



BIOLOGY

DIGITAL WALKTHROUGH

Florida Edition

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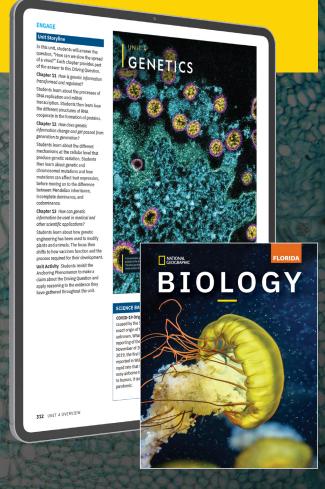
Cengage MindTap



DIGITAL WALKTHROUGH

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Student And Teacher's Edition



National Geographic Biology, © 2024

Hello Florida Biology Review Members,

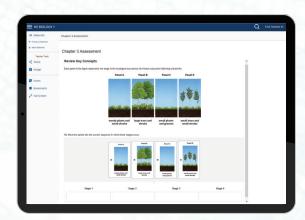
National Geographic Biology is the first high school Biology program created with National Geographic images, photography, and Explorers; a diverse group of scientists and engineers hand-picked by National Geographic for their innovation and storytelling. Florida Students will build their fundamental biology knowledge with 3-dimensional, phenomena-based lessons with engaging text and visuals, hands-on labs and investigations, and a powerful digital platform. MindTap includes an interactive eBook with embedded videos featuring National Geographic Explorers, interactive simulations, and Virtual Labs that transport students alongside Explorers to different sites for virtual adventures and research.

We look forward to **Bringing The World Into Your Florida Classroom** with **National Geographic Biology.**

Kind Regards, Your National Geographic Learning Team

FOCUS, CONNECT, AND ENGAGE

Our online solutions help you and your students accelerate learning by staying focused, connecting to content, and engaging with the world.



National Geographic Learning, a part of Cengage Group, is proud to partner with educators and schools to offer a wide range of access, enrollment, and integration offerings to our digital programs:

Our digital courseware solutions support your instruction and put students at the center of learning.

- · Independent Learning and Assessment Tools
- Course Planning and Effective Teaching Support
- In-Class Teaching Opportunities



WALKTHROUGH OUR ONLINE PLATFORM

▼ A Step-by-Step Checklist

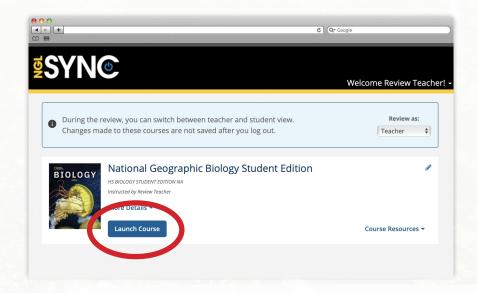
Need credentials? Explore a sample or request digital access at

NGL.Cengage.com/FL-Science

Login

- Use the credentials provided to login to the course portal
- Click the Launch Course button for the course you would like to access.

Note the Course Resources opens a dropdown to access the Cognero online test generator with included biology test bank.

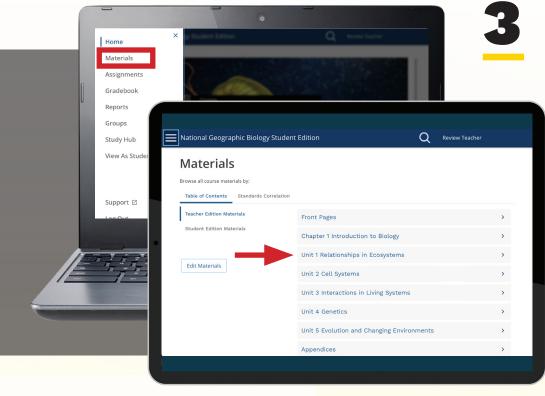




Welcome Launch

To access the content, click the three bars icon in the top left corner.





