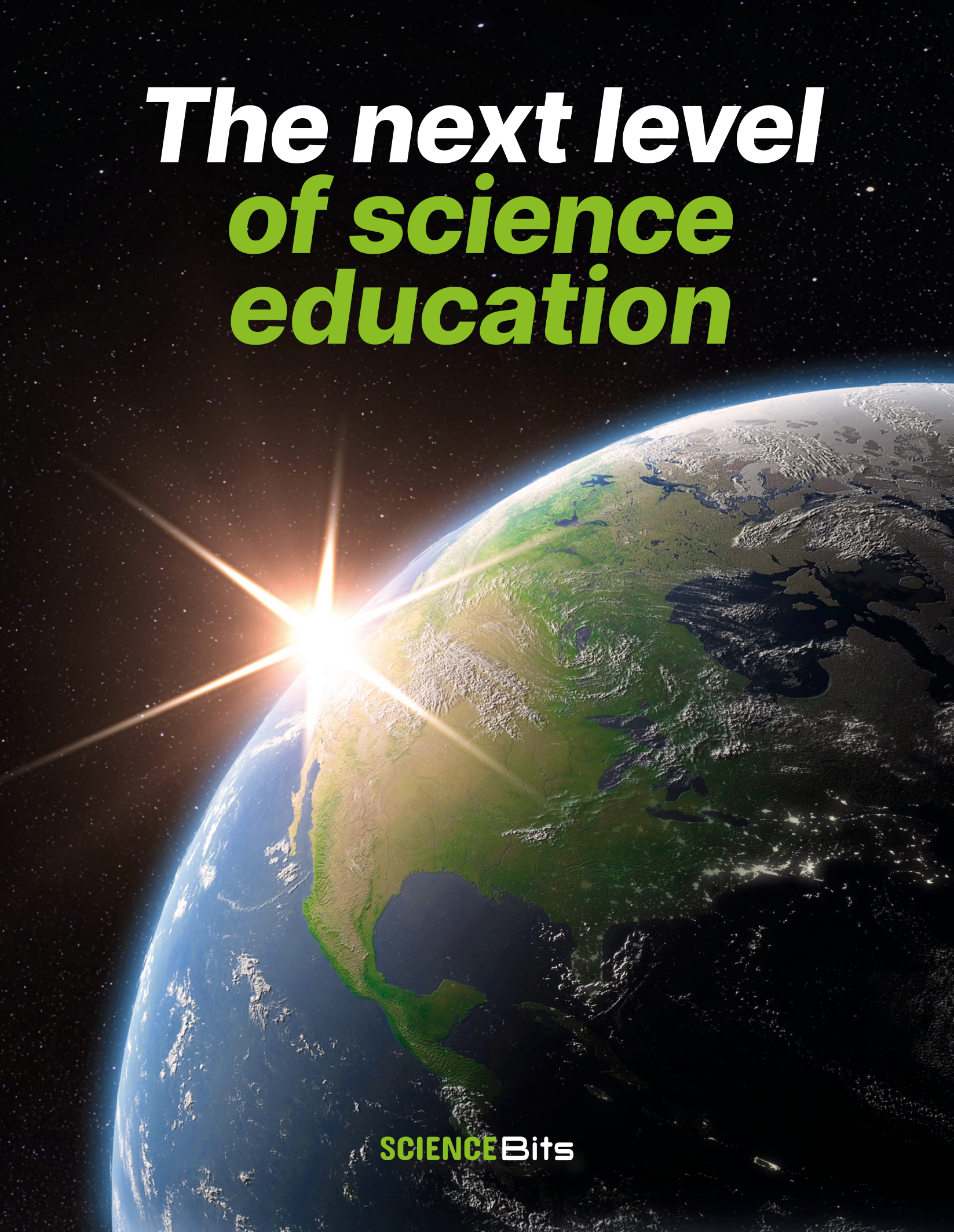
The next level of science education



SCIENCE Bits

SCIENCE Bits

Let **Science Bits** be your guide as you implement **three-dimensional instruction in Texas**.

With **Science Bits**, middle school students engage in science and engineering practices to **build an understanding of natural phenomena** while they learn core scientific ideas and identify recurring themes and concepts **in multiple real-life contexts**.

Science Bits lessons include all the elements of **a complete 5E constructivist learning process**, from engaging students to evaluating them, using **high-quality multimedia interactive content**.

