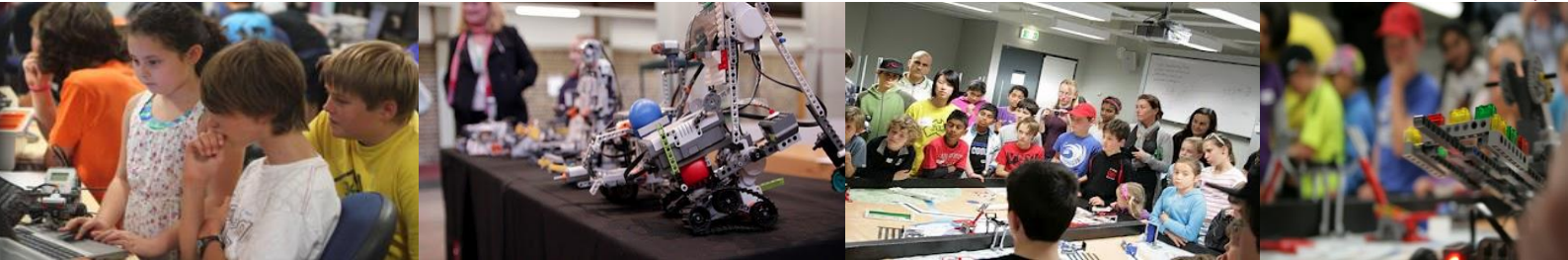
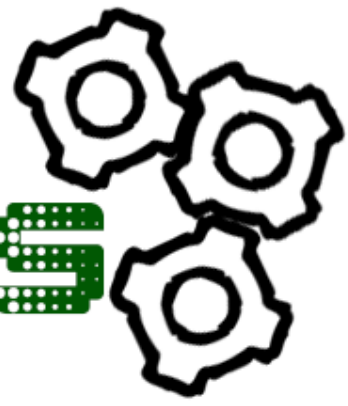


# Robocamps

Inspiring the Next Generation...



## Preparing a Robocamp

Preparing for a Robocamp is a long, messy, stressful and often hectic and last minute problem for FIRST® Teams ways to make this process simpler is always welcome.

Please note: Robocamps refers to a camp that involves using Lego® NXT Robots to teach kids about STEM (Science, Technology, Engineering and Maths). If you do not have NXT Robots, then alternative names will be required e.g. 'STEM Camps', 'Science Camps', etc.



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## 2. Where to Start?

It's always difficult to organize a Robocamp, there is so much to do, and think about. This section will help get things in order and organise a Robocamp.

### 2.1 Warning

Robocamps are not easy, without dedication, organisation and time, the camps may as well not be run if they are not prepared and played out properly. Once the organising is out the way, the camps should be fun, exciting and exhausting for both the runners of the camp and the kids.

### 2.3 What is a Robocamp?

A Robocamp bring day care into the 21st century through the use of Robots, LEGOs, computers and other technologies. Robocamps apart from those major differences are basically the same as other day care camps.

#### 2.31 Why Run a Robocamp?

Robocamps are a good way for teams to achieve a great set of goals-

- Community Outreach
- Spreading the message of STEM
- Fund Raising
- Great fun

Robocamps are all round great, and for FIRST® Team 3132, they have been the most efficient way to raise money for events.

#### 2.32 The Advantage

The advantage of Robocamps over other day care facilities comes in multiple forms. Robocamps:

- Are great learning tools for kids
- Can be as expensive or as cheap as you like
- Are generally held at educational facilities, which, for parents, is something that would make them want to send their children to the camp.

#### 2.33 Who Runs the Camps?

Robocamps are generally run by kids from an FRC, FTC or FLL team in order to raise money. Therefore a camp should be prepared, run and cleaned up by students of the team. It's generally best to have one student in charge of the camp, and one other student who know how to run a camp in case the main student is taken ill or injured. After that, camps can be a big or as little as you like, but remember, every student should be responsible for no more than 4 children.



### 3. Choosing a Location

A location that is safe, child friendly and open is imperative to a successful camp. Kids won't like cramped spaces, smelly spaces, and certainly not places with knives, bombs and killer dogs hanging around...

