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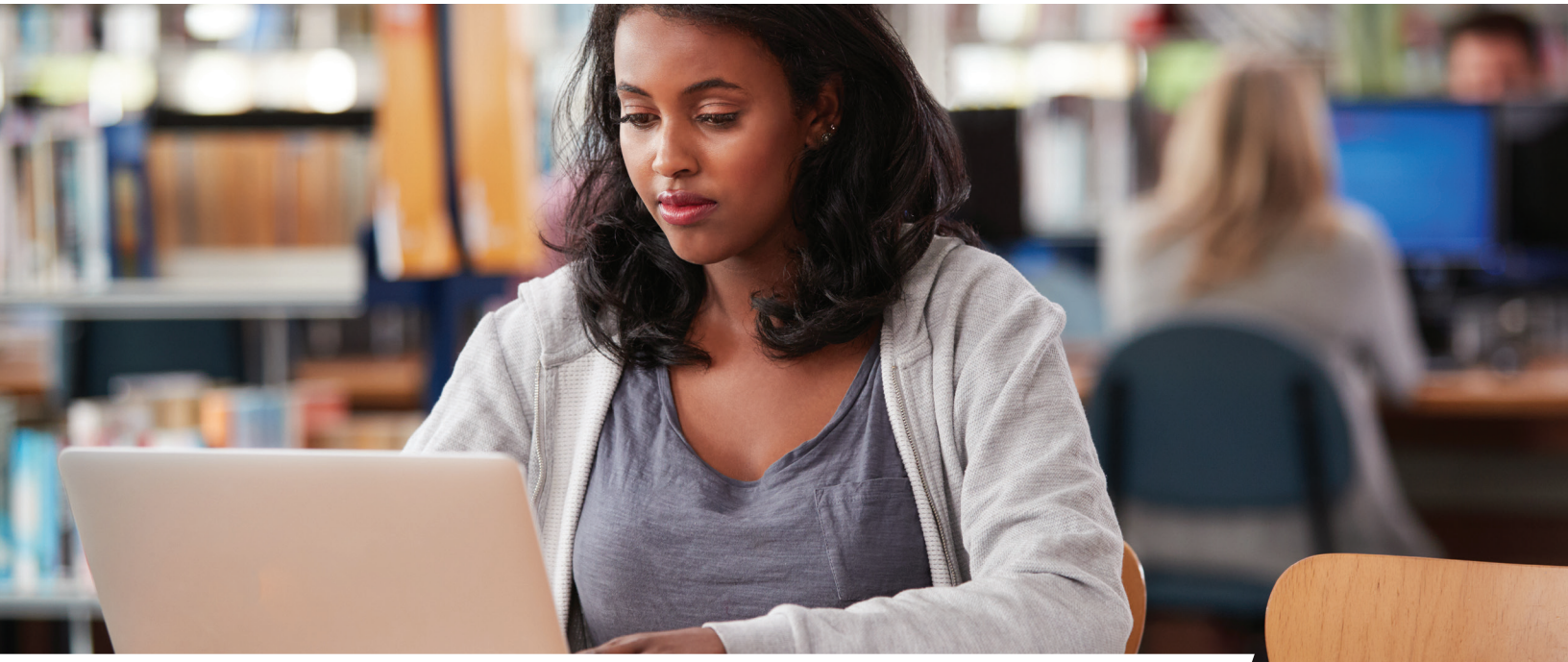

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New Features You'll See in *Essentials of The Living World*, 6e

Title: Essentials of The Living World, 6e

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Focus on the Essentials —

1. This edition was edited to focus more clearly on the essential topics a non-major biology student needs to know to be an informed citizen in today's society. Content has been trimmed into smaller chunks with more frequent subheadings to increase comprehension and retention.

Increased Emphasis on Relevance —

2. **New Readings.** New *Answering Your Questions About* readings and numerous new full-page readings throughout the text focus on topics of interest to students including vaping, energy drinks, nutrition, being LGBTQ, and the opioid epidemic.

3. **Relevancy e-book.** The Relevancy Module e-book demonstrates the connections between biological content and topics that are of an interest to society as a whole. Each module consists of an overview of basic scientific concepts and then a closer look at the application of these concepts to the topic. Assessment questions, specific to the module, are also available.

