

# DEMOMAZE

 BEST ROBOTICS

We are excited to again be offering **BEST Classroom**, a new extension of our existing program that will continue to challenge students in many of the skills they learn during a Classic competition, right from their own classroom. This is no normal season, as we all know. BEST Classroom is a program that tackles the needs of the students with the continuing reality of our situation due to COVID19. As the situation with the virus changes often, the classroom program allows teams to work locally together in group sizes they determine, in locations that they determine.



## What is BEST Classroom?

It is our on-location BEST Robotics competition. All activities are judged online. Robotics kits and a Classroom Field Kit are provided to each team participating. Teams organize themselves, design and construct their robot just as they normally would. Only the evaluation of robot performance changes, as teams execute time trials on the local classroom field versus at a large competition venue. All activities are designed such that they can be performed by students collaborating in person or remotely, depending on your situation; robot construction will require group collaboration. It includes all the activities that you are familiar with in the Classic BEST competition and several skills

challenges that will expand the students' knowledge and their skill levels. Each hub decides which competition format and skills challenges they will offer.

## **How is the BEST Classroom competition unique?**

### **Schedule/Timeline**

The competition timeline has been extended to 8-weeks from Kickoff to Game Day. This extension is to allow more flexibility for our hubs in scheduling events and to provide teams with more time to acclimate themselves to any changes/restrictions that may affect them.

### **Designing/Building the Robot**

Robotics kits and classroom field kits are provided by your local hub on or near your hub's kickoff date. The hub will provide all details about how the Kickoff will be performed and how and where kits will be distributed to participating teams. The team will be required to provide a local location to construct and setup their classroom field. No worries, the field is only  $\frac{1}{4}$  size of a typical BEST field, approximately 11ft x 11ft. Think wisely about where you will setup the field as moving it after initial setup will not be easy. Your team will design and construct a robot from the provided kit materials to solve the game "problem". We are also continuing the Critical Design Review (CDR) activity this year where your team will present details of their robot design to the judges and gain valuable feedback. The CDR will occur in week 5 of the competition.

### **Robots on the Game Field**

Your team will perform multiple time trials on the classroom field and stream this activity for judges/referees at a designate time. The results of the time trials will determine your overall score for robot performance. We'll even show you how to stream this activity so that parents, teachers, mentors, friends can watch your team's skills from anywhere! No need to travel! Grandpa can watch from North Dakota.

### **Familiar BEST Activities**

The same BEST Robotics activities you are familiar with will continue in our BEST Classroom competition.

*Engineering Notebook* - no change to this traditional deliverable documenting your engineering process, industry research and game strategy.

*Marketing Presentation* - same criteria as in the Classic competition but it will be hosted as an online meeting with judges.

*Virtual Team Exhibit* - your team exhibit has gone virtual! Learn how to turn your exhibit into an online showcase of your publicity and community relations activities. We even have a way for your team to video chat with the public at the times you choose.

*Student Interviews* - student interviews with judges will be accomplished at scheduled times through an online meeting with the team.

## **Skills Challenges**

Additional skills challenges may be offered by the hub that will test your students' skills and knowledge and enhance their overall experience. Each is an exciting new opportunity to expand your students' education. Check with your local hub for the list of skills challenges they will offer.

*BESTMania IQ Challenge* - So you think your students are pretty smart, eh? Let them try the weekly BESTMania IQ Challenge, collect points for their team and learn a few new things along the way. Lots of twists and turns and ways to boost their score each week. They can also earn points all week long through the MathZing Prep challenges; SAT and Grade8 math prep for points! Join the games at <https://www.mathzing.com/bestmania.php>.

*BEST Minecraft Challenge* - Yep, you guessed it, a Minecraft game modeled after our 2021 game, Demo Daze! Get online, compete as a team, beat the clock to score as many points as you can. Solve puzzles and learn more about the game theme and real-world implications as you try to achieve milestones and create new materials. Anyone can play, but your game time is limited so play wisely!

*Robot Modeling Challenge* - Take your team's robot design to the next level. Model it in a 3D environment where you can simulate its movements. Maybe your students are skilled enough to demonstrate it in action on the Demo Daze virtual game field! Import from CAD tools or model it from scratch in Mathworks Simscape Multibody environment. Take your time, do as much as you can, earn points for each accomplishment.

*Engineering Drawings Challenge* - Many teams already use Computer Aided Design (CAD) in the development of their robot. Let them take it one step further and create masterful drawings that will win this award! Engineering drawings are important throughout industry. Learning how to produce proper drawings will be an incredible boost to their resume.

*Website Design Challenge* - Your students can learn how to design a website and earn points for the skills they demonstrate. They can use this platform to learn how to program in a variety of languages including HTML, CSS, Java, Python, and others. Help them tap into their artistic side to create a visually appealing and functional website. Website design is a great skill to have in their portfolio. It's all about the design!

*Video Design Challenge* - Video is a common tool we use every day it seems. All our mobile devices have video cameras. But there is an art (and great skill) in creating a good video. Students can learn about the basics of photography and videography as they develop a custom video on one of our select topic areas. They could be crowned Master of Video Design!

### What do I do now?

Find a hub offering BEST Classroom and register your team to participate at the [BEST National Registry](#).

BEST Robotics is working tirelessly to provide our students with the best opportunities and education possible during these difficult times. We encourage everyone to not let this difficult time change that. Adapt and overcome...be a part of the solution!



<http://www.bestrobotics.org>

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