#### 3.1 What Kind of Location do you need?

The best places for camps are areas with plenty of desk space, to build and program robots, and plenty of floor space, to run activities. Having a large indoor space is also useful for lunchtime as a plan B for rainy days.

Close access to outdoor areas, such as good places to eat, sit and talk and places to play games such as soccer, tag and bull rush. This allows the kids to release energy and will definitely come in useful later in the day, when you have a head ache and you don't want to listen to screaming kids. Fields are also a good place to run activities that make lots of noise, as to avoid disturbing others.

#### 3.2 Factors Affecting Location-

Listing from most prominent-

1. Number of Kids
2. Space Available
3. Age of kids
4. Weather
5. Supplies
6. Budget

Other minor issues are- number of volunteers, type of kids, planned activities etc.



## 4. Selecting Dates

Choosing the right dates for camps will largely determine the number of kids you get. Choose them too late in the holidays and kids have found an alternative to Robocamps, too early and kids will probably be at school still.

### 4.1 Deciding Dates

The best time to decide your dates are at least 2 months before camps. This is because planning should revolve around the dates, and you will want to get flyers and marketing sources out to the public a month and a half before the camp is run.

#### 4.11 Camp Lengths

There are a few kinds of camps that can be run, all needing unique planning and structure. Generic camps are 1, 2, 3 and 5 day camps (4 days are awkward, as it means that it's a singular day that parents need to find day care for, this can prove to be difficult.) 1 day camps are easy, quick and you can charge more for one day of fun. Two and Three day camps are the most common and work best for large groups of kids. 5 day camps are very hard work and a lot of planning needs to go into them; however returns are generally very profitable. From past experience, it's best to go with shorter (2 or three day camps) over two or three weeks, it is less exhausting and much easier to ensure a better resulting camp.

#### 4.12 Difficulties

It can be difficult getting dates for camps done, the main problems being organising volunteers, schedules, and children because lining these dates up perfectly with the aforementioned problems can be messy and time consuming.

### 4.2 Final words of wisdom

Look at the dates for your camps from all perspectives, mentors, volunteers, scheduling, parents and children, once this is done, get a date that suits all parties involved and it's all happy times.



## 5. Scheduling

Scheduling in camps is imperative. Whether or not you actually follow them during camps is a different issue, but making sure there is actually a plan is the most important part of a successful camp.

### 5.1 Activities

In another document, called 'Robocamp Activities Explained', there is a list of activities that Team 3132 uses for our Robocamps. A simple list of them goes like this-

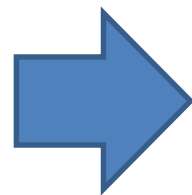
1. Mine Field
2. Sumo Bots
3. Robot Soccer
4. Line Following
5. Robot Skills
6. FRC Bots
7. Squishy Circuits
8. Human Circuits
9. Candium
10. Straw Structure
11. Get Over it!
12. Rubber Band Cars
13. Marshmallow Catapults
14. Slime
15. Drama Games
16. Fill In Games
17. Excursions

These activities cover a range of educational benefits, and are all fun for kids. Notice not all of the activities are not robot related; activities relating to science or must general fun are important to keep the kids interested. If you take a look through the other document, you will see what the activities are and how you can prepare for them. To see this document go to:

<http://thethunderdownunder.org/SOAR/index.htm>

### 5.2 Making Schedules

This section is about making the schedule, how to lay it out, organise it, as matter of personal opinion, colour code it. There are a few columns in there that are not all are necessary, however, the imperative ones are- Time, Activity, Delegate, Description, Equipment. A schedule template looks something like this-





A	B	C	D	E	F	G	H
Time	Activity	Delegate	Description	Comments	Ideas, games etc.	Equipment	
Day 1 of 3							
0845-0915	Fill in Activities		Quick, fun games for kids.		Zip, zap, zop (ask James), Puzzle games	Try and involve none	
0915-0920	Hello Kiddies!						
0920-1015							
1015-1045	Morning tea		Have healthier foods, fruit and such			Need To buy food	
1600-1700							
1145-1245							
1245-1345	Lunch						
1345-1445							
1445-1545							
			Have something tasty! i.e. Doughnuts, ice cream! Maybe Cake....				
1545-1600	Afternoon Tea						
1045-1145							
1700-1715	Good-bye		Kids leave				
Day 2 of 3							
0845-0915	Fill in Activities		Quick, fun games for kids.			Try and involve none	
0915-0920	Mornin'						
0920-1015							
1015-1045	Morning tea		Have healthier foods, fruit and such			Need To buy food	
1045-1145							
1145-1245							
			Kids eat lunch they brought with them	Take kids out to field after them eating their lunch, play games			
1245-1345	Lunch						



### 5.21 Timing-

A schedule should cover what time activities are being held, who is running it (your delegate), a description of the activity, and what equipment is required for the particular activity. It should be at the very least, an hour-by-hour schedule. Make sure this schedule goes for the ENTIRE day, leave nothing unplanned.

