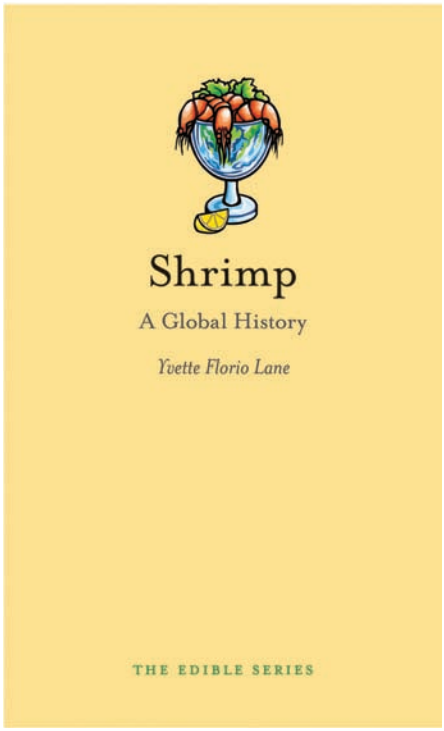

a cookbook, though twelve pages of recipes, including Lady Bird Johnson's Shrimp Squash Casserole, are included.

Shrimp, sometimes called prawn, usually depending on the circumstances and location, is the most consumed crustacean in the world. Like lobsters and other relatives in the Order Decapoda, shrimp have five pairs of legs under the carapace and five more swimmerets under the abdomen. They thrive in salt water as well as fresh water, both warm and cold.

People are attracted to shrimp in many ways, not just for their flavor. They are also significant in symbolism in the arts and literature. The shrimp has long been a symbol of luck and longevity in Asian cultures. Since it sheds its exoskeleton and appears to begin life afresh, it is also symbolic of birth and renewal. Along with lobster, shrimp designs are found on Samurai armor for good luck.

European artists have used shrimp in many of their endeavors. William Hogarth's *The Shrimp Girl* portrays a young woman who peddles shrimp on the street. Dorothea Sharp's Impressionist painting, *At the Seaside*, captures children collecting shrimp in nets. An early 20th century British postcard, *Seaside Specimens*, depicts a shrimp tail with a woman's head, sort of a crustacean mermaid.

A British writer, more than 200 years ago, noted that "many men's sweetest memories are connected with shrimps." William Shakespeare used the word "shrimp" to identify a "dwarfish creature." In *Henry VI, Part 1*, the Countess of Auvergne describes the Earl of Shrewsbury, saying, "It cannot be this weak and writhled shrimp should strike such terror to his enemies." *Seinfeld*, the American sitcom, in 1997 featured an episode in which a character, George, sat in front of a bowl of shrimp on a table in a conference room. Not paying much attention to what is going on in the room, George gobbles the shrimp, using both hands to fill his mouth. A coworker comments, "Hey George, the ocean called, they're running out of shrimp." The room bursts forth in laughter.

This book is especially light on the biology of shrimp, focusing more on its culinary and economic aspects. It tracks the culinary uses of shrimp through history and around the world—from about 25 centuries ago in China to Europe, Africa, and Middle America. Shrimp were important in the American economy, especially in the 20th century, but now farm-raised shrimp are a multibillion dollar industry in Asia. The history of preparing shrimp for marketing in the United States describes a sad story where women, children as young as three, immigrants, and African Americans were put to work peeling shrimp in conditions that were brutally inhumane.

The shrimp has even had an impact on religion. Many Jews believe that the Old Testament nutrition laws stated in Leviticus forbid the consumption of shellfish. Many Muslims consider shrimp consumption to be permitted by the Quran, but some believe that only shrimp may be eaten, whereas prawns are forbidden. A 19th century Christian minister got around the Old Testament laws by reasoning that the sea is loaded with organisms, many of which die every day. He felt that it would be better to use them for food, rather than having dead bodies polluting the water.

Part of Reaktion Books' ambitious *Edible* series, dedicated to food and drink, which documents various edible items related to plants and animals, from a natural and cultural history perspective, this exhaustively researched volume is appropriate for and may appeal to college or advanced high school readers. Though engagingly written and full of interesting information, the book may not be one for which there would be a good reason to include in a biology class library. It is profusely illustrated with captivating photographs and includes a timeline of beetles, endnote documentation of the text, a bibliography, a list of websites and associations, and an index.

