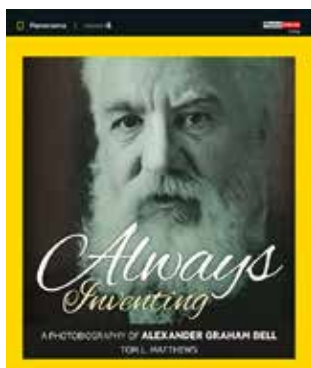**Jennifer D. Turner, Ph.D.**

Studying Different Genres

by Jennifer Turner

Science textbooks are perhaps the most frequently used reading materials for content instruction. In many elementary classrooms, students are expected to read, comprehend, and learn new scientific information primarily from content area textbooks.

Yet textbooks are not the only types of informational texts that can present important science content to elementary learners. Literary nonfiction texts present real-world content through narrative and/or highly-stylistic writing and include biographies, memoirs, commentaries, speeches, opinion pieces, personal essays, and scientific, historical, or technical accounts (Maloch & Bomer, 2013). In addition, expository texts, procedural texts, concept books, and reference materials are important nonfiction texts for teaching science content (Duke, 2004).

Fiction can also play an integral role in science teaching and learning. Professional organizations like the National Science Teachers Association (2016) recognize and support the use of narrative texts (e.g., folktales, trade books, historical fiction) to teach science content. Fiction texts are especially important because they "provide a real-world context for learning content area material" (Bintz & Ciecierski, 2017, p. 62). Poetry creatively uses poetic devices to integrate science content, present fun facts, and teach children about the natural world (Frye, Trathen, & Schlagal, 2010; Kesler, 2017).

A growing number of hybrid texts are also used to teach science content in elementary classrooms. Hybrid texts creatively integrate informational and narrative genres into a single text (Bintz & Ciecierski, 2017; Donovan & Smolkin, 2002). Hybrid texts are also multimodal, as both the story and content are presented through multiple design elements such as images, fonts, insets, diagrams, and other text structures (Bintz & Ciecierski, 2017; Donovan & Smolkin, 2002).

Panorama presents science content to elementary students through a wide array of informational texts, fiction, poetry, and hybrid texts. Research has shown that using narrative and informational text to teach content puts students on the pathway to college and career success (Bintz & Ciecierski, 2017; Turner & Danridge, 2014). *Panorama* builds content instruction around rich multi-genre materials to maximize student learning by promoting comprehension of complex disciplinary texts, building disciplinary knowledge, advancing 21st century skills, facilitating collaborative conversations, and fostering cultural competence.

Promoting Comprehension of Complex Disciplinary Texts

Students learn content more effectively when they are able to independently read and comprehend complex informational and narrative texts. Explicitly teaching comprehension strategies, including summarizing, inferencing, questioning, visualizing, and self-monitoring, enhances the ways that students make meaning of texts and learn new content (Duke, 2004). Close reading strategies help students to:

- determine their own reading purposes,
- critically examine text structures (e.g., vocabulary, organization, argument, genre features),
- analyze author's craft,
- expand their schema,
- work through complex themes or ideas, and
- build stamina and resilience in reading

—all of which deepen their understanding of science content (Fisher & Frey, 2012). Genre diversity also sparks students' curiosity and interest and sustains their engagement with more challenging science content (Camp, 2000; Cervetti & Pearson, 2012).
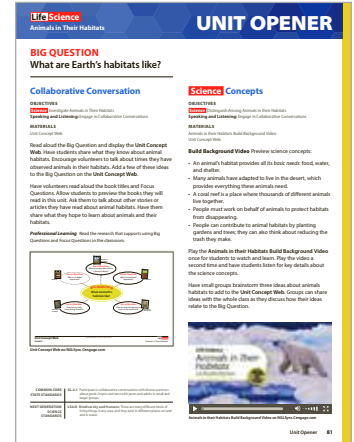
Building Disciplinary Knowledge

Students build strong content knowledge and vocabulary in science by reading varying genres. Informational and fiction materials often expose elementary students to sophisticated concepts and vocabulary and provide multiple opportunities for them to recognize relationships between words and their definitions. When students read informational and narrative texts that are thematically connected, students make intertextual links, unpack layered meanings, and build conceptual understandings (Barnes, Grifenhagen, & Dickinson, 2016; Camp, 2000). Reading and writing across narrative and informational texts also helps students understand how knowledge and expertise is represented in STEM fields (Fisher & Frey, 2015; Cervetti, & Pearson, 2012). The National Geographic Learning Framework referenced in *Panorama* promotes strong science knowledge development for students so that they understand the human journey, our changing planet, and wildlife and wild places.

Advancing 21st Century Skills

Students develop critical thinking skills by reading narrative and informational genres in science. Hybrid texts foster the critical thinking and viewing skills that students need to make meaning from content embedded in visual information and design features (Bintz & Ciecierski, 2017). Narrative and informational genres also engage students in solving real-world problems, creative thinking, and authentic inquiry (Ebbers, 2002). Key 21st century skills are integral to the National Geographic Learning Framework, which encourages students to explore their world using observation, communication, collaboration, and problem-solving skills.

Facilitating Collaborative Conversations

Students engage in productive conversations inspired by content-rich informational and fiction texts. Teacher-led collaborative conversations make teachers' thinking visible and introduce students to the "big ideas" in science (Fisher & Frey, 2015). Collaborative conversations among peers are also critical for content learning, because they provide sustained opportunities for students to try out new academic language, to investigate and inquire, and to work together to determine disciplinary meaning (Barnes, Grifenhagen, & Dickinson, 2016; Cervetti & Pearson, 2012; Fisher & Frey, 2015).

Fostering Cultural Competence

Students develop cultural competence when they read informational and narrative texts about diverse people, traditions, and experiences. When students engage with diverse narrative and informational texts in science, they develop empathy, respect, and social justice orientations toward others (Roseberry & Warren, 2008; Turner, 2016). Teaching science with a wide array of texts also supports content learning by helping students make connections to genres situated within their homes and communities, building on their cultural and linguistic assets, and leveraging their cultural funds of knowledge (Kganesto, 2016; Roseberry & Warren, 2008; Strachan, 2014; Turner, 2016). These cross-cultural competencies foster the National Geographic Learning Framework attitudes related to responsibility, as explorers are concerned about and respect different people, cultural resources, and the natural world.

Moving beyond textbook-driven content instruction presents exciting opportunities for students to use literacy to acquire disciplinary knowledge and engage in disciplinary inquiry. *Panorama* offers a rich variety of genres to promote reading, writing, and talking—core science practices that help young learners become explorers who make sense of and care for the world around them.

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