3,500
Interactive activities

+1,500
Videos and Animations

+600
Lab Simulations

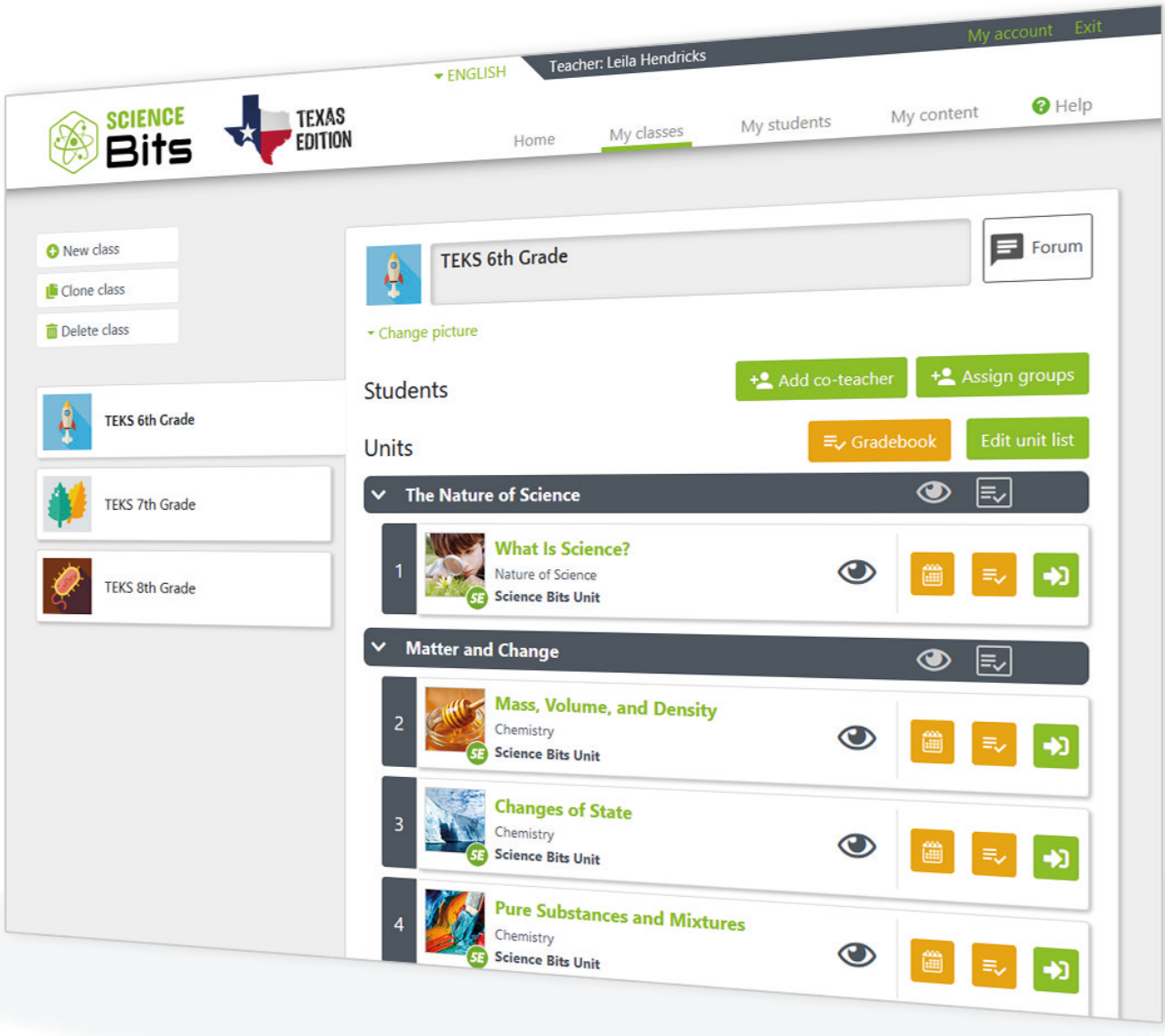
We invite you to discover the world.

Watch the video
Let's Learn Science

Observe
Explore
Feel
Experiment
Think
Understand
Imagine
Create
Share

Discover what the world is like and how it works!

Why Science Bits for Texas districts and teachers?



- Materials are **fully aligned to the TEKS and the ELPS** for Science Grades 6-8.
- Teachers can arrange **customized learning sequences with differentiated content** to support diverse student needs.
- **Fully interactive content has real impact on student learning** and prepares students for STAAR online assessments.
- Learning objectives integrate **science content strands, recurring themes and concepts, and scientific and engineering practices** through virtual and hands-on practices supported by interactive resources.
- The **nature of science and research** is integrated into every phase of **a learning-by-doing approach to science teaching**.