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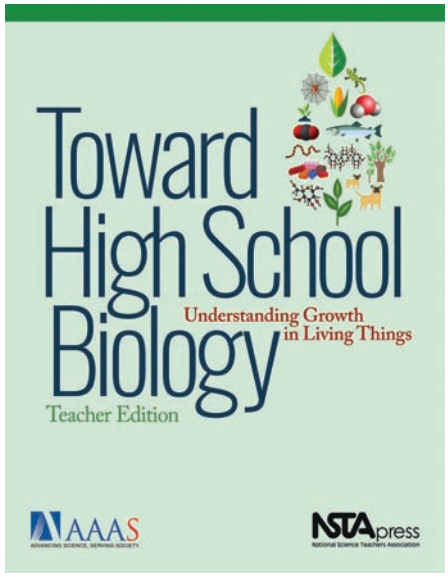

DYNAMIC CURRICULUM

Toward High School Biology: Understanding Growth in Living Things (Teacher Edition). By American Association for the Advancement of Science and the National Science Teachers Association. 2017. NSTA Press. (ISBN 978-1-68140-560-5) 427 pp. Paperback. $44.95.

Toward High School Biology is an entire unit of curriculum connecting the concepts of matter cycling with growth and repair of living structures. The teacher edition contains thorough plans, with chapter overviews, background knowledge, prerequisite knowledge, common misconceptions, and a storyline. Times for each portion of a lesson are provided down to the minute. For teachers who are less familiar with NGSS-aligned lessons and the use of phenomena, the plans are well scaffolded. Students are given the tools to construction complete explanations that include claim, evidence, and reasoning. Teacher Talk and Actions are broken down into minutes and include instructions about what students should be doing and how they might respond. For example: "Key Question (1 min) Introduce the Key Question: How are changes in the matter that makes up living and nonliving things similar? Usually, you will use the Key Question to elicit and probe student ideas" (p. 11). The contents of the book are broken into four chapters with a total of 19 lessons. The first chapter focuses on changes in matter and using models. Chapter 2 is about chemical reactions and conservation of mass. The third chapter brings in Life Science Standard LS1 as it connects monomers, polymers, and carbohydrate synthesis with photosynthesis. Chapter 4 balances this by relating amino acid to protein formation with growth and repair in animals.

One of the things I noticed about *Toward High School Biology* is the variety of examples across science disciplines. When working on the concept of monomers making up polymers, a physical science example of the synthesis of nylon strands is first demonstrated. This is compared to the polymerization of glucose into cellulose as well as protein monomers comprising spider silk. The connection between physical science and life science is a great way to emphasize patterns. Students build some of the reactions with models as well as watch a video or carry out the chemical reaction. Students are constantly working through the process of guided inquiry where they are asked about what happened.

Best teaching practices are built into the *Toward High School Biology* curriculum. Lessons spiral in content, and have students continually revising and developing their ideas. Phenomena are linked to tasks that involve collecting and analyzing data. Atoms, molecules, and chemical reactions are modeled in a variety of ways using ball-and-stick models as well as LEGO bricks. Support including videos, images, print materials, and research articles for the curriculum are provided on the book's Extras page at www.nsta.org/towardhsbio. Also on the Extras page is a sheet listing all of the materials and links to suppliers. Activities are designed for a variety of grouping from whole class, to pairs, to individuals. Students are continually asked to explore, reflect upon, and revisit ideas. Within the teacher edition are the answers to the student edition; these are available separately. The student resources are designed to be more heavily scaffolded in the first chapter, and less toward the end of the book.

Although *Toward High School Biology* was written for middle school, some of the material could be used for introduction or review at the high school level. As a high school biology teacher, I particularly liked the activities utilizing monomers and polymers in life science. I could see myself using them as a quick review before teaching photosynthesis, cellular respiration, and protein synthesis. The *Toward High School Biology* curriculum is an excellent model curriculum that encompasses Disciplinary Core Ideas (DCI), Science Practices, Cross Cutting Concepts (CCC), and Performance Expectations (PE) from the Next Generation Science Standards.

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