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4 **BioNow Videos.** Like the Inquiry & Analysis feature at the end of each chapter of *Essentials of the Living World*, BioNow videos, narrated and produced by educator Jason Carlson, provide a relevant, applied approach that allows your students to feel they can actually do and learn biology themselves. While tying directly to the content of your course, the series of videos help students relate their daily lives to the biology you teach, and then connect what they learn back to their lives. Each video provides an engaging and entertaining story about applying the science of biology to a real situation or problem. Attention is given to using tools and techniques that the average person would have access to, so your students see the science as something they can do and understand.

Updated Content —

5 **Editing Your Genes.** The most exciting advances since this text's last edition have been applications of a new, easy-to-use tool called CRISPR that allows researchers to edit genes. As described in Section 11.4 on pages 199-200, the gene editing tool CRISPR is being used to treat human disease on many fronts, including developing a potential cure for AIDS, facilitating organ transplants from pigs, correcting disease-causing mutations like cystic fibrosis and sickle-cell disease, and genetically modifying a patient's own cells to fight leukemia.

6 **Geoengineering to Combat Global Warming.** With atmospheric CO^2 levels at a 2 million year high and attempts to reduce emissions faltering, attempts to engineer the earth's climate offer what may be our best hope of combating global warming. A so-called geoengineering approach, described in Section 6.1 on pages 104-105, removes CO^2 from the atmosphere by fertilizing earth's oceans to induce massive photosynthesis.

7 **Ebola Outbreak.** In 2014-2015 an outbreak of Ebola virus in three densely populated countries of West Africa infected over 24,000 people, killing half of them. Described in Section 16.3 on page 309, never has an Ebola outbreak affected so many people, in so many different places. New outbreaks in 2017 and 2018 have failed to spread as far, at least partially due to the development of an effective vaccine, but the potential for future epidemics remains a very real threat.

8 **The Search for Life on Other Planets.** For over twenty years astronomers have been detecting planets orbiting distant stars. As described in Section 16.2 on page 304, over ten thousand had been identified. Might any of them be enough like Earth to hold life? In 2016, astronomers found a candidate planet, orbiting a star 1,400 light-years from Earth. Labeled Kepler 452b, it circles a star very much like

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our sun. In the last two years they have reported finding several other "goldilocks" exoplanets much closer to earth.

9 **Role of Volcanoes in Mass Extinctions.** A large asteroid slammed into earth 66 million years ago (recent more accurate dating has revised the old "65 million years ago" date), the same time dinosaurs went extinct. Cause and effect? Perhaps not. Other mass extinctions are not correlated with similar impacts, while almost all ARE correlated with huge volcanic eruptions, as described in Section 18.8 on page 361. This was even true 66 million years ago. Perhaps in this instance the asteroid impact keyed off the volcanic eruption, like releasing a bear trap with a nudge.

10 **Meet the Denisovans.** When DNA was recovered from an ancient fingerbone found in Siberia, and the entire genome sequenced, the sequence obtained by researchers was human, but unlike either Neanderthal or modern humans -- a new species of human. Now called the Denisovans (after the name of the cave where the fingerbone was found), this ancient species of human has in the last few years been shown to have interbred with both Neanderthals and modern humans. Indeed, a recently-discovered fossil from the cave has proven to be the offspring of a Neanderthal-Denisovan mating!

11 **A Sense of Where You Are.** How is LeBron James able to sink a jump shot without looking at the basket? Seeking an answer to this question, explored in Section 28 on pages 574-575, has led to two recent Nobel prizes and a lot of rat races through mazes. Researchers were able to show that your brain keeps a "map" of where you are in three dimensions, and constantly updates it as you move through space.

Retained Features —

12 **The Learning Path.** Each chapter is broken into conceptual blocks, each block introduced with a targeted learning objective that pinpoints the concept or process that is the focus of the block. Each block is completed with a "putting the concept to work" question that requires the student to draw a conclusion from what he or she has learned.

13 **Inquiry and Analysis.** This feature appears at the end of all chapters and is intended to help students with developing their skills in analyzing and interpreting data.

14 **Linking Arrows.** Bold GREEN and BLUE Arrows point a student to an earlier place in the text or to an upcoming topic where an important related concept or finding has been or will be discussed.