

Inquiry-Based Research Tool Helps Boost Science—and Reading—Proficiency

At Woodham Middle School in Escambia County, Fla., science enrichment teacher Larry Hanna is using an online curriculum service called *Britannica Pathways: Science* to help struggling students become proficient in science.

In using the Britannica product, Hanna's sixth- through eighth-grade students are learning how the scientific method works—and their reading skills are improving as well.

Woodham Middle School has a very high poverty rate, with nearly 90 percent of students qualifying for federal Title I status. Add in the fact that science often isn't given a high priority in elementary school, and "we have sixth-graders who come in with very little science background," Hanna said.

Two years ago, only 26 percent of Woodham students were considered proficient in science, according to the state's end-of-year science exam. That was the worst result among Escambia County's middle schools—and Hanna was tasked with turning things around.

Predict. Investigate. Conclude.

Hanna's science enrichment class, taught in the school's computer lab, supplements the teaching that students get in their traditional science classes. The core instructional resource he uses is *Britannica Pathways: Science*, an inquiry-based product that covers Earth, space, life, and physical science topics for middle-school students.

The curriculum is organized into 10 units, and each unit consists of 10 lessons. Every lesson starts with an "essential question" that students must predict an answer to, such as: "Why does the sun appear to rise in the east?"

After students have explained their prediction, they look for evidence using Britannica's safe, curated research tools, such as encyclopedia articles, videos, and images. Hanna asks his students to explore at least five different resources on the topic. Students analyze this information, draw conclusions based on the evidence they find, and write arguments to support their claims.

Predict, investigate, conclude: "That's exactly what scientists do all the time," Hanna said. The process "matches the scientific method," and it develops students' critical thinking skills as well as their knowledge of science.

'A marked improvement'

After the first year of Hanna's science enrichment course, the percentage of Woodham students considered proficient in science rose from 26 percent to 36 percent—



Students have found Britannica Pathways: Science to be engaging, and "we have seen a marked improvement in their skills," said science enrichment teacher Larry Hanna.

and school leaders predict an even bigger leap this year. "Several students missed scoring at a proficient level by just one question," he said.

Hanna has noticed a valuable side effect of using the Britannica product: His students' reading skills also are improving. "They're not used to reading scientific texts," he said, "and of course that's what the encyclopedia articles are."

Britannica Pathways: Science includes a number of reading supports to help students understand scientific language, such as a read-aloud feature and a quick-click dictionary. As the Common Core standards place more emphasis on reading complex nonfiction texts, Woodham students will be well positioned for this increased rigor.

Hanna said he appreciates the high degree of insight the product gives him into his students' work. "All I have to do is click a button that says 'View,' and I can see every answer the students have given," he said. "It gives me a lot of power."

Student engagement is high, he said, "and we have seen a marked improvement in their skills."

Britannica Pathways: Science
<http://pathways.eb.com>

