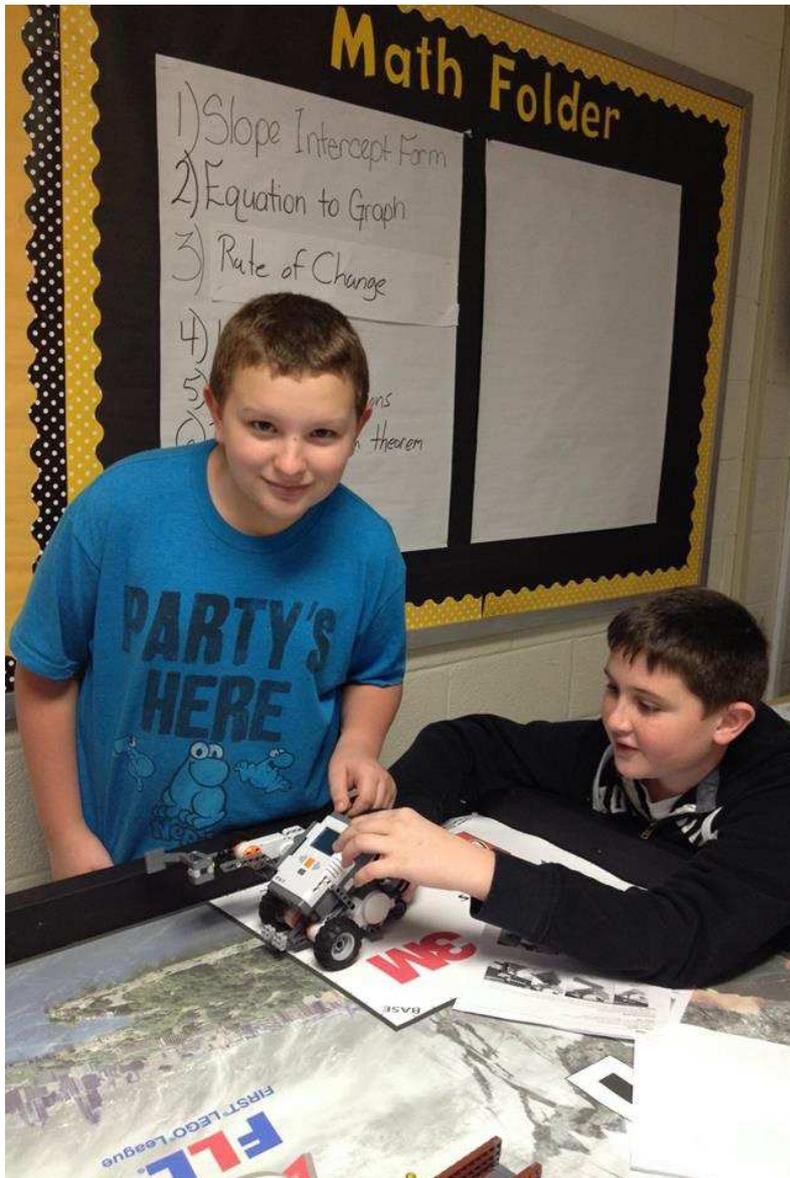


## 2013 Hazard KY FIRST LEGO League Regional Qualifier

On November 23<sup>rd</sup> the Challenger Learning Center of Kentucky hosted our second annual FIRST LEGO League robotics tournament. 14 teams from across Eastern Kentucky traveled to the Hazard Community and Technical College campus to compete in this year's disaster themed challenge titled "Nature's Fury". This event was part of a grant partnership led by Owensboro Community and Technical College designed to increase participation in the LEGO League program and spread the educational benefits that come with it.

Perhaps the most important aspect of this program is that it exposes students to a style of education that many of them have never experienced before. Independence is a critical part of the program and many students struggle with that at first, having been led through education their entire lives. When given time and proper guidance it doesn't take long at all before they jump at the chance to be in charge. They find themselves with the freedom to take control of their education and development. With that comes a level of excitement that I rarely see "in the classroom". They have personal



responsibility for what they learn and create as the season progresses and rather than shrinking from that as some might expect they embrace it. A series of mental connections are made that allows them to see education as something new and interesting. They become willingly responsible for the work needed and do it happily because they are able to see and touch the results. Over months of hard work they recognize that their skills are improving as a direct result of their effort and that realization is a critical factor in successful education.

