

Botball 101 Organize Your Equipment - Be Successful
Kristal Rosson
Katie Gundlach
Courtlyn O'Grady
Desert Robotics

Botball 101

Organize Your Equipment

Be Successful

Goal:

Give Botball teams ideas on how to organize the Botball equipment. We feel that keeping your equipment neat and organized will contribute to your team's success. You can avoid wasting time hunting for pieces and be more productive.

The Team

Kristal Rosson, Katie Gundlach, and
Courtlyn O'Grady

Project Description

Organizing equipment is always a problem for our team. Much of our equipment looks like Photos 1 and 2 - just a mess of stuff all stored together. One of our rookie members decided that we could do a better job if we just sat down and planned how to organize all of the equipment. So we did.

We even made a video from those plans. We will be able to show it to new team members and review it each year to keep us organized. We want to make a series of videos that include Botball 101 tips and hints to help Botball teams be successful.

Photo 1:
Botguy lives
dangerously!
[2]



Photo 2:
Does your
Botball
equipment
look like this?
[2]



We will put all of the ideas into effect next year when we receive our new Botball kits. Hopefully we will be able to do a better job than in the past and keep all of our stuff neat and organized. This will be an asset to our team.

The goal is to have all of our equipment in good condition, and readily available. This means that everything must be sorted and organized in an orderly fashion. One way to do this is shown in Photos 3 and 4.

Research [1]

We did some research to see how professional companies deal with equipment. A visit was made to a pharmaceutical packaging company. This company develops robotic solutions for handling and dispensing drugs. They sell robotic systems and then sell the packaging supplies necessary to use the robots. The manager of the company described it as a ‘razor blade’ business. They build the robot systems which sell for a lot of money, but their real income comes from selling the packaging supplies. Just like razors, you have to keep buying the supplies forever.

The company also builds the robots that they use to package the drugs. The medicine is put into single-patient use-packs for hospitals, prisons, nursing homes, and other institutions. A sample with m&ms is shown in Photo 5. This company handles thousands of pieces of equipment, many of which, are small like our LEGO. How do they keep it all organized? They explained that they have an Inventory Control Team consisting of a manager and three workers. Those four people keep tens of thousands of pieces organized in separate bins, as seen in Photo 6, much like the ones we have in our Botball room.



Photo 3:
Small LEGO
organized in
trays [2]

Photo 4:
Large LEGO
and other
Botball
equipment
organized
into bins [2]



Photo 5:
Sample medicine use packs [2]



Photo 6:
Organizational bins [3]

Each bin is neatly stacked and labeled. Each piece of equipment is kept in an appropriate size bin and very small pieces are grouped together in a plastic bag. The bag is labeled with the piece name and the number remaining in the bag.

Another thing the Inventory Control Team does is keep a spreadsheet list with every type of piece, how many are available, and which bin they are in. They use a computer to update the list every time one of the pieces is moved, used, or sold. The ITC keeps accurate records and checks inventory often.

Conclusion:

We decided that what our team needed was a group of dedicated team members to get things organized and then the whole team can contribute to keeping it that way. We want to pattern our inventory team after the professional company. So we had a meeting and discussed ways that we can get organized and who should be in charge of the actual organization. We also talked about the benefits of organization and the problems with not being organized. We feel it is easier to get all of our team members to cooperate if everybody understands the problem and the benefits of the solution. We will have a team of two members who will be in charge of developing procedures for organization, and the rest of the team will cooperate by making sure they always put every piece of equipment back into its proper assigned place after team meetings. Once a week the team will check inventory and make sure everything is in its proper place.

Here are some ideas we came up with
to get your Botball equipment organized:

First:

Develop Categories - Divide and Conquer

There are 100's of different pieces in the Botball kit, but they can be divided into just a few general categories. For example - LEGO pieces can be divided into groups like liftarms, axles, wheels, pins, connectors, and gears as you can see in Photo 7.

Your team can decide what categories and what equipment fits into them. A good place to start is the Botball parts list.



Photo 7:
LEGO categories [2]

Second:

Make General Categories - Sort * Sort * Sort

To get started make a few general categories, get some containers, and then sort everything. Don't worry if a few pieces get in the wrong place. Even if you only get 80% right you will still be able to find what you are looking for. Make the general categories for all of your equipment first, before you start sorting into sub-categories. That way if this is all you get done, you will still have your equipment sorted and organized to a certain degree. Having all of the equipment sorted into 6 main categories is better than having just the liftarms completely sorted by size and color while everything else is still a big mess.

Third:

Sub-Categories - Sort Some More

When you have everything sorted into general categories then you can go back and separate them. For example, liftarms, can be divided into thin and thick; pins into short black, long black, and colored; and gears into small and large. Do what ever works for your team. You can do as much or as little sorting as you want to achieve the level of organization that you think will work well for your team. There is no one way to do it. Some teams might just have a large bin with all the axles mixed together, while other teams might want to separate them into the different sizes of axles in smaller containers. Don't make the containers too small because it is hard to fit your hand into small spaces and pick up the little lego parts.

