

Letter from our Starbase Board of Directors President

Thank you, thank you, thank you to the generous donors, sponsors, partners, and volunteers of Starbase Vermont. Your support allows us to provide the high quality hands-on program that generates excitement and interest in science, technology, engineering and math in our Vermont students. It is their enthusiasm and joy that motivates me to volunteer my time and energy to stay involved with Starbase.

It is also important for you to know that 100% of all donations go toward our educational program costs for the students at both of our program sites in Vermont.

Thank you for being an essential part of our team.

Sincerely,

Mary Ann Ledwith
Board President
Starbase Vermont Inc.

**"Thank you for the most amazing, wonderful, and exciting experiences. I can never thank you enough."
- Kairos B. 5th grader**



This year 1,400 students from 42 schools will complete our 25 hour curriculum. Since 1995 more than 19,000 students have participated in Starbase Vermont.

STARBASE SCOPES OUT EMERGING SCIENCE IN D.C.

By Paige "Ladybug" Montgomery, Instructor, South Burlington

Last October the Starbase teachers from Burlington had the opportunity to attend the USA Science and Engineering Festival Expo in Washington, DC! Over the course of the weekend we explored hands-on science and engineering activities, attended presentations, including Bill Nye and discovered the latest advancements in technology. With little time and lots of ground to cover our days were jam-packed as we took on the Nation's capitol and broadened our knowledge in STEM.

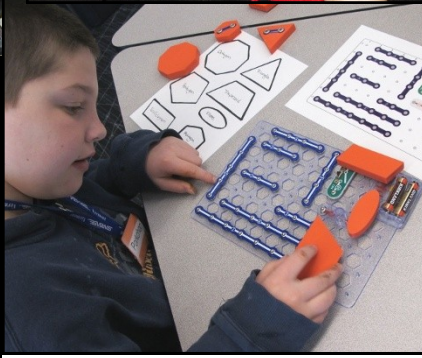
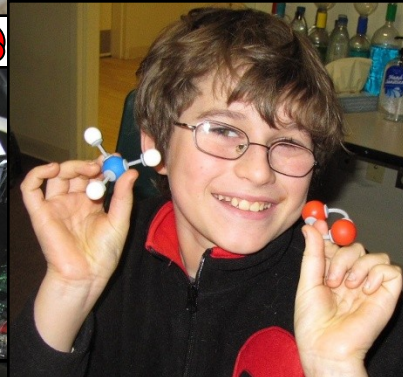
Joanna "Hiker Girl" Tebbetts was very excited about Nanotechnology! She ventured through a "Nano Tube," where she discovered the many uses of Nano Engineering. She tried on a hydrophobic lab coat that had the ability to hold water in its pockets! Hiker Girl mentioned that she is very interested in how Nano Engineering can be a solution to everyday problems.

Dan "Strider" Myers explored the area of robotic engineering. He was fascinated by the use of gyroscopes in a motorcycle and bicycle. The motorcycle had two tires, side by side, and the bicycle could be pushed without a rider and still stand upright. Strider was also amazed to see a giant robotic scorpion being operated by an engineer riding on its back. Talk about Transformers!

I loved learning about Oobleck! This is a non-Newtonian substance made from corn starch and water. Oobleck looks like an ordinary bucket of pale mud, however when you apply pressure it acts like a solid. We watched as kids ran quickly across the Oobleck, attempting to stay on the surface and not get sucked in. Hiker Girl was successful in her Oobleck trek and made it across safely!

Did you know?

A bucket full of water contains more atoms than there are bucketfuls of water in the Atlantic Ocean.



A Big THANK YOU to our Awesome Volunteers!

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Barb Pennington (Jade), Training Coordinator, RUT
Joanna Tebbetts (Hiker Girl), Training Coordinator, BTV
Becky Dansereau (Wildflower), Instructor, RUT
Paige Montgomery (Lady Bug), Instructor, BTV

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Did you know?
The amount of carbon in the
human body is enough to fill
about 9,000 pencils.

FORT RUTLAND CHILLS OUT (and Warms Up)

By Bob "Chief" Snarski, Unit Chief, Rutland

It all starts at the Rutland Southern Vermont Regional Airport right after launching the student hot air balloons, when Chief asks the students to touch the small propane gas can that has been furnishing fuel to the balloon launcher. Having just experienced the heat of the balloons which fly to heights of up to 400 feet due to the less dense hot air within, the students cautiously and quickly touch the gas bottle, only to be surprised that it is not hot but instead cold, even to the point of having frost on it at times. "Hey, It's COLD!" will usually be the surprised response. Then Chief or Becky "Wildflower" Dansereau, or Barb "Jade" Pennington will tell the kids that they have just witnessed an ENDOTHERMIC reaction. This is the Starbase students first experience related to the "Warm-ups, Cool Downs" lesson that will follow later in the 5-day curriculum.

The lesson to follow gives students an overview of endothermic and exothermic reactions and a chance to both see and experience how the absorption or release of KINETIC ENERGY results in temperature change. The students have the opportunity to experience and understand physical and chemical changes with ice melting (physical change) or a glow stick (chemical reaction). Students see the differences in temperature when simple chemicals like Hydrogen Peroxide and yeast are mixed to produce an EXOTHERMIC reaction (releasing heat), and lemon juice and baking soda mixing to produce an ENDOTHERMIC reaction (absorbing heat). The students experiment by mixing water and calcium chloride again producing an EXOTHERMIC reaction. The students also experiment by mixing Alka Seltzer and water, producing the ENDOTHERMIC reaction.





Thank you to all of our community sponsors and donors who help make it possible for Starbase Vermont to inspire students in STEM!

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Tom Amidon
Matt Pennington
And everyone who bought Starbase t-shirts and hats!

Starbase Vermont

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