



Zero Robotics Lesson Plan

This lesson plan is aimed at visiting mentors, without teaching degrees who have a strong background in engineering and programming. We will run through the first 4 lessons during the Sydney launch event, and we recommend that schools working independently make sure that they cover the same material early on in the competition.

Teams should be careful to spend time to thoroughly understand the game rules before they start programming - it will save them a lot of time later.

This lessons plan may not be perfectly suited to teams who are very new to programming, as it assumes basic coding knowledge up to and including functions.

Lesson 1: Intro to Zero Robotics

(Sydney based participants will do this at the launch event)

Get to know each other, chat about what your programming background is, what you hope to get out of zero robotics etc...

Read the student handbook

Look at the functions available in the API

Purpose: Identify students that have more experience coding, and place them in leadership / code testing positions. Make sure people understand the tools they have available to them.

Time: 30 mins

Outcomes: Students understand what is expected of them during the comp

Lesson 2: Understand the Game

(Sydney based participants will do this at the launch event)

Read through game rules thoroughly, while coming up with at least 3 different strategies

Purpose: Make sure everyone knows the rules (or at least where to look to find them) and to brainstorm

Time: 1 hour (with 5 min break)

Outcomes: Have a strategy that they can implement

Lesson 3: Functions

(Sydney based participants will do this at the launch event)

Plan out how your program will fit together including different functions for each task

Advanced teams will decide inputs and outputs for each function

Purpose: Break the competition into small steps that can be allocated to participants

Time: 30 mins

Outcomes: Have a strategy that they can implement

Lesson 4: Planning (Sydney based participants will do this at the launch event)

Draw up a Gantt chart.

Allocate different functions to different students

Questions to answer include. When will you be doing exams? When will you be on holidays? What's your timeline and who will be doing what task?

Purpose: Avoid doing all the work at the last minute. Prepare them for 'odd' international comp timeline

Time: 1 hour

Outcomes: Students have a sense of the timeline and some real world engineering experience

Lesson 5: Review

The functions and plans that you made during launch event are probably not perfect. What can you do to improve it? Advanced teams should get started programming

Purpose: Fill in any gaps in knowledge that wasn't covered during the launch event

Time: 30 mins - 1 hour

Outcomes: Students have a clear idea of what they need to do next

Lesson X Tips



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- Get students to email you their questions before each lesson, and have an idea of what needs to be taught
- Draw up a quick lesson plan. It should be at minimum as detailed as the ones above.
- [optional] Send the lesson plan to their teacher ahead of time so that they can support you and be more involved
- [optional] Leave students with “homework” that you expect them to have done before your next visit. Eg. Do MIT tutorials 1-5, complete 5 grok lessons, understand how pointers work