

# Fifth-grader creates dog feeder

by Sarah Catalano

The ingredients to a perfect puppy meal? Food, two buckets, a timer, and LEGO. Engineering his way to the Sarasota County science fair, fifth-grader Ethan Isaacs' creative blend of his knowledge in multiple fields allowed his vision to take shape.

Isaacs' initial plan was to construct a machine that would regularly deposit portions of dog food without need for human intervention. As an aspiring geologist, Isaacs owns a small rock tumbler, which was a great source of inspira-

tion for his science project. He incorporated the idea of a rotating drum shape, based on his knowledge of the inner mechanics of the tumblers used in rotating mechanisms.

"I got [the idea] from a fish feeder," Isaacs said. "My dad told me about how he had a fish feeder, and it had an axle, and it was basically the same concept, but like I said, I got inspired by a tumbler to instead make something on the bottom turn."

The final product was a fully functional automated mechanism that scooped and

poured food into a bowl without spilling, using a LEGO Mindstorm control and a small timer.

The process of building the mechanism, however, had its ups and downs.

"At first I wanted to use the controller... as a timer," Isaacs said, "but when I realized I couldn't, I just connected a timer with wires and used the Mindstorm as a source because there are batteries in there to power it."

Isaacs built three prototypes over the course of approximately 12-16 hours — the first operating with a motor alone, the second composed of a motor and a Mindstorm controller, and the third substituting a timer for the Mindstorm with the Mindstorm used as a battery.

His father, Greg Isaacs, encouraged him throughout the process.

"One of his chores at home is to feed the dog," Isaacs said. "I think that was the inspiration for him.... He's done a lot of things with LEGOs, so he wasn't afraid to try to build it out of LEGOs instead of us cutting up a bunch of wood or something else."

Isaacs' interest in engineering and science extends beyond just LEGO, though. His tumbler, which inspired the dog-feeding project, is just the tip of the iceberg when it comes to his enthusiasm for rocks and minerals.

"He has always been interested in rocks and minerals," Greg Isaacs said. "It's some-



Fifth-grade science fair participant Ethan Isaacs sets his dog feeder to the on position using a mechanism he created himself. Isaacs will present his creation to judges at the Sarasota County Science Fair Jan. 30.

PHOTO PROVIDED BY GREG ISAACS

thing he notices wherever we go, and it may be a parking lot or a hike in the woods — he's always noticing and picking up rocks. It's just something he's always been interested in."

Isaacs and his dog-feeding creation will proceed to the


Elementary School County Science Fair in Robarts Arena Jan. 30. For now, he hopes to provide a convenience for pet owners everywhere.

"I think it could be useful... you can adjust it, and it's easy to make and easy to use," Isaacs said.



Featured is fifth-grader Ethan Isaacs' dog-food-feeding creation, which he engineered and built himself. Isaacs gained inspiration for the project from a fish feeder.

PHOTO PROVIDED BY GREG ISAACS



**Lessons:**

- Chinese & Spanish
- Programming robotics & fun
- LEGO Robotics League
- Table tennis club
- Chess lessons
- Art lessons

Pine View students can take the school bus 1602 to BaoAce after school tutoring lessons.

(941) 500-3982 | [www.BaoAce.com](http://www.BaoAce.com) | At Sarasota Square Mall