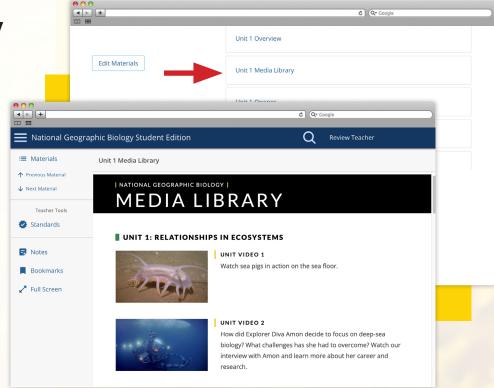
Drop Down Menu

- Click Materials
 - View the Table of Contents as well as the Standards Correlations
- Click a Unit

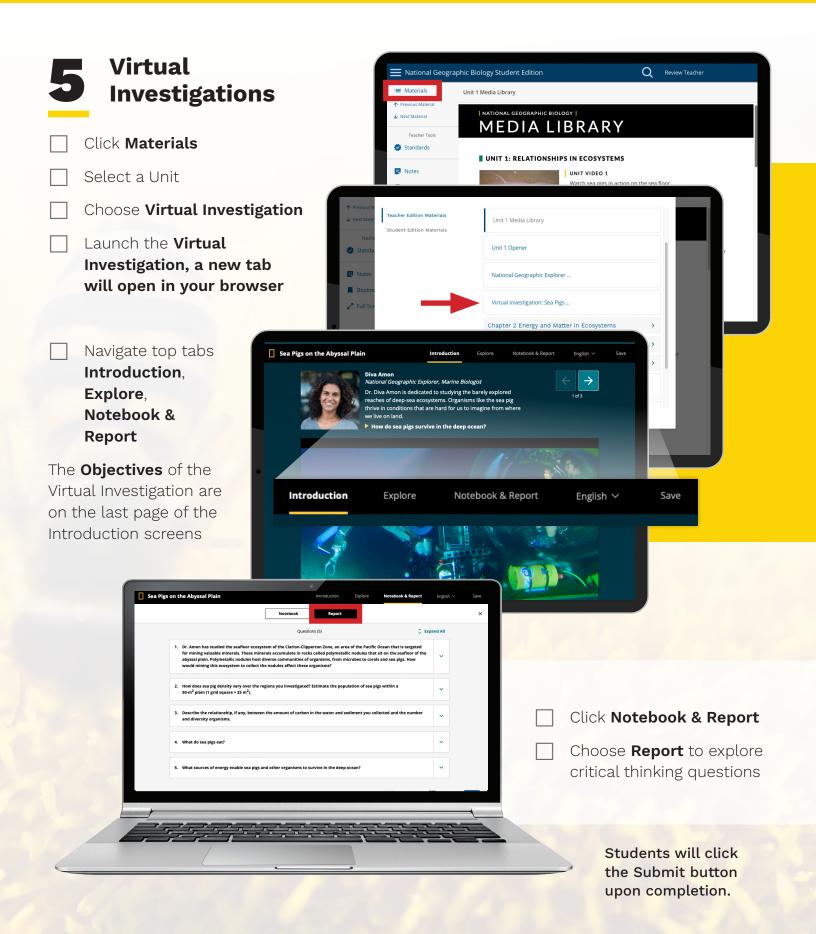
4 Media Library

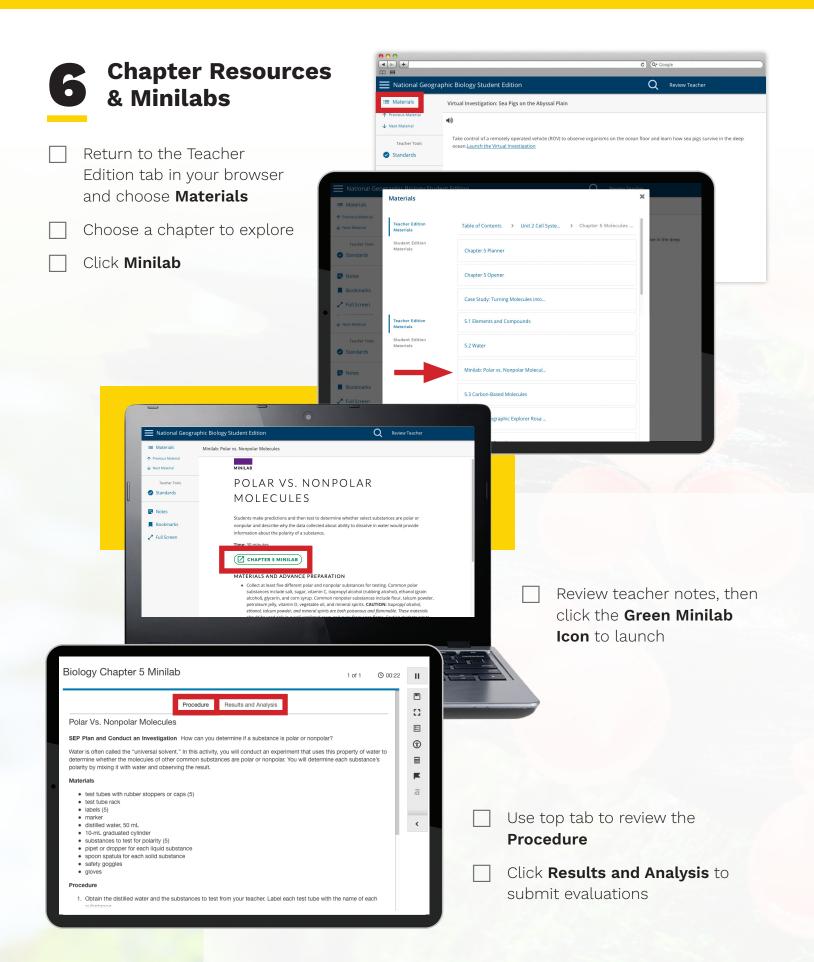
- Click Media Library
- Browse this section to review:
 - Unit Video
 - Unit Explorer
 Interview Video
 - · Lesson Videos
 - Simulations & Interactive Figures

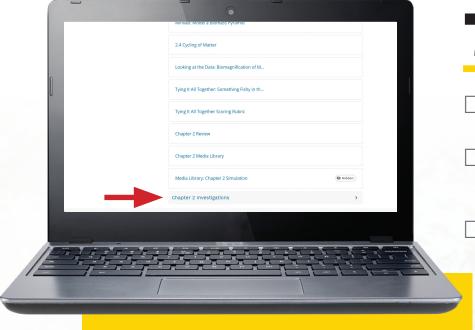
These can be found in the media library for both the unit and the chapter. They are located after the videos for each chapter.



