



PHOTOS BY TOBY JORRIN/SPECIAL TO EXPRESS-NEWS

Mike Burrell (right), manager of Cave Without a Name in Boerne, indicates geological formations as he leads South San Antonio Independent School District teachers on a tour of the cave. Organizers hope to offer the workshop to teachers citywide next year.

Science goes underground

South San teachers visit caves to do a better job presenting information about the Edwards Aquifer.

BY JEANNE RUSSELL
EXPRESS-NEWS STAFF WRITER

Because students learn best when they think it matters, 30 South San teachers spent Saturday exploring how to make San Antonio's water source come alive in their classes.

They visited the Cave Without a Name and Boerne's Cibolo Nature Center, where South San science coordinator Joann De Luna offered tips on how to make models of the Edwards Aquifer using recycled water bottles, sand and gravel.

"Some of them are tactile; they need to touch it and feel it," Kazen Middle School teacher Susie Benavidez said.

Like other teachers, Benavidez

said she craves opportunities to make required science ideas real for kids and to expose them to a natural world that, despite its proximity, remains unexplored.

"Most of them will never see it if we don't show it to them," said Valarie Aktepe, a 10th grade science teacher at South San High School.

The Edwards Aquifer is a karst limestone formation, porous enough to hold water and allow it to move. Fights over protecting the quality and quantity of its water have divided San Antonio and other regional users that depend on it. That means teachers have a responsibility to inform kids, De

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Dean Mendoza (left), South San High School teacher, ducks as he goes through a passage in Cave Without a Name.

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Texas City Attorneys Foundation, which have filed pleadings aligned with oppo- site sides.

"To allow a quorum of a governmen- tal body to deliberate public policy is- sues outside the view of the public is an invitation to closed government," wrote Joe Larsen, a lawyer for the Freedom of Information Foundation.

The result, he wrote, would "turn open meetings into abbreviated sessions where public officials simply approved matters they had previously deliberated by e-mail, by telephone or in closed ses- sions to which no public access was per- mitted."

The city attorneys group, however, said the law is so unclear that they can- not give reasonable advice to their cli- ents.

"If prosecutors cannot agree on how to enforce a criminal provision, how is a city attorney supposed to advise city of- ficials as to how to stay out of jail?" wrote Scott Houston, the general coun- sel for the group.

But Brown, the prosecutor who set things in motion a year ago with the criminal case, said there is nothing wrong with the Texas Open Meetings Act and that he has no regrets about charging Rangra and Elms.

He predicted their civil suit would fail.

"I think that the lawsuit is absolutely baseless. The act as written is appropri- ate and enforceable," said Brown. "These statutes have been on the books for years, and to my knowledge, there has never been one that has been de- clared unconstitutional."

Given the same set of facts and the same law, Brown said he would do it all over again.

"Given another e-mail case, I'd pre- sent it to a grand jury I wouldn't do any- thing different, and I sleep well at night."

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TOBY JORRIN/SPECIAL TO EXPRESS-NEWS

South San teachers feel the constant draft of air flowing through a shaft into the cave as they tour Cave Without a Name. They also visited the Cibolo Nature Center.

Science goes underground for better look at aquifer

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Luna said.

Most textbooks cover only the science of the more typical sand and gravel aquifers, said Annalisa Peace, executive director of the Greater Edwards Aquifer Alliance, who co-taught the workshop, which was supported by a grant from Boeing.

Peace, who focused on effects hu- mans have on the aquifer, hopes to offer the workshop to teachers citywide next year.

Using food coloring to tint the water, De Luna graphically illustrated the tiny amount of the world's water that is fresh, compared with salt water.

She dripped hydrochloric acid on the limestone for another "good visual" of how water forms sinkholes, part of a summary of the creation of the inter- locking underground rivers that form San Antonio's primary source of water.

As she spoke, she touched on con- cepts such as porosity, solubility and permeability that Texas teachers are re- quired to cover. She wrapped up by pouring colored water through a model showing the two types of aquifers side by side.

The green water remained artificial and bright in both, eliminating any no- tion that an aquifer filters, or cleans, the water.

With books, South San High School teacher Paul Pearson said, "you can tell them, you can let them read about it, but their eyes glaze over."

In contrast, he said, his students still are talking about last year's weeklong trip to Big Bend.

"One of the things we need is less book learning and more field trips," said Pearson, who praised the work- shop for bridging required concepts with hands-on tactics to drive meaning home for students.

Such trips are hard-won, the teachers said. Benavidez vowed to find grant money to visit the cave because, she said, "exposure is so necessary. Without it they can't even fathom what's out there."

The teachers visited the cave first, and as a result, the workshop ran late. Perhaps learning much as their stu- dents do, they resisted leaving the stalactites and stalagmites to go sit at ta- bles and chairs.

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