

GREEN LIFE

Science class delves into art of biodiesel

By Ryan Geddes
SPECIAL TO THE OREGONIAN

In a cramped concrete room filled with chemicals, hoses, pumps and valves, Brian Smithers looks like an eccentric inventor, scribbling calculations on a wipe board and giving instructions to assistants in white coats.

The laboratory looks like a bunker and feels like your tinkerer uncle's basement, but it's actually the site of Open Meadow Middle School's bio-fuel and fuel cells class.

Smithers, 29, created the hands-on program to teach middle-schoolers about science by making biodiesel out of recycled vegetable oil.

"That's the smell of science," says Smithers, as Alex Bella, 12, pumps pungent methanol out of a metal drum and into a plastic container. There's a col-

lective groan as the smell reaches the others.

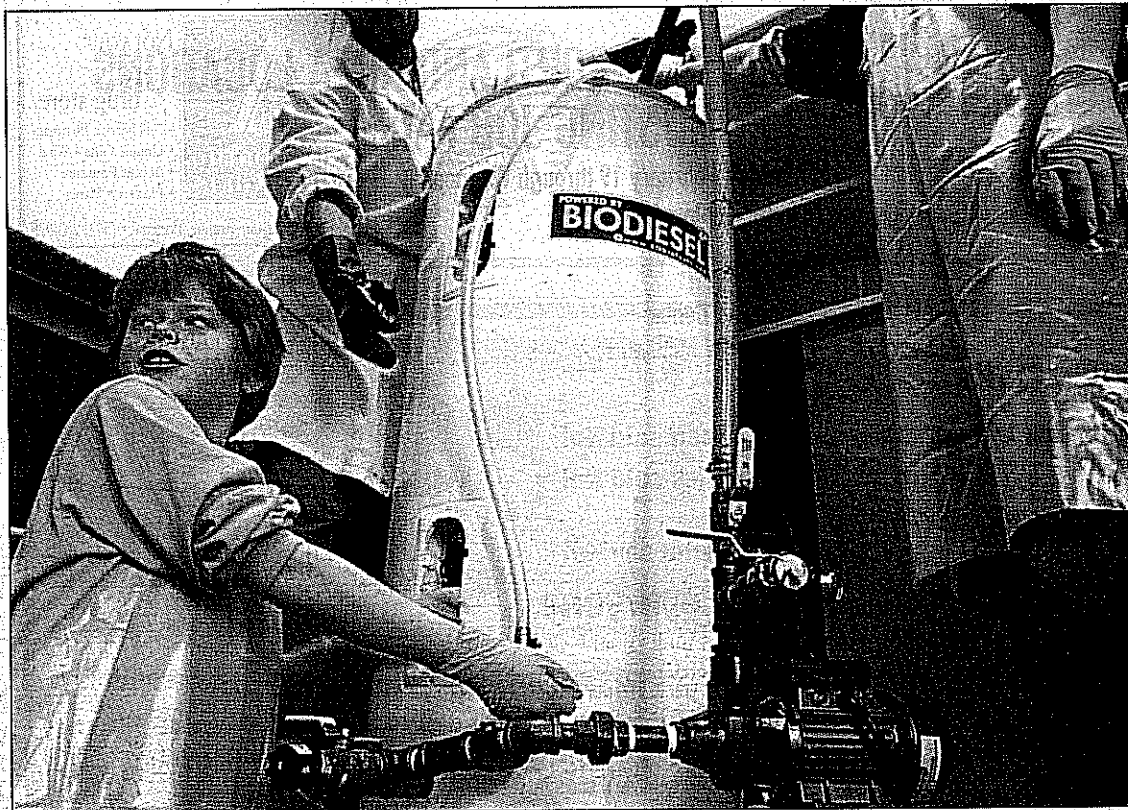
Over at one of the titration stations, where the students analyze chemical reactions, Dominic Luster, 14, studies pink liquid in a beaker.

"It's fun, but I just don't like the smell," he says, when asked what he thinks of lab work. Still, he says, he'd rather be here than in the classroom.

Rick Wallace, an energy analyst at the Oregon Department of Energy, says use of biodiesel to fuel cars and heat homes has grown "by leaps and bounds in the past two years."

Although the department does not yet have hard numbers on biofuel growth in Oregon, Wallace says production capacity is increasing statewide.

Smithers' class got its start in May, when Toyota Tapestry and



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Patrick Maher, 11, turns the levers to start mixing methanol with vegetable oil during a science class at Open Meadow Middle School. Instructor Brian Smithers (upper left) and student Anthony Tyrrell, 13, get the methanol flowing into the pipeline to mix with the vegetable oil to make biodiesel.

the National Science Teachers Association awarded Smithers a \$10,000 grant to gather used cooking oil from restaurants and turn it into usable biofuel. The students started with oil from Arby's and switched to Higgins restaurant.

"I pretty much spent the summer building the (fuel) processor. It's a converted hot water heater, which I gutted and plumbed specially," says Smithers, who uses pure B100 biodiesel fuel in his 1999 Volkswagen Jetta. His goal is to

eventually use the class's fuel to power Open Meadow's vans.

A byproduct of turning vegetable oil into biodiesel is glycerin soap. It's headed to the school's restrooms. ■

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