Hint: always click upper left corner **Materials** button to return to table of contents







Chapter **Investigations**

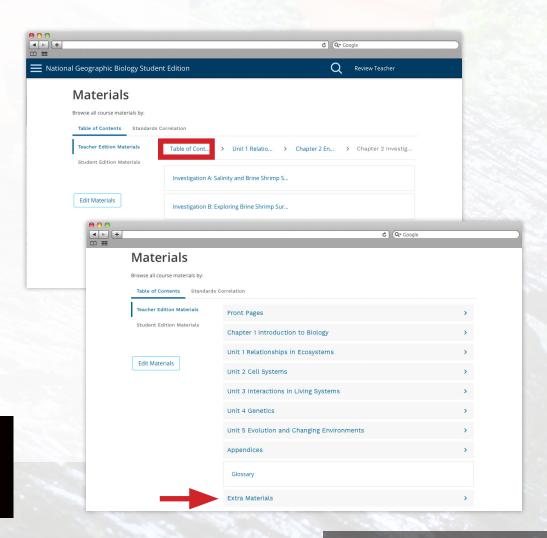
- Click Back in your browser and again choose Materials
 - Choose a Chapter and scroll down to select **Chapter Investigations**
 - Pick from the two available investigations

Note "extra materials" for these investigations

Lab Manual

- Click Table of Contents on the top
- Scroll down and click **Extra Materials**
- Review teacher resources including:
 - Handouts & rubrics
 - Teachers lab manual
 - Lecture Notes

Hint: always click upper left corner Materials button to return to table of contents



