



Lock Tight Night

December 8th, 2012

With the help and support of a great number of student and parent volunteers, Columbus Signature Academy hosted the third annual Lock Tight Night overnight robotics competition. Teams began entering the school on Friday at 7:00pm to get their kits checked for consistency. By 8:00pm, all of the teams had arrived on the scene to learn what kind of task would be presented for this year's event. The students viewed a short animation describing the basic rules of the game Smart Kart. Immediately following, the playing field was revealed as the students were already pondering how they would build a robot capable of collecting coins (1 point) randomly dispersed on the field. As with the video game upon which this year's game is based, the students are provided an alternative means to score by collecting mystery boxes that contain an unknown value (5, 10, or 15). The rules were soon distributed to allow the teams to gain a better understanding of how the scores would be calculated. Teams were then dismissed back to their corresponding pit areas to begin planning their strategy and robot designs over the next 12 hours. White boards began to be occupied with potential designs as quickly as the tables filled with parts from this year's Vex robotics competition kit. As teams would begin to struggle, Engineers from Cummins were available to provide consultation to those in need throughout the night.

As teams noticed signs advertising a seminar on Loctite products, some veteran team members already began speculating about what free samples would be provided to teams this year. Most of the students attending the Loctite seminars were new to both the products being demonstrated and the Lock Tight Night event. In spite of their inexperience, the students quickly found various applications for the adhesive, epoxy, thread locker and sealing tape they were provided. As midnight approached, the Lock Tight Night student staff came around to each team with some Christmas presents for use in their robots. Included in their gift package were various Vex motors, gears, switches, popsicle sticks, and a large sheet of cardboard. Like in years past, several of the teams questioned how they would ever use cardboard or popsicle sticks when presented with the gifts. However, as 3:00am passed with none of the teams able to score a single coin, teams began to explore any and every option available to them to find an advantage. Rumors began to spread quickly at 4:00am that a team had not only scored, but had been able to accumulate 80 points during a three minute round. With the time quickly approaching when the Engineers would arrive, pressure and frustration drove some students under the tables to get some rest before having to compete. Two dedicated volunteers from Cummins stayed to consult struggling teams all the way up to 5:00am. Some of the Engineers would even come back the next day to see how their teams were doing in the competition.

The Engineer teams arrived just after 7:00am to catch a glimpse of the game and to get a sense of which design concepts were working for the student teams. Teams from Cummins and Visual Edge began planning and building their robots shortly after 8:00am in a mad rush to catch up with the student's head start. After a slightly late start to the practice rounds, several of the student teams began to gain some confidence as they entered the qualifying matches. One of the teams who had struggled to develop a working design throughout the night fastened a banner and a flag to their robot with the words "We Surrender" by mid-morning. With lunch time approaching, one of the Engineer teams began to appear on the practice track to ensure their robot would successfully climb the ramps. The students had one last chance following lunch to gain enough wins to make their way to the finals where they would take on the Engineer teams. Only the top ten of the original fifteen teams would secure their slot in the finals.

Before beginning the finals, the Engineers came out of their pit areas long enough to judge which robot would receive the Engineer's Choice Award that would be awarded at the end of the contest. After some discussion between the Engineers and the student representatives concerning the various designs, both company teams agreed who should be presented with the award. At 2:00pm after six hours of design time, it was time to see how well the Engineer teams would perform against the student teams. The Engineers were paired randomly with students teams so that teams would play with a different team during each match. By the time of the final match, one of the Engineer teams had also taken the surrender approach. The Cummins team battled it out until the very final match, but could only pull off a 6th place finish against the better practiced student teams.

Lock Tight Night Robotics Competition 2012 Results

Trophies

Lock Tight Night Trophy

First Place Alliance

First Place Alliance

Second Place Alliance

Second Place Alliance

Engineer's Choice Award

Community Service Award

School

Jay County High School

Bloomington High School South

Southport High School

New Palestine High School

C4 Columbus Area Career Connection

New Palestine High School



Company Rankings

Company Participant

Ranking Out of 12 Teams

Cummins

6th place

Visual Edge

12th place



Corporate/Community Support

Sponsor

CSA New Tech Facilitators

Visual Edge

Cummins

Loctite

CSA Cafeteria Staff

Ivy Tech IT

Robotics Parents

Trevor Floren

Donation

Countless Hours of Work & Support

Vex Robotics Kits, Engineer Team Volunteers

Overnight Mentors, Engineer Team Volunteers

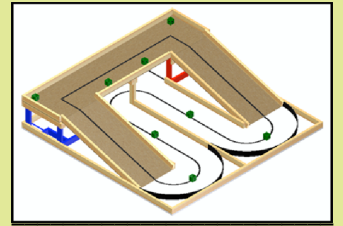
Seminar Volunteer & Product Samples

Cafeteria Support throughout the Competition

Cafeteria Staff Volunteers

Hospitality Room Donations

Game Animation Design



Smart Kart

Smart Kart is very similar in concept to a popular video game that involves go-carts racing around a track while attempting to collect as many coins as possible in a limited amount of time. In the case of Smart Kart, the robots have – a three minute time period in which to make laps. The coin collection portions of the three minute rounds are done in relay style with each partner taking turns depositing collected coins in the pit area while the other makes a lap. In addition to coins, there are also mystery boxes scattered throughout the track that contain coins of unknown values (5, 10, & 15). Coins pushed into the pit area are worth the actual coin value while the tokens deposited into the elevated goal are worth double the value of the coins.

As an added bonus, if an alliance team is able to complete a total of four laps (two laps each) their alliance's score at the end of the match is multiplied by two.

