**Task**

You are challenged to design a vehicle that will compete in a timed challenge where you must navigate through a line pathway followed by a space that has no line but is enclosed by walls. Once activated, you should not touch your vehicle again, except for moving it from one state area to the next (i.e., lines to spaces).

Points are as follows:

Everybody starts with 180 points.

* -1 point for every second passed
* +1 point for each cm travelled
* +10 points for each transition that doesn't require physical interaction, but no points will be deducted for manual transitions
* -10 points each time a team must manually put their solution back on track

The highest score wins. Teams forfeit if they reach 0 points.

The focus of the challenge is to design a vehicle that can complete the following tasks:

* is automated
* Will not move until a button has been pressed
* can follow a line
* can navigate an enclosed space with no line/path
* can handle the transition from line tracking to space navigation (optional: without direct/hands-on interaction)

You are limited to the following resources:

* x2 motors
* x2 wheels
* x1 Arduino mega
* x3 distance sensors
* x2 sheets of A4 Cardboard
* x1 meter of masking tape
* x2 sticks of hot glue
* x1 button
* x1 H-bridge controller (tutorial coming)
* x2 servo motors (tutorial coming)
* x1 additional sensors for direct-free decision making

Required outputs:

1. A poster that documents your :

* visual thinking to come up with a concept for a vehicle that would complete the challenge, which includes conceptual tools such as sketching, brain mapping, and visual prototyping

2. A second poster that documents your

* lightweight specification, including process diagramming, documents, decision flow, CAD/Design files etc.
* The implement their design
* Resource consumption
* your review of your design against other solutions

3. Your implementation files, including videos of your solution meeting the different objectives.

4. Documentation where you evaluate your team mates and estimate how much work out of 100% they did.