S.M.E.L.L.Y.

SMELLY is a program we run every year where we share robotics with the Boys and Girls Clubs. More than just a single event, it is designed to train coaches who can consistently pour into students, propound an exciting and thought-provoking challenge to students, and ultimately increase level of engagement through a competitive and culminating event. To do this, SMELLY consists of three major events: a robot school, the kickoff, and the competition.

## Background

SMELLY, besides fitting extremely well with the Skunk Works theme, has meaning of its own. It stands for *Science and Mechanical Engineering Lego League for Youth*. The mission behind this program has always been to engage our local Boys and Girls Clubs of King County as a part of our community outreach initiative. However, when we started working with the clubs, our original plan to start FLL teams fell apart. The reason was that the cost for entry was too high and the games were too complex. Students cycled through too often and didn’t meet consistently enough for clubs to field FLL teams. Our solution was to give them a challenge that they could feasibly accomplish, so we partnered in our first year with North Coast Electric, Champion and Associates, and OmanTek to bring sponsorships and our coach created a simpler game for them to play. As things fell into place, SMELLY was born.

## Materials

Each Boys and Girls Club location needs:

* 1 Lego EV3 Kit (type of kit) **per team**
* 1 Laptop with EV3 Programming Software (name of software) **per team**

To run the SMELLY Competition the way we did, you will also need a stadium (a gym with seating will do) and if you want to live-stream it you will need cameras and some other technology.

# Robot School

**Who?** Employees of the Boys and Girls Clubs who will be robotics coaches

**What?** Training coaches on how to build Lego robots

**Where?** Our robotics coach’s classroom

**When?** Saturday, 9:00 am to 2:30 pm

The Robot School has the goal of expanding our reach. There are only so many kids that our students can feasibly reach. However, by training others to make an impact, we are able to much more effectively make an impact on kids’ lives.

## Preparation

[todo]

## Program

[todo]

Hand out the Kit of Parts

# Kickoff

**Who?** SMELLY Participants

**What?** Releasing the Game to kids

**Where?** Our YouTube Channel

**When?** Wednesday, 2:00 pm

The Kickoff is a fun milestone for teams to look forwards to that builds excitement for the competition, releases the game, and allows us to spread PIE and FIRST to our captive audience as they watch the beginning of the video.

## Preparation

Assuming the Game Manual is written (see Appendix 3 Game Manual) and all teams have a Kit of Parts, the Kickoff involves creating a video, including a “Game Animation,” “Build Up,” and “Closing.”

“Game Animation” – This section is the most important part and shows teams an actual field and explains every aspect of the game. One spokesperson shows off the field and each of the game pieces. There is also a thorough explanation of all ways to score and all of the penalties. Teams should be able to understand the game and a simple strategy after watching this video without opening the Game Manual.

“Build Up” – This section comes first and is essentially an opportunity to get build excitement not just for the unveiling of the competition but also for robotics. Explain more about who Skunk Works is, maybe talk about the FIRST program, interview students and mentors, and find other ways to get kids excited for SMELLY. It would also be cool to include a recap from last year because the competition is the most exciting part.

“Closing” – This section comes last and should include an unboxing of the Kit of Parts. Go through each piece and connect it to the Game, also explaining any assembly required. Afterwards, include an inspirational message and a fun send off.

## Program

Logistically, we’ve found that posting the video to YouTube on the day of the kickoff works best. We connect this video to our website along with a PDF of the Game Manual (see Appendix 3 Game Manual), and email a link to each of the teams involved. They can then, at the time that works best for them, show the video to the kids and open the box.

# Competition

**Who?** Everyone!

**What?** Teams engaging with their robots in fun competition

**Where?** Our Auditorium

**When?** Saturday, 9:30 am to 3:00 pm

The Competition is the culmination of SMELLY. At the event, we have the opportunity to engage kids most effectively. The goal is that every attendee would leave with a greater degree of passion for robotics and a desire to pursue it further in the future.

## Preparation

Because it is such a big event with many people involved, picking a date and time that works well for everyone can be hard. The most important points logistically include sending the details to each coach that might field a team, and try to get commitments in advance for many teams because some may fail to show up.

The night before the competition, we set up the venue to include a few general areas. One section is designated as “Pits” where every team has an area to work on their robot and plug in their laptop. We also provide one or two practice fields in this area. There is a viewing area or bleachers where the audience can see the screen and competition, and of course a competition area. The competition area includes two fields, a queueing station, a media station, and more area for the emcee to move about. In some other quiet room, the interviewing room is set up with a camera to record interviews.

To staff the competition, we included the following roles.

(1) Emcee—probably the person in charge of everything, because they have to think about and juggle a lot. Commentates on matches, makes bad robot jokes, etc.  
(2) Media Guy—These people are in charge of switching the video feed, posting scores, starting the game timer, displaying award slides, controlling audio, and running every other technical detail associated with the competition, which is a lot.

(5) Referee—Two referees are allocated to each field and is one designated as head ref. They keep track of penalties, tally scores and tell the media booth, and reset the field between matches. The head ref should know the rule manual well and answer any questions about the game.

(4) Camera Man—This really depends on the camera setup. If using the Switcher Studio app, they can use their phones as cameras (although the audio comes out a little funny). Probably one camera man per field, one for a top-view or showing the crowd, and one dedicated to the emcee.

(3) Queuer—Two runners and one head queuer are first in charge of registering teams and names. They then have the match schedule, record scores, and get teams before they need to compete so there aren’t any pauses.

(2) Interviewer—Interviewers talk to a group from each team of students, asking them predetermined questions and doing their best to keep the conversation going. They will also record each interview.

(5) Tour Guide—Can be done by someone who already has another job. During lunch, they will take groups of students on tours around the school (or whatever venue it is)

Another important aspect of the SMELLY Competition is its accessibility for friends and family who cannot attend. YouTube works will for a live-stream and will record the stream as well for later use. Making sure the technology works is important for sure, but so is getting the word out. Find a way to get the word out to the family of each kid who will be attending, as well as people associated with our team. The more watching the better.

Awards, if they are to be cut on the waterjet, also need to be created ahead of time. Either no teams go home without an award or many of them do, so there probably don’t need to be more than about 6 created. Here are some sample awards: Champion, Finalist, Inspiralation (Based on Interview), Most Spirited, Most Creative Robot, Most Gracious. Of course, each award needs a creative name.

## Program

Running the Event

Lunch

Playoffs

Interviews

Awards

Survey the kids

# Conclusion

Sponsorship

# Appendix 1. Timeline

# Appendix 2. Designing a Game

# Appendix 3. Game Manual