Unit Activities. Performance Tasks, and **Assessments**

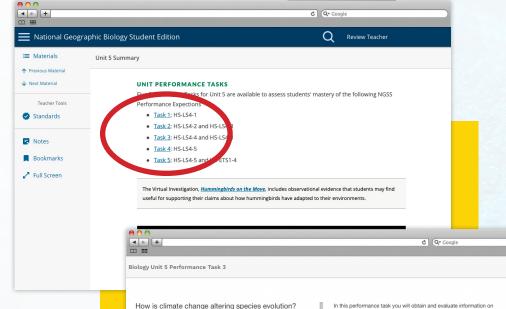
Go to Table of Contents click the unit you would like to review for assessments

Click Unit Summary

Edit Materials Unit 5 Media Library Unit 5 Opener National Geographic Explorer Anusha Sha.. Chapter 14 Evidence for Evolution Chapter 15 The Theory of Evolution Chapter 16 Survival in Changing Environments Unit 5 Summary Unit 5 Activity

Click and select a **Performance** Task to review

Unit performance tasks authentically assess performance expectations



Return to the Materials. select a Unit, click the Unit Activity to see instruction for the Claim, Evidence, Reasoning (CER) activity

North America. As an annual, this plant sprouts from seeds in spring, grows and flowers, and then dies in the summer or fall. Seeds resulting from polination of annual flowers lide obramat over the winter. When spring arrives, the seeds sprout, and the cycle begins over again. B. rapa grows in areas of Southern California where winter and spring are b. rapid gives in a least of Solutient California where white and spiring are typically rainy, in late spring, the rains subside, and the summer and fall are typically very dry. The growing season for 8. rapid lasts through the rainy set of the season but ends as the dry period begins. Frolivering occurs before this change in rainfall, allowing seed production to occur before dry weather sets in.

Field mustard (Brassica rapa) is a flowering plant native to many areas of

The rainfall pattern in Southern California changed abruptly between and 2004, when the region suffered a prolonged drought. The rainy period became shorter with much less overall rainfall. Since then, additional periods of drought have followed, with more years of drought than years of expected

A group of researchers became interested in learning whether *B.* rapa was adapting to the shorter length of its growing season in Southern California. They had stored seeds from plants grown in 1997 before the change. They also had seeds from plants grown in 2004. The researchers planted seeds from each batch and grew the plants under greenhouse conditions. Then crosses were done between the 1997 plants (1997 x 1997) and between the 2004 plants (2004 x 2004). Seeds from each cross were then planted and grown together under identical conditions in a greenhouse. As the plants grow, the researchers measured the time that elapsed before each plant produced flowers. The results are shown in the graph. The thick rectangular bars represent results from 75 percent of the plants, the lines represent another 15 percent, so that the total span of each data set represents 90 percent of plants measured in each group. A group of researchers became interested in learning whether B. rapa was

In this performance task you will obtain and evaluate information on evolutionary changes taking place in a species over time. You will make a claim based on evidence you obtained about whether the evolutionary changes observed could be due to climate change.

(%)

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Analyze Data

1. Use the data from Figure 1 to answer these questions

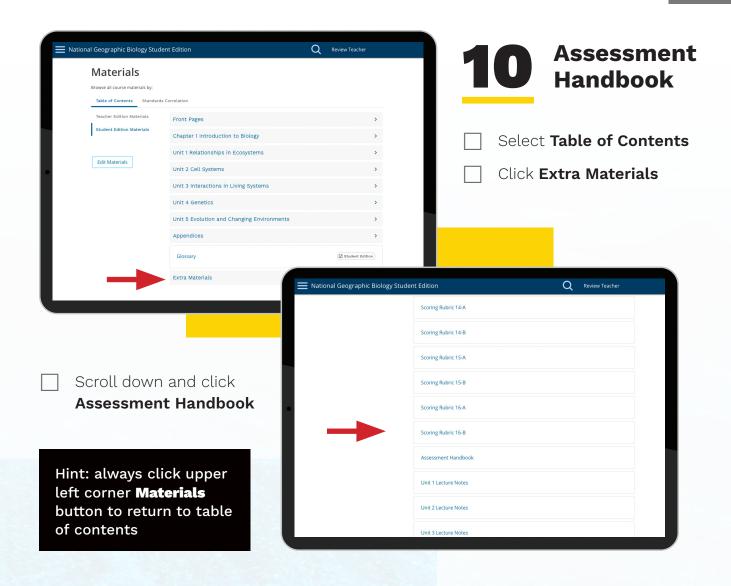
a. What do the data infer about evolutionary changes in the flowering time of B. rapa? Explain your reasoning.