### 5.22 Delegating

Delegation of each task can be difficult it encompasses, working out who of your group is best suited to the activity, and then making sure that each delegate is ready for their activity. However, without some form of delegation to each task, planning becomes much harder. When delegating make sure the delegate knows exactly what they are doing, and what the activity is. Once delegating is done, it should then be the responsibility of the delegate to work out the materials needed (possibly even buy them). They are then, during the camp, to run the activity, planning each part of the activity, minute by minute, and making sure the kids fully understand the activity's rules and ideas.

### 5.23 Materials

Making sure there is the right amount of materials for a camp is imperative, otherwise activities will be boring, and will not run smoothly. When planning for a camp, there are a few materials that are axiomatic- plates, cups, serviettes, food and other eating materials need to be bought (for morning and afternoon tea). The rest of the materials are for you (the planner) to take initiative on, ensuring all delegates know their materials list. Don't worry about overstocking, just store the left overs in a box, all together. Make sure that someone does a stock check on all the materials so that you know what supplies you have.

### 5.3 Planning

Forward planning is important for a camp, making sure there is plenty of new\* and fun activities for kids to do. Make sure that the structure of your schedule is also logical, and follows some kind of pathway for teaching kids robotics, science, engineering and maths.

### 5.4 Revision

As one final note to go off, and schedule should be revised by the organiser of the camp, then revised again, then checked by someone else, and confirmed with the volunteers for the camp. Make sure all activities can be run and make sure any booking for items and materials is done long in advance.





\* 'New' being activities that either don't get boring, or ones that can be altered and changed so that previous robocampers, do not get bored.

## 6. Booking

The booking of materials and equipment will vary greatly between who is running the camps, what resources are available, and what you need to run the camp. This section is assuming that things need to be booked in advance. If certain materials and equipment items are named in which you do not need or own, skip that particular section.

### 6.1 What to Book?

Booking is very important; knowing what to book is probably useful as well. Listed in descending necessity order (based on Team 3132's camps)

1. Rooms
2. Laptops
3. Robots (NXTs)
4. Other materials/requirements

Booking these materials is very useful, provided that they are available that is.

### 6.2 When to Book?

Make sure that all of your materials, equipment and room needs are booked at least a month before a camp is run. This will help avoid confusing and sometimes disruptive events during camps.

When booking, make sure everything is done through your head mentor, or an adult, to ensure that everything is organised properly, and there is no confusion.



## 7. Volunteers

Volunteers make Robocamps happen. The idea of Robocamps is that they raise money for the team, and so the payment for the volunteers should be the money the team gets, and how they can use it for robots, outreach and other activities.

### 7.1 What do Volunteers Do?

Volunteers are the amazing people that will either be mentoring your camp, or running it. These are people that are going to be there each day of the camp, and will make the camp happen. Your volunteers can run activities, organise food, look after groups, look after kids etc.

#### 7.11 Mentors

Mentors during camps are there, not to run it, or even interact with the kids, but to ensure everything is okay, that the camp is running smoothly, and to deal with any 'adult' issues. All mentors need to be older than 18 years.

### 7.2 Recruiting

Recruiting volunteers should be organised long before the camp information is given to the public, making sure there are enough volunteers, around 7-10 for a large camp of 25-30 kids, and 4-7 volunteers for <20 kids, is important, otherwise controlling the camp will be extremely difficult. Make sure, along with volunteers, you recruit mentor early on in the planning stage.

#### 7.21 Organising

Organising your volunteers should be done so that ALL of the people involved know who is volunteering, and how to contact these people. Laying it out in a spread sheet can help significantly.

