THE NUTS AND BOLTS

Carmel High School—Rolls-Royce www.techhounds.com

TECHHOUNDS TEAM 868

Issue 4.2
January 20, 2010

2011 SEASON KICKOFF at IUPUI

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UPCOMING EVENTS

End of Build Season
February 22, 2011

Milwaukee Regional
March 10-12, 2011

Boilermaker Regional
March 17-19, 2011

St. Louis Championship
April 28-30, 2011

On January 8th, 40 **TechHOUNDS** and 10 mentors boarded the bus to attend the 2011 FIRST Robotics **Kickoff** ceremony at IUPUI. The students were eagerly awaiting the unveiling of this year's **game**. Two game hints had been released in the weeks preceding the kickoff, and speculation about the game had become a topic frequently discussed.

After two hours of guest speeches, the long awaited game was finally revealed. This year's game, **LOGO MOTION™,** involves robots placing inflatable FIRST logo pieces onto a scoring grid-stand, ending with a **mini-bot** racing up a pole to receive **bonus** points.

An estimated 50,000 High School students around the **world** watched the Kickoff via **NASA-TV** broadcast. Special guest speakers ranging from the founder of FIRST, Dean Kamen, to Black Eyed Peas member, **will.i.am**, were at the Kickoff in Manchester, New Hampshire.

LOGO MOTION
Honoring Jack Kamen

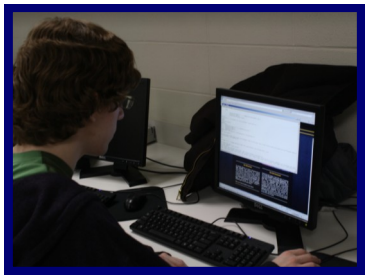
The TechHOUNDS began **brainstorming** upon returning to the bus, planning **strategies** and ideas for playing the game. Upon returning from the kickoff, students and faculty continued brainstorming well into the **afternoon**. All signs indicated that it will be a great season.

FIRST®

The FIRST Robotics competition is part of **FIRST** (For the Inspiration and Recognition of Science and Technology). An organization, that according to founder Dean Kamen, strives to "transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology heroes." For more information, visit **www.usfirst.org.**

Division Updates

Website



"We have been looking at other teams' websites to see what kind of **competition** we are up against. Some small **updates** to the upper half of the front page of our team website were made. We are also working diligently on completing team member **biographies** for use on the website." -Tom Keen (Division Leader)

Programming/Electrical

"Our division made the 6-wheel drive train operational with a controller. We started preliminary driving of the swerve drive, and established a **subversion repository** to store all of our code. We also prepped all of the team laptops to be ready to code. Currently, we are finishing the **drive code** for the swerve drive, making autonomic code for the 6-wheel robot, and writing line code." -Austin Miller (Division Leader)

Robot Operations

"For the past two weeks, we brainstormed ideas for this year's robot. We created large wheels and a **gate system** for deployment for the mini-bot. We are developing an elevator on a mount roller system and attached bearings for a **lower friction extension assembly**. For the tube collector, we built a prototype to test a roller system's ability to pull in a tube. We have been running **diagnostics** on two different types of drives: 6-wheel and swerve." -Scott Blankenbaker (Division Leader)

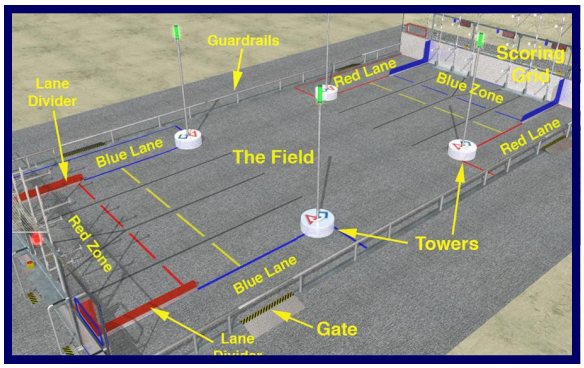
Auxiliary Construction

"These past two weeks we have been constructing the **playing field** for this year's game. By gluing **PVC pipe** together and attaching wooden feet, we made the back of the scoring grid and assembled the scoring grid posts. We also assembled the base of the **tower** that the mini-bot climbs at the end of the game, and we are currently finishing construction of the tower." -Kyle Ellis (Division Leader)

