# Lesson 37 – Final Project –Smart Car Mini Extension Projects

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| * Understanding that technology is reusable, and we don’t have to reinvent the wheel each time. * Technology from one sector can be adapted and applied to another | * Design alternative uses for the technology within your autonomous vehicle with an environmental impact * Design alternative uses for the technology within your autonomous vehicle with a commercial or business impact * Design and develop alternative uses for the technology within your autonomous vehicle with an entertainment impact |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * Give the students free reign to come up with wacky and off the wall ideas. Don’t stifle their creativity * When moving to Sumo – get the students to come up with a modified set of rules that they agree on. * Have a prize for the winner | **Expected Progress:**   * Can consider alternative uses for their autonomous vehicle technology   **Good Progress:**   * Design, develop and refine an algorithm for car sumo   **Exceptional Progress:**   * Students have attempted a Stretch Task |
| Key Concepts | Key Words |
| * Reusability * Planning algorithms | * Reusable * Adapted * Alternative |
| Differentiation | Resources |
| Some students will not want to present to an audience.  Ensure students work in a supportive nature and are aware of rules when criticising other people work | * PC * Access to <https://makecode.microbit.org> * micro:bit * Bit:bot if required * Paper, Pens, Pencils * Line follower templates (Lesson 7) |
| Lesson Flow | |
| * Introduce the Learning Objectives * Review what they have done over the last few weeks and how far they have come * Give out the Lesson Activity Sheet * Discuss re-usability (nice link to functions here from lesson 22) * Discuss how the technology could be modified and reused in different sectors. Examples like driverless taxi are a simple idea but also using sensor to create automatic pool cleaners, vacuum cleaners or even pooper scoopers for the park * Get student to generate a list of idea on the Activity Sheet. Try to get them to think specifically about how the technology can be reused or how additional tech could be added to give upgraded/increased functionality * Set the scene for Car Sumo. Get the students to amend and agree a set of rules and create the Sumo ring. * Use the planning sheet to plan their algorithm to try and ensure they win * Give students and opportunity to test and compete * Encourage students to attempt the Stretch Tasks | |
| Making | |
| * Algorithm for Car Sumo * Car Sumo ring * Modified car and software for Car Sumo | |