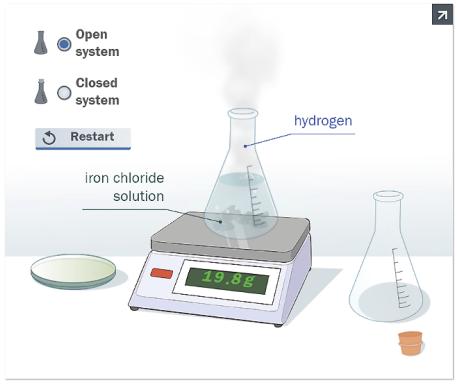
Science Bits Instr

CONSERVATION OF MASS

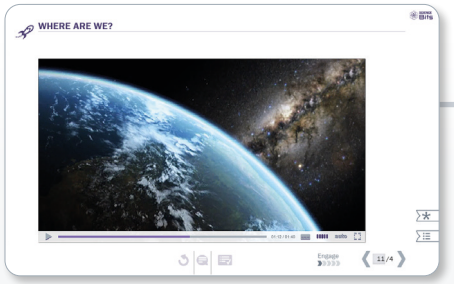
In any change, be it physical or chemical, **the amount of matter is conserved**: the mass of the substances before the reaction is always the same as the mass of the substances after the reaction.

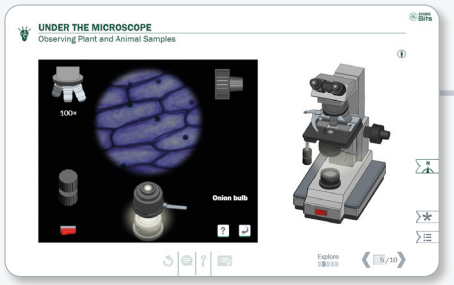
However, if we study changes occurring in an open system, it might seem that the mass is not conserved. Why is that?

- The substances in an **open system** freely exchange matter with its surroundings. This way, the amount of matter in the system may change.
- In contrast, the substances in a **closed system** cannot exchange matter with its surroundings. Therefore, the amount of matter in the system remains constant.



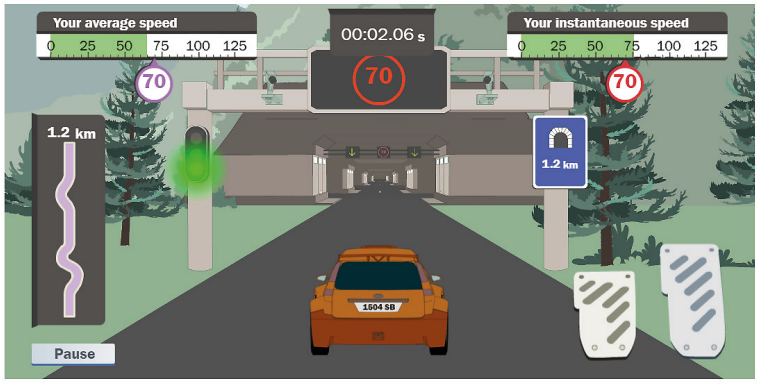
Explain 1/3



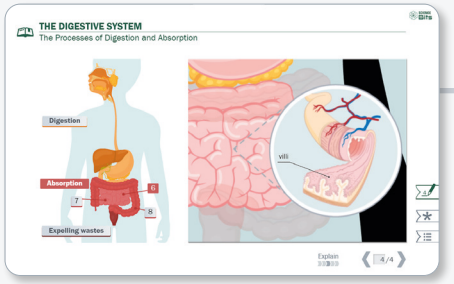


SPEED UNDER CONTROL

Test Yourself



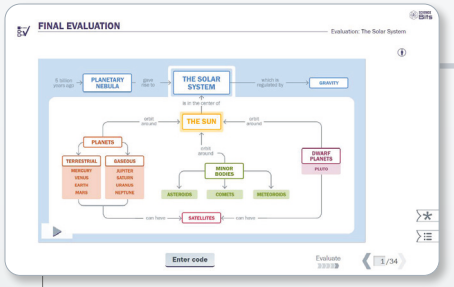
Elaborate 3/8



A BASE ON MARS

Designing the Base

Explore 7/15



Screenshots

Samples of 5E lessons from Science Grades 6-8.

uctional Model

3-Dimensional Learning

Engage

Get students' attention and interest.

An engaging video presents students with a problem or phenomenon they can't explain with their current ideas. Next, an activity about the video **activates students' prior knowledge**.

Explore

Construct new knowledge through inquiry.

Students explore the phenomenon, discuss ideas, and make connections through inquiry-based activities. The teacher becomes a facilitator who listens, observes, and guides students to their understanding.

Explain

Formally introduce concepts and activities.

Students explain their conceptual understanding of the phenomenon and gain deeper understanding of the concept through interactive sensemaking activities.

Elaborate

Apply concepts and practices.

Students elaborate on their new scientific knowledge in a problem-based activity using recurring themes and concepts.

