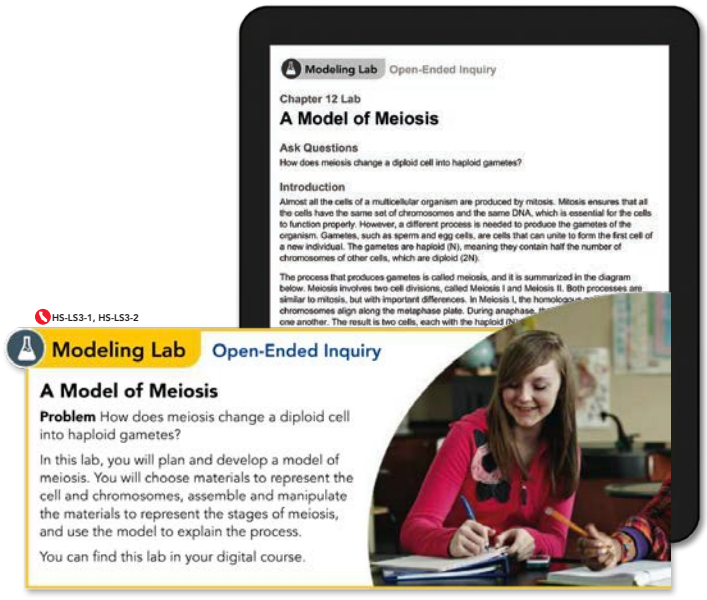
1. **SEP Use Models** The action of what enzyme was modeled by the taping together of the nucleotides?
2. **SEP Evaluate Models** In what ways does this activity accurately model DNA replication? How could you improve the activity to better model the steps of DNA replication?
3. **Defend Your Claim** How can errors during DNA replication lead to genetic variations? Use your model to support your answer.

Quick Labs

- Interact with chapter concepts at point of use
- Focus on Science and Engineering Practices
- Save valuable time with easy setup and cleanup

Inquiry Labs

- Conduct in-depth laboratory investigations
- Make and use models
- Plan and conduct experiments
- Aggregate, interpret, and present results
- Use appropriate laboratory equipment and technologies
- Customize and edit on the Savvas Realize™ digital platform
- Two versions of each lab for differentiation



HS-LS3-1, HS-LS3-2

Modeling Lab Open-Ended Inquiry

A Model of Meiosis

Problem How does meiosis change a diploid cell into haploid gametes?

In this lab, you will plan and develop a model of meiosis. You will choose materials to represent the cell and chromosomes, assemble and manipulate the materials to represent the stages of meiosis, and use the model to explain the process.

You can find this lab in your digital course.

CA NGSS
made accessible for all students.

Miller & Levine Experience Biology helps all students "experience" science through hands-on labs, projects, and simulations. Visuals, interactivity, and reading support assist students in understanding DCIs, integrating SEPs and CCCs, and evaluating evidence.

Reach All Students

Modify instruction at point of use to provide universal access for all students. Support for:

- English learners
- Special needs students
- Less proficient readers
- Struggling students
- Advanced students

DIFFERENTIATED INSTRUCTION

Share this quote with students: "Viewed from the distance of the moon, the astonishing thing about the earth, catching the breath, is that it is alive .... Aloft, floating free beneath the moist, gleaming membrane of the bright blue sky, is the rising earth, the only exuberant thing in this part of the cosmos." This quote by Lewis Thomas uses visual imagery to describe some of Earth's abiotic factors.

descrip-
ter at the

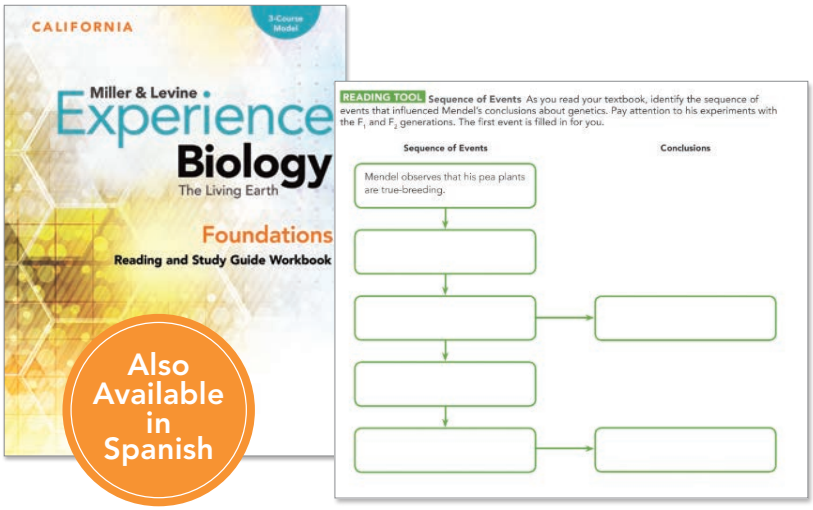
ELD SUPPORT ELD.PI.9-10.2

Interacting via Written English Student pairs use their notes from the "RNA Synthesis" section to expand and internalize vocabulary by learning and using routine language.

Emerging Have student pairs use a word/phrase bank to label a diagram illustrating transcription. Then have them complete the following sentence: Transcription is the process of _____.

Expanding Have student pairs record the steps of transcription in order, **Figure 14-2** as a guide. Then have them write

Translate the eText to over 100 languages using Google Translate™



Reinforce Learning with the Foundations Reading and Study Guide

- **Reading Tools** Target strategies to support reading comprehension.
- **Visual Reading Tools** Support difficult concepts with interactive visuals and alternative practice opportunities.
- **Science Vocabulary** Put the spotlight on new words and pronunciation to help students learn the language of biology.

3-D Assessment Tasks

Complete Assessment Suite

- **"Assess on the Spot"** prompts in the Teacher Edition provide quick **Formative Assessment** opportunities that assist teachers in clarifying and adjusting instruction as necessary.
- **Summative Assessments** include customizable interactive online quizzes and assessments.
- Students **Revisit the Anchoring Phenomenon** multiple times as they make sense of the topic.
- Students "make their case" to solve the **Investigative Phenomenon Case Study**.
- **Performance-Based Assessments** measure students' mastery of the science and engineering practices.
- **3-D Assessment** questions model the content and format of the California Science Test (CAST) in every chapter.
- **ExamView® Assessment Bank** provides more opportunities to customize and administer assessments.

NEW Three-Course Model Program engages students while meeting CA NGSS goals.

Students will experience biology like never before. Made for California, *Miller & Levine Experience Biology* supports the six Instructional Segments for the Three-Course Model. Give students an opportunity to ask questions with an engaging Anchoring Phenomenon in every Instructional Segment. Connect biology to their world with Investigative Phenomenon Case Studies and engaging hands-on labs and simulations. *Miller & Levine Experience Biology* helps all students achieve all CA NGSS performance expectations. It's the Science of Doing.

Try It Online!

Experience the award-winning digital platform. Home to all of your biology content, assessments, and student data. Now fully integrated with Google for Education™!

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