## Lesson 29 – Activity Sheet

## Getting Started

* It is not just pedestrians and other road users we need to avoid in our self-driving car but also road & street furniture. Road and street furniture is the term used for objects and pieces of equipment installed along streets and roads for various purposes
* Road furniture includes benches, traffic barriers, bollards, post boxes, phone boxes, streetlamps, traffic lights, road signs, bus stops, war memorials and waste receptacles
* The design and placement of furniture takes into account aesthetics, visual identity, function, pedestrian mobility and road safety

## Success Criteria

* Identify common road furniture
* Design and build obstacles that can be place on your track
* Test your collision avoidance system using a range of objects

|  |  |  |
| --- | --- | --- |
| **Obstacle** | **Material** | **Approx. Size** |
| Human Pedestrian | Putty/Plasticine | 100mm high |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

## Pro-tip

* Consider the best materials you can use to simulate real objects eg putty or plasticine for people, cardboard/tinfoil for signs and barriers etc

## Test Time

* What happens if the object you are avoiding is less than 3 cm in height?
* What happens if the object you are avoiding is less than 3 cm in width?
* Does the position of the sensor impact reliability?

## Stretch Tasks

* How will vehicle speed affect reliability?
* What happens is the object you are avoiding is hollow?
* What happens if the object you are avoiding is soft?

## Final Thoughts

* Today we extended our work with the ultrasonic sensor algorithm. We have considered the objects we might encounter and build test models to simulate these
* By using different materials we could consider how reliable this method will be