# Lesson 29 – Final Project – Smart Car Collision Avoidance System 2

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| * Considering the world around them and not just focusing on what’s directly in front of them. | * Identify common street furniture * Design and build obstacles that can be place on your track * Test your collision avoidance system using a range of objects |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * Give Learners plenty of opportunity to test and adjust their algorithms | **Expected Progress:**   * Learners identify and build a range of obstacles   **Good Progress:**   * Learners create an algorithm to test their obstacles making adjustments through testing (the car stops at the right point)   **Exceptional Progress:**   * Learners attempt a Stretch Task |
| Key Concepts | Key Words |
| * How the material and size of the obstacles affects the ability to avoid it | * Street Furniture * Collision * Avoidance * Sensor |
| Differentiation | Resources |
| Some Learners may become frustrated with the reliability of the sensor in classroom environments | * Lesson 29 ppt * Lesson 29 Activity Sheet * PC * Paper, Pens, Pencils * Craft materials – card, wood, tin foil, plasticine etc * Access to <https://makecode.microbit.org> * micro:bit * Bit:Bot * HC-SR04 Ultrasonic Sensor * Wires and clips as required |
| Lesson Flow | |
| * Introduce the Learning Objectives * Link to Lesson 28 * Link to Lesson 4 * Discuss the objects that cars might see during a normal journey, focus on everything from signs and pedestrians to other vehicles. * Show Learners the video and use it to help identify common obstacles * Get Learners to make and test a range of different obstacles * Encourage Learners to attempt the Stretch Tasks | |
| Making | |
| * Range of obstacles from craft materials | |