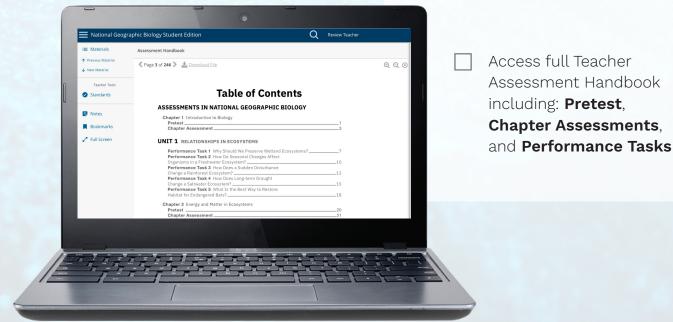
b. Could climate change have caused this evolutionary change? If, so, explain your reasoning as well as the evidence that supports your clair

c. How would you characterize the strengths of your claim? For example, if the data you use to support your claim are known to have a direct cause-and-effect relationship, your claim will be much stronger than if the data have a correlational relationship.

Choose a scenario from the list and conduct research to find more information about the topic. Use online and print resources to obtain information about the organism, its habitat, and changes in climate that may affect its survival.

- . thyme (a plant species) evolving to produce more phenoli
- tryme (a plant species) evolving to produce more phenolic compounds that ward of herbivores but reduce freeze tolerance pink salmon evolving to migrate earlier in spring
 tawny owis in Finland evolving with more brown feather color to blend in with surroundings devoid of snow
 bumblebee tongue length evolving in response to changes in plant availability.





National Geographic Biology Florida Edition Units of Study Table of Contents

1. Introduction To Biology

UNIT 1 Relationships In Ecosystems

- 2. Energy and Matter In Ecosystems
- 3. Biodiversity and Ecosystem Stability
- 4. Population Measurement and Growth

UNIT 2 Cell Systems

- 5. Molecules In Living Systems
- 6. Cell Structure and Function
- 7. Cell Growth

UNIT 3 Interactions In Living Systems

- 8. Diversity Of Living Systems
- 9. Plant Systems
- 10. Animal Systems

UNIT 4 Genetics

- 11. DNA, RNA, and Proteins
- 12. Genetic Variation and Heredity
- 13. Genetic Technologies

UNIT 5 Evolution and Changing Environments

- 14. Evidence For Evolution
- 15. The Theory Of Evolution
- 16. Survival In Changing Environments

Appendices

Lab Safety and Procedures

Data Analysis Guide

Cell Processes: Respiration and Photosynthesis

The Periodic Table

Taxonomies and Classification

Features

- 3-Dimensional lessons created with the practices of science and scientific themes to support the core ideas of science
- Phenomena-based instruction geared towards students figuring out how the phenomenon works in the real world through investigation and discovery
- Diverse National Geographic Explorers, photography, and graphics show realworld phenomena and inspire students to think like real scientists
- The MindTap digital platform includes rich media such as virtual labs, simulations, and videos featured throughout
- Data analysis and data literacy activities promote critical thinking and analysis skills
- Literacy and language support including modified text in the eBook to toggle between two reading levels, English and Spanish text and assessments available



Technology

- MindTap is a cloud-based, highly personalized learning environment that combines student learning tools readings, multimedia, activities, and assessments—into a single learning path
- Teachers can customize content for their students to introduce their own content, and teachers have access to powerful class reports and analytics to save time, measure progress, and improve outcomes
- MindTap for biology offers unique digital activities including videos featuring National Geographic Explorers, interactive simulations, and a series of virtual labs to provide students experience with real world research and lab scenarios

Notes	
	4/200
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PREPARING FLORIDA STUDENTS FOR COLLEGE AND CAREER SUCCESS THROUGH THE STUDY OF BIOLOGY



Students learn:

- ✓ Problem Solving
- ✓ Research Skills
- ✓ Organization
- ✓ Analytical Skills
- ✓ Teamwork
- √ Communication Skills
- ✓ Build an Argument Based on Evidence



For more information, visit NGL.Cengage.com/FL-Science

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