

# The Dragster Challenge

## The challenge

Design and build a dragster.

## The details



## Setup

A 4-metre race track with a black finish line at the end.

## Constraints

The robot can have as many motors and wheels as you like, and be as big as you like, but it can only have one NXT.

The robots will start behind the starting line, and must not start moving until they hear a loud sound (i.e. "go").

## Robot design

Design and build a motorised vehicle using the NXT. The vehicle should start running as soon as it hears a loud sound. The only construction restriction is that you are limited to one NXT brick.

Before you start building, you should consider some alternatives and do some research... Your options might include one more motors, gearing the motors up or down, ...?

Other design factors to consider include gear ratios, friction, and the centre of mass of your robot.

## Program

The program for this robot will be nice and simple - the program should wait for the sound sensor to hear a noise and then turn on the motor(s). The robot should wait until it sees the black finish line and then set the motors to coast.

## Report

Write a brief report about your approach to the challenge addressing the following questions...

- Who was in your team?
- What research did you do?
- What was your approach to the design?
- What problems did you have and how did you fix them?

- How did your robot perform (including your dragster's best speed)
- What did you learn?

## **The Dragster Challenge stages**

1. Research and Plan
2. Design
3. Program
4. Test
5. Run