

Research & Standards

Typical textbooks contain abstract vocabulary definitions, complex sentence structures, and reading levels that are often above the level of the students the book is intended for. In fact, “many classrooms use textbooks written two or more years above the average grade level of their students...[and] even students who read on grade level may have trouble learning from their textbooks” (Allington, 2002). If on-level students tend to flounder with typical textbooks, imagine what difficulties the struggling readers in the same classroom have. As Sousa states, “The students’ lack of confidence in reading can affect all their school work” (2001).

Modified instructional strategies are critical to improving reading comprehension. Sousa notes that teachers should “consider modifying instructional strategies to meet the various learning styles and abilities of students with learning problems.” Among the strategies he suggests are to “break the assignments into smaller tasks, adjust the reading level of the classroom material, relate the new learning to students’ experiences, reduce the number of concepts presented at one time,...and provide practice test questions for study” (2001). Waldron states “students with learning differences often have short attention spans and are so easily distracted that concentration is eroded. They simply cannot handle the same amount of information as students with longer attention spans. For these students, briefer assignments with frequent breaks work best to sustain their on-task behaviors” (1992).

Each of these research-based strategies has been integrated into *Earth and Space Science*. The content is broken into small, manageable sections. Students will find the short sections of text easy to understand due to the controlled 3.0–4.5 reading level. Examples in each section relate the new material to the students’ experience.

Earth and Space Science meets both state and national science standards, including the National Science Education Standards produced by the National Research Council. (These goals for achievement are in the process of being implemented in classrooms across the country by the National Science Teachers Association.) By reading the Student Text and completing the corresponding activities, students will master many of the key knowledge criteria of the National Science Education Standards in the content area of earth and space science for grades 5–12, including:

- Properties, theories, and movement of tectonic plates
- Landforms that result from constructive and destructive forces within the earth
- The rock cycle
- Weathering and erosion
- Soil formation
- The water cycle
- The atmosphere as a mixture of nitrogen, oxygen, and trace gases that include water vapor

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- Weather and climate and their effects on land ecosystems
- The sun and its role in the solar system
- The planets and other heavenly bodies
- Earth as a system with the moon and the sun

Allington, Richard. "You Can't Learn Much from Books You Can't Read." *Educational Leadership*. 60 (2002): 16–19.

The National Academy of Science. "National Science Education Standards." The National Academics Press, 2004. <http://www.nap.edu/readingroom/books/nses/html/6a.html>

Sousa, D.A. (2001). *How the Special Needs Brain Learns*. Thousand Oaks, CA: Corwin Press, Inc.

Waldron, K.A. (1992). *Teaching Students With Learning Disabilities*. San Diego, CA: Singular Publishing Group, Inc.