What Team Members Think

We asked two team members to give their ideas on the importance of equipment organization.

1. I think that organizing the equipment is important because when you are preparing for competition and building your robot you need to have pieces and if they are messed up it will take you twice as much time to find the pieces. This is important because in Botball you can not waste your time or else you will not be competition ready. The Botball kit changes every year. If you have Botball equipment from previous years you might use some illegal pieces by accident if everything is not kept in an organized manner. As soon as you get your new kit, you might want to pack up old pieces, and keep them in a separate place.

2. The reason you should organize your equipment, is because most teams lose their pieces in their botball room from having everything messy and not having a special place for things. Having everything organized is an important aspect of being a successful team. If you are not organized then there is chaos, things get broken, lots of arguing, and many team discussions of who is losing the pieces we need. We know this from previous experiences. Now that our room is organized, we have been getting along better and finding things a lot easier.

Results and Successes

The team leaders have come together to try and get all of our equipment organized. We are making progress and hope that we will soon have everything done. Next year we will begin earlier and have everything finished before the Botball season begins. We have a bin system in our equipment room now and this should help keep us organized in the future!

Future Directions

We are already planning a part two to our video. Organizing is only the first part. We have had our LEGO and other Botball equipment organized into bins before but it doesn't stay that way. No one seems to take responsibility for keeping the organization going. Everyone just blames someone else for the problem. We need to come up with strategies that will involve everyone on the team in the job of keeping our stuff together in an organized way. All team members need to be responsible. Our next video will focus on this. One of the most important aspects to this project is the buy-in from all the team members. It is a big job to keep everything in its place after you set up the organization. It can't just be one or two people. Everyone has to contribute by putting things away neatly every time. We think communication is the key. Discussing the pros of organization and the pitfalls of having a big mess is important.

“Soon you will have all your Botball equipment neat and organized. Be a team leader! Take care of your stuff!

Stay organized!”



Photo 8:
Last scene in our video [4]

How We Made Our Video

Our video consists of a narration under both live action skits and video clips. We wrote the narration first and then came up with ideas for skits and video clips that would be shown. The narration covers the main points that we thought would be the most useful to get stuff really organized. We ended the video with a clip of the organized equipment and final thought. See Photo 8.

The video was filmed on a Fujifilm Finepix JX camera. It is a very small, point and shoot with 14 mg stills and the capability of shooting HD 720p movies. Even though it was quite tiny it did a good job. Even the voices came out loud and clear on the camera's microphone. This is a fairly inexpensive camera (around \$100) we purchased just for making our videos. It stores video on flash SD cards which is very easy to download into your computer. We used iMovie 11 to edit our movie. The music and sounds were created using iLife Sound Effects and a copyright free music collection called FreePlay Music Library.

To get the audience involved we started off with a humorous example of hunting for LEGO parts:

Opening

Narrator: (Team member standing in the messy equipment room)

“Does your Botball equipment look like this? Do you get frustrated just trying to find stuff?”

Skit: (Team member hunting through a tub of lots of LEGO)

“No, No, No, I’m never going to be able to find this.”

Narrator: (Team member standing in the neat and organized equipment room)

“To solve these problems, organize your equipment.”

Skit: (Team member goes right to the bin with the pieces and easily finds them)

“Ok I need three of these. One, two, three - Perfect.”

How to Make a Good Video:

To make a good video you need to cover all of your main ideas quickly and to the point so that you can get all of your information in, in the allowed time. The video needs to have details and enthusiastic attitudes from all the actors and/or speakers. Along with the information, the video needs to have appropriate humor to make the movie worth watching and not boring to where the people who are watching want to get it over with. The humor used in the video should be said in an excited tone by the actors; also have them look like they are having fun doing it, instead of looking like they are not having a good time. Then the audience will have a good time watching it.

To help keep the video entertaining and in an up-beat mood, be sure to have music that is catchy that will get the people’s attentions. Make sure all music that is used is not breaking any copyright laws. Sometimes when there are voiceovers and the camera is scanning a room, or whatever the speaker is talking about, it wouldn’t hurt to have calm non-lyrical music quietly playing behind the voices. The actors on the camera should always be smiling and in a good mood the entire time instead of only when they speak. To keep people listening to the information instead of just watching what is going on, on screen, all actors with a speaking part should know their lines without looking at the script because there is a high probability that they will stutter and not have as much energy in their voice. Enthusiasm is contagious. If you believe in your message, your audience will too.

Bibliography:

- [1] Interview with MTS manager. (asked not to have personal information published)
- [2] Original student photos: Kristal Rosson, Courtlyn O’Grady
- [3] Original photo: Linda Reynolds
- [4] Clip from original student made video showing student: Kristal Rosson