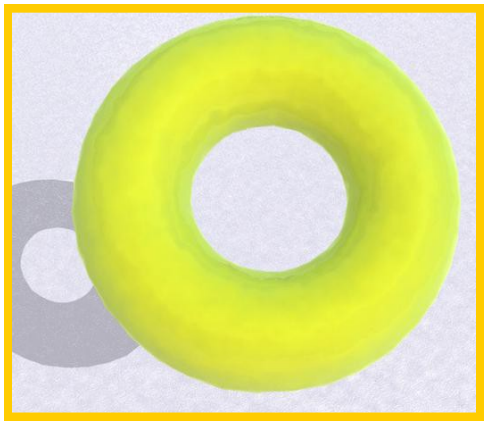
Animation

"This year's prompt, 'Change Their World', is about the iikos, an **alien** population. Our task is to create an **environmental** problem and solution for the iikos. We have a solid idea for how we will incorporate our focus on the importance of **conservation of resources** into our animation. These past two weeks, we worked on modeling our animation on the 3DS Max software." -Sarah Fields (Division Leader)

LOGO MOTION™

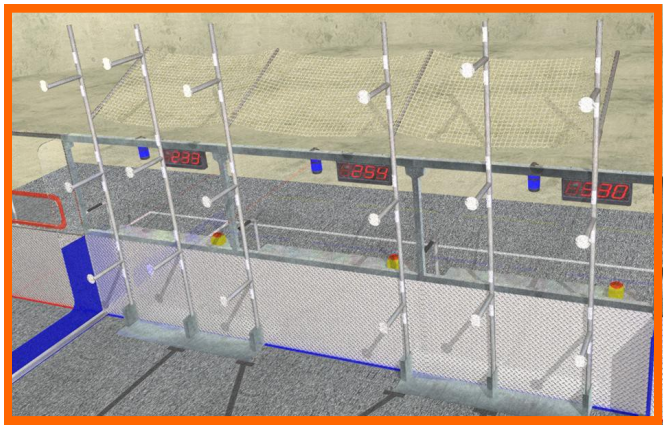


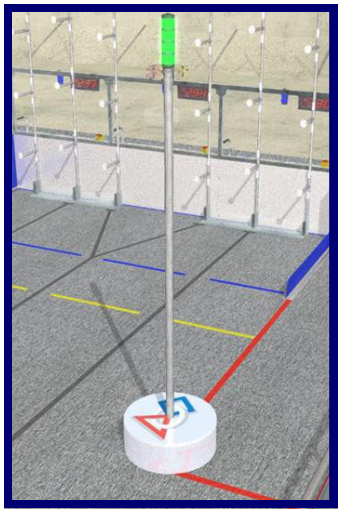
This year's game is called LOGO MOTION™. The game is played on a **27' by 54'** field where two **alliances** (red and blue), each consisting of three robots, compete. The field is composed of red and blue **scoring grids** on opposing alliance walls with four **towers** (two for each side) spaced evenly in the center of the field.



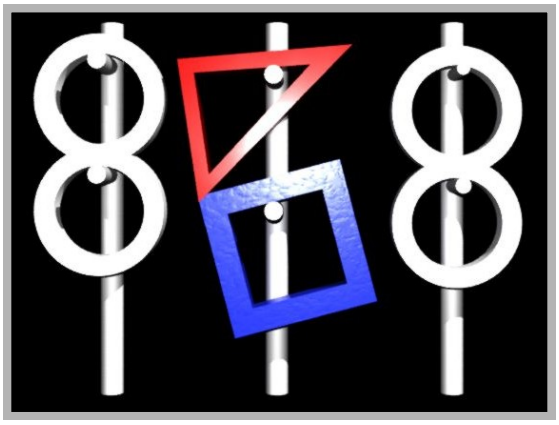
To begin the game, robots start in a fifteen second **autonomous** mode where robots run on pre-programmed code independent of human drivers. During this mode, robots can hang yellow inner tubes called **ubertubes**. The ubertube is worth two, four, or six points when placed on the bottom, middle, or top row respectively. It **doubles** the score of any other inner tube subsequently placed over it during the tele-operated period.

Next, a two minute **tele-operated** period begins where human drivers take control. The drivers maneuver their robots to hang **FIRST** logo-shaped (red triangle, white circle, and blue square) inner tubes on the racks for one, two, or three points on the bottom, middle, or top row respectively. In addition, if the logo tubes form the FIRST logo in the proper sequence, the entire row's points are **doubled**.





Finally, in the last ten seconds teams can release a mini-bot from their larger host-bot. The **mini-bot** races up a 10' pole to trigger a **sensor**. The first mini-bot to the top receives a thirty point **bonus** with the bonus decreasing for every successive bot to twenty, fifteen, and ten points.



Rookie Corner

Josh Foster, a robot operations member, answered our tough questions.

Q: What inspired you to join TechHOUNDS?

A: TechHOUNDS seems interesting and I enjoy working with my hands.

Q: What will you contribute to the team?

A: The team will benefit from my determination and unconventional way of thinking.

Q:What prompted you to become a TechHOUND as a junior and not earlier?

A: I took Digital Electronics my sophomore year, and Mr. Giltner encouraged me to join the team.

CONTACT THE TECHHOUNDS

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