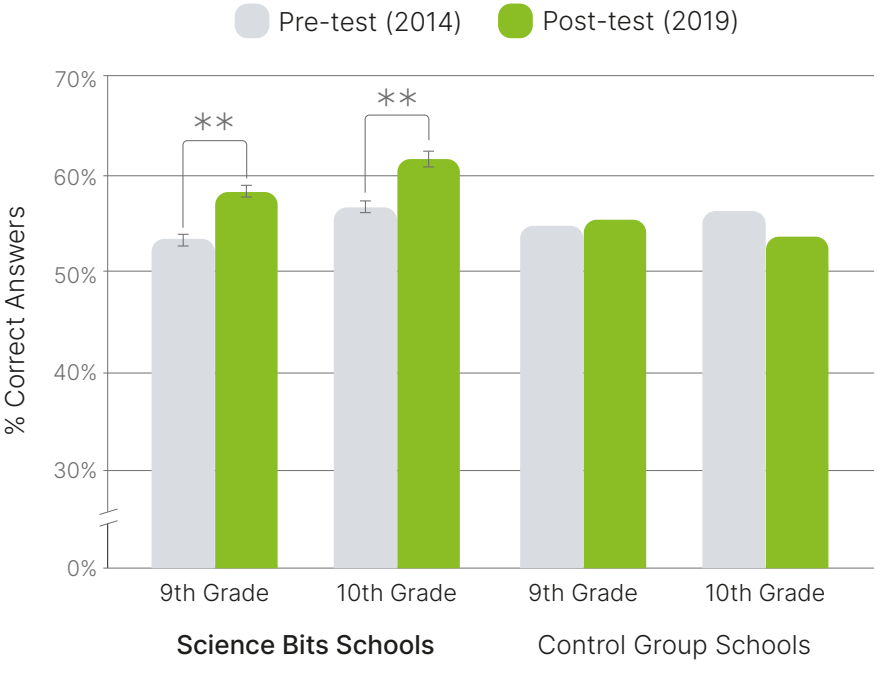
✓ Evaluate

Review and evaluate new knowledge.

The unit concludes with a review and final evaluation. **A self-correcting test is a practical application of science content and practices**. The online format prepares students for the STAAR assessment.

Improve student understanding

Science Bits is proven to **significantly improve student understanding of key scientific concepts** in long-term scientific studies.



Read the article
A new scientific study supports the effectiveness of Science Bits

Easy to configure

With **Science Bits, teachers can arrange their own learning sequences and even provide different content to different groups of students** to suit diverse levels and backgrounds. There are several levels of content:

Complete lessons
Designed to cover a minimum of 8 class periods.

2- to 5-hour lessons
Lessons designed to cover 2 to 5 class periods.

1-hour lessons
Activities designed to cover one class period.

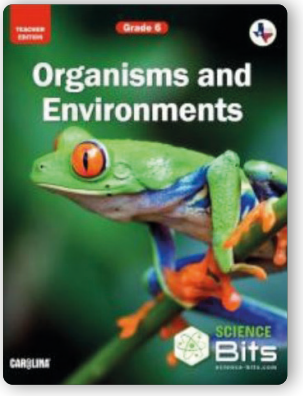
Short activities and lesson
Designed to be conducted in under an hour.

Complete lessons provide full learning sequences that ensure conceptual change and learning with understanding. **Shorter lessons** constitute pieces of the learning sequence that are organized according to their subject area and learning goals. Among others, there are **lessons designed to provide an appealing introduction** to the new concepts that will be developed later, **lessons that provide inquiry-based approaches** to concepts, **activities that expand** upon previously introduced knowledge, and **lessons that review and evaluate** the knowledge acquired.

Features

- Instruction is **grounded in learning theory and based on research evidence** on how students learn.
- Phenomenon-driven activities introduce students to science practices while they **learn to solve real-world problems**.
- Lessons are focused on **recurring themes and concepts** and Science TEKS.
- Thousands of **interactive resources for active learning**: 3D models, videos, animations, virtual experiments, and simulations.
- **Self-correcting activities**, tests, and other resources for effective learning.
- User-friendly diagnostic tools that accurately **track student achievement** to give them continuous feedback.
- **Complementary Carolina Essentials™ kits** provide hands-on activities.

- **Print teacher resources** help teachers successfully implement lessons.
- **Print student edition** includes all content and activities to support all students.
- All contents and instructional materials are provided in **English and Spanish**.



Benefits

- Science Bits is the **easiest and most reliable way to implement 3-dimensional instruction** in your science classes.
- **Real world connections to scientific concepts** engage students in learning science.
- **Multimedia and interactive resources enhance student motivation** and make concept comprehension easier while they allow active engagement in scientific practices.
- **Complete key resources and activity guides** are provided at every step to help teachers successfully implement the activities in their classes.

SCIENCE Bits

For more information

Deborah Linscomb
Regional Sales Manager
deborah.linscomb@carolina.com
336.263.7940

Stephanie Solofra
Curriculum Support Manager
stephanie.solofra@carolina.com
336.214.2583

SCIENCE Bits

CAROLINA®
www.carolina.com/ScienceBitsTX