#### 7.22 Communicating

Communication is your friend, utilise it. Generally for a team it is useful to have a form of group email, for example Google groups. Communication is important to make sure that everyone involved remains in the loop, to make sure ideas, information and decisions are made available to anyone and everyone involved in your camps.

#### 7.23 Delegation

There are several roles a volunteer can take, generally your roles are

- Chef (really just the guy that preps food, can take other roles too)
- Co-ordinator (Runs the camp, shouldn't do anything else, keeps things on time, makes sure things run properly, organises paper work)
- Kids Carer (Looks after either a group of kids, or is there to make sure that kids behave, and don't attack each other.)
- Activity Runners (These people run an activity, can be one of the kids carers, they just need to be willing to run an activity- refer to [5.22](#))



## 8. Food

Providing food is a general courtesy and is not mandatory to a successful camp. In regards to food, it works best (most efficiently and easily) if only morning and afternoon tea is supplied. There is no need to do anything massive, no need to create feasts for each day, just enough to please the children.

### 8.1 What is the Food for?

The food is for the kids (not for mentors or volunteers\*) and is to keep the kids happy, with plenty of energy and to stop them moaning about being hungry. The food doesn't need to be anything complex, try fruit and veg for morning tea, and something nice, like cake, biscuits or something similar for afternoon tea. For drinks, offering both cordial and water is axiomatic.

### 8.2 Buying the Food

When buying the food, there should really just be a set list of what to buy each camp, and scale the quantities appropriate in proportion of the number of kids and the camp. Give the list to someone who is [delegated](#) (see 5.22) to getting the food prepared for the camp.

#### 8.21 Budgeting the Food

Kids are not generally fussy about the quality of food, buying things in bulk is always useful, especially things that do not go off and can be stored away for other camps. Buying the cheaper alternatives will mean that you get a larger return for your camps, and means less stress if food is wasted or ruined. HOWEVER, one exemption, don't buy cheap (questionable) fruit, it's never nice to eat, and kids won't appreciate it. Also, make note of any kids with allergies/intolerances and make sure you have food to supply food to them as well.

\*If mentors and volunteers are hungry during camps, reserve, or specifically buy mentor and volunteer food for yourselves.



## 9. Money Management- Budgeting

In order to get the best returns from your camps, make sure the amount of money that you spend on getting materials and food for the camps is minimal and purely necessary. Spending too much of your money before a camp is not going to produce great returns, rendering a camp useless.

### 9.1 What are you spending your Money on?

Materials, food and any marketing are your main expenditures of a Robocamp. Materials is all your equipment and such that you need for activities being run during the camp. The [Food](#)[see 8.1] is for the kids, mentors and volunteers and the marketing costs are simply printing costs and such.

#### 9.11 How much should you spend?

Try to limit spending as much as you can, but try not to compromise your activities. Be economical with your materials, buy on bulk and store it if it will be cheaper, look for bargains and make sure that you are buying the cheapest materials available (no need for premium paper). When it comes to food [\[see 8.21\]](#). And finally marketing can be cheap, try to avoid spending money at all on this, make a design in a A4 size, print it on normal paper, you'll be fine.

#### 9.12 Keeping track of your money

To avoid any confusion, argument or anything like that, make sure everybody has their receipts kept together, and are ready to claim back any personal money they spent to get materials. Make sure that the person managing the money is a mentor [\[see 7.11\]](#) and handles all money between parents, mentors and volunteers, as to avoid confusion.

### 9.2 Camp Pricing

Pricing your camp really depends of what your target audience is. If you're aiming at a low socio economic group, aim your prices low enough for the demographic, and visa-versa. On average, you would be pricing your camps at a price that is competitive. For example in Ryde, Sydney, Australia, Team 3132 charges \$45-\$55 per day. For that price we supply morning tea and afternoon tea.



## 10. Conclusion

Far be it from us to tell you how to run your camps. It is up to your team to decide how to run camps, when things happen, how to run activities and to organise your kids. However, some words of wisdom to send you on your way: Make sure you plan your camp to the best of your abilities, it will do you no favours to cut corners or try to do things the easy way, it's best to put the hard work in, because you will get a better return in the end.

Good Luck!

# Happy Robocamping!!

## The Thunder Down Under-

*Innovate. Improve. Inspire the World.*