



Paint roofs white, says Jesuit student

Fourteen-year-old earns third place in science contest

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Nikita Gaurav's science project, "Going Green with White Roofs," helped her finish third in the National Discovery Education 3M Young Scientist Challenge in New York.

Nikita Gaurav figured that painting rooftops white could save energy, and she proved it.

The 14-year-old from Beaverton, a Jesuit High School freshman, researched the idea for a science project dubbed "Going Green with White Roofs." Last month, Gaurav's work earned her a top-three finish in the Discovery Education 3M Young Scientist Challenge, a national competition held in New York City.

Gaurav is interested in painting, science and architecture, so it was only natural that she come up with an idea that combined several of her interests.

Gaurav wanted to see if using infrared, opaque, white paint on a rooftop would reflect sunlight and keep the home cooler. To test her hypothesis, she built two boxes, lined them with insulation and made four rooftops, two with black shingles and two painted white. She then placed a 300-watt lamp 6 inches above the roofs for a three-hour period, to see how much heat would be absorbed through the roof into the boxes.

Several trials showed that she was onto something.

"Having a white roof is a simple way to reflect energy and help improve the environment," Gaurav says.

Keeping a home cooler in the summer is one way to save energy used for air conditioning. But don't people want their roofs to absorb more sun in the winter?

It turns out that most homes with white roofs can save more energy on air conditioning in the summer than they lose in the winter. This comes from President Obama's Energy Secretary Steven Chu, who is pushing the idea of white roofs.

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On balance, Chu and others say there's a net reduction in energy bills and greenhouse gases.

Gaurav was the only West Coast finalist in the national science competition. She topped seven other finalists by demonstrating her creativity in a series of individual challenges focused on the science of everyday life. Her work spanned topics of restoration, purification and building design. She also came up with an idea for an invention that would prevent water from entering and damaging electronic devices.

So has Nikita convinced her parents Venkat and Asha Gaurav to paint the roof of their family home?

"Not yet," she says.

"We also have to get approval from the homeowners association."

To see Gaurav's video of her research project, check www.youngscientistchallenge.com.