

BIOZONE's response to Texas Resource Review of:

# BIOLOGY for Texas

BIOZONE would like to thank the Texas Resource Review panel for their careful and well executed review process. We also commend the Texas Education Agency for their commitment to provision of quality instructional materials to students.

## The BIOZONE Approach

BIOZONE has been an innovator in High School science education for over 30 years. We seek to provide students with a well-rounded science education that stimulates them to pursue a lifelong interest in the world around them. BIOZONE prides itself on listening to educators and students to ensure that our resources are pedagogically sound, while keeping the needs of students front and center. BIOZONE's *Biology for Texas* is a program delivered in both print and identical digital formats (the latter not reviewed by TEA or TRR). This program is designed to deliver both the Texas Essential Knowledge and Skills and the English Language Proficiency Skills in an engaging manner. A tab system identifies where the scientific and engineering practices TEKS and science concepts TEKS are covered. English Language Proficiency Standards (ELPS) are integrated throughout in a way that requires students to think critically, understand and learn new concepts, process complex academic material, and interact and communicate in English within the science classroom. Content is carefully scaffolded using the 5Es instructional approach. This ensures that student interaction and understanding of the required TEKS takes place within a meaningful learning sequence. Information is presented to students through clear, engaging graphics and short blocks of text that do not overwhelm the reader. By completing the activities, students will have engaged with and covered the specific TEKS required to demonstrate understanding of the curriculum.

BIOZONE's *Biology for Texas* is a complete teaching program and includes a comprehensive **Implementation Guide** which contains a scope & sequence, and lesson plans. **Presentation Slides** are available, which summarize the content of each of the activities in the book, allowing teachers flexibility in their mode of content delivery. BIOZONE also provides free access to our digital **Resource Hub** containing 3D models; weblinks to Open Educational Resources, including relevant, curated videos; and interactives. The **Resource Hub** also provides support for caregivers, including full access to the student version of the book in digital format.

## Phenomena as Content Anchors

BIOZONE chose to introduce each chapter with a content anchor. This covers a scientific phenomenon related to the knowledge and skills that will be covered in the chapter content to engage students and promote enquiry. The authors specifically chose examples that appeal to a broad range of students, with which they may have some familiarity, but cannot yet fully explain. Where possible, students are asked to relate their own prior knowledge to the content anchor. This gives teachers an opportunity to understand what students already know about ideas that will subsequently be presented. The content anchor is revisited at the end of each chapter and asks students to apply the knowledge they have gained from their learning to fully explain it. Through observations, discussion with peers, and analysis, students are describing and explaining the phenomena they investigated.



## Assessment

BIOZONE’s interactive worktext approach allows students to record their answers in context and provide them with a record of work for quick and easy revision. These formative assessments are a mix of question types, including direct answer, data presentation and analysis, and research-based, that request students to choose specific areas and present their information in a variety of ways. A more formal summative assessment, designed with the STAAR exam in mind, concludes each chapter, allowing teachers to assess students’ understanding of the chapter content more formally.

According to educational research (Hattie, J. (2008), Visible Learning), one of the most successful pedagogical tools leading to student academic achievement is self-reported grades. With teacher guidance, answers to questions can be provided to the whole class at the completion of the activity, or in smaller groups during the lesson, and students are then able to assess their responses and report on their overall grade for each activity, linked to the corresponding Learning Outcome.

Digital Student Progress Trackers, downloadable from the Resource Hub are available in both individual student and teacher versions. These allow a student to self-report their grades for each Learning Outcome leading to a specific Student Expectation, as part of the Texas Essential Knowledge and Skills (TEKS) for Biology. The students can track their progress as they move through each TEKS, identify patterns in their understanding, and be able to respond by working with more scaffolding, extension, or targeted revision. Teachers can collate the self-reported grades on their Teacher Version of the Student Progress Tracker, and easily identify both individual student and whole class trends with the embedded data analysis tools.

The Teacher edition provides full answers to all questions except for those that incorporate research-based activities. Although Texas Resource Review would like to have seen a more formal assessment rubric provided to teachers for research-based activities, we felt that it was very difficult to predict all possible student answers for such questions. Although we were disappointed to have lost a point in the review process for this decision, we stand by our approach.

## BIOZONE WORLD – Our New Digital Platform

BIOZONE is also delighted to present ***Biology for Texas*** on BIOZONE WORLD: our new digital platform for content delivery. Although not reviewed by TEA and TRR, this digital replica is identical to the pages in the printed book. Online access allows students to interact directly with the book’s content, including the ability to compose answers to questions and submit them for review. BIOZONE WORLD is designed with accessibility in mind and offers a range of features, including translation into multiple languages in real time, one text block at a time. This is particularly useful to those students for whom English is not their first language.

## Summary

BIOZONE acknowledges the efforts of both the Texas Education Agency and the team at Texas Resource Review for their comprehensive and insightful review of ***Biology for Texas***. We aim to continually improve the quality of our products in response to both reviewer and market feedback.

## References

Hattie, J. 2008. Visible Learning: A Synthesis of over 800 Meta-Analyses Related to Achievement.

Richard Allan  
PUBLISHER  
**BIOZONE International**

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