I had a particular experience during a school visit to a new team that summarizes this idea. I walked the team through the construction of a basic robot, watching as they completed each step. Once it was built we moved on to sensors and other advanced topics. I showed them how the robot they had built was able to use an ultrasonic sensor to measure distance and then send that data to a computer graph in real time. They waved objects in front of the sensor and watched as the graph on the screen changed each time. A little girl in the group waved her hand in front of the sensor. Then she looked from her hand to the robot and then to the graph, seeing it map her movements. Everything clicked in her mind and her face lit up, yelling out "That's so cool!" Suddenly this little girl wanted to know more. She wanted to know the math and science and understand how it works. The curiosity necessary for education to thrive had been ignited.



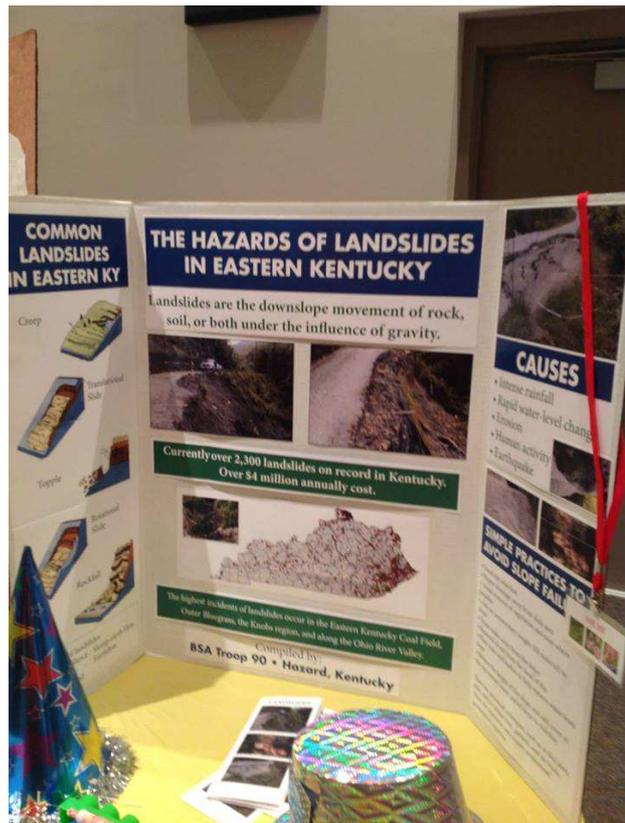
Curiosity is part of the human condition. Creating an opportunity to learn in a fun and exciting way is the first step in something bigger and better. It builds into an environment where inspiration is the rule and negativity is unwelcome. A place where children can solve problems on a global scale if you provide them enough colored chalk. Just point them in the right direction.





When competing in a FIRST LEGO League tournament there are four competition areas. The first and most visible is the Robot Games. In these games the students construct and program robots to complete missions on a gaming table. Students learn about math, science and engineering over the course of the season and develop new skills in the creation of robots that are as unique as the teams that build them. This event always draws a crowd!

Each team also completes a Project based on the challenge theme that strives to solve a related problem. The 2013 challenge theme was “Nature’s Fury” so we saw a variety of projects themed on surviving and thriving in a disaster environment. I had the pleasure of learning about a few teams’ projects such as using HAM Radio stations to maintain communication in a blizzard and the development of easily distributable flood survival kits. In other regions several FLL teams have been able to develop and patent their projects and I think our area would benefit from the solutions presented by the teams. Developing a solution on this scale requires a great deal of work and research which creates excellent learning opportunities. It encourages the teams to go out and get involved in the real world. They must see for themselves, identify problems and find creative solutions.



The third competition area is Robot Design which tests team's technical ability and presentation skills. In each judging session a team must showcase the knowledge that created their robot. A panel of technical experts tests the engineering capabilities of the team members with a focus on mechanical design and programming. They are encouraged to keep engineering notebooks with the mathematic information they discover and notes about the operation of their robot. Communication skills are critical here as teams are required to show what they know!



The fourth and final scoring area is Core Values which is judged both in a presentation session and throughout the day. Throughout the season it is reinforced that kids should have fun while they learn. A positive and professional environment is cultivated that allows them to work as young engineers. Teams compete against each other but also cooperate to help each other grow and learn. Many kids begin to understand personal

responsibility as they work to complete their tasks in a way that reflects well on them and benefits their team as a whole. This buildup of positive energy culminates at our qualifier event when teams present their Core Values that have developed over the season. Flags and artwork are common and the energy level is always high. Many of the teams take to the floor between matches in spontaneous dance events.

The sum of all these parts is an event which is entirely unique. There is a relentless level of inspiration and energy generated by our teams and guided by our adult participants. They create an environment of natural and spontaneous education. Children and adults find themselves learning and loving it.

