**Year 7 – Elements of a self-driving car 70min** **Lesson** **2**

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| **Learning Intentions** | **Lesson Outcomes** |

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| * Students explore components of a self-driving car * Explore solutions to roads for self-driving cars * Explore insurance implications * Design parts of a self-driving car | * Revise ethical dilemmas with self-driving cars * Find components of a self-driving car and combine into a current solution for self-driving cars * Propose modifications to environments to suit self-driving cars * Explore insurance implications of self-driving cars * Design a self-driving car * Understand occupations which design self-driving or autonomous systems |

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| **Australian Curriculum Content Descriptors** | | **Australian Curriculum General Capabilities** | |
| **Science Understanding**  Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE120)  **Design and Technologies**  Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of technologies and designed solutions for preferred futures (ACTDEK029) | | **Personal and social capability** – Social management  **ICT Capability –** managing and operating ICT | |
| **Assessment** | | | |
| **Formative assessment**  Two worksheets to be filled out in class related to activity. | | | |
| **Phase/Slide** | **Learning Activity** | | **Resources** |
| Slide 1 - 3 | * Greetings * Introduction * Acknowledgement of Traditional Custodians * Lesson outcomes | | PowerPoint |
| Slide 4  Engage | * Review last lesson’s content - social, ethical and sustainability/environmental implications | | PowerPoint |
| **Phase/Slide** | **Learning Activity** | | **Resources** |
| Slide 5-6  Engage | * Explore components of a self-driving car (car must map the road, sense the road and negotiate its place on the road) * Label in general terms the car * Learn technical terms from slide 6 | | PowerPoint |
| Slide 7-9  Explore | * Use worksheet labelled ‘*Investigating components’* to allow students to draw and label components * Slide 8 and 9 provides extra information on some components * Work in pairs | | PowerPoint and worksheet Investigating components |
| Slide 10-11  Explore | * Self-driving cars and the environment * Problems with current roads that must be changed to accommodate self-driving cars (potholes, school zones, extreme weather on roads) * Brainstorm problems and propose solutions on slide 11 | | PowerPoint |
| Slide 12-14  Explore | * Insurance implications * Brief explanation of insurance (3rd party and comprehensive) | | PowerPoint |
| Slide 15-16  Explain | * Question: will new types of insurance need to be made available? * Question: what will the insurance be called and what will it cover? * Brainstorm for 5 minutes in groups | | PowerPoint |
| Slide 17  Elaborate | * Use worksheet labelled ‘*Generating and refining ideas’* * Students are to draw and label their own self-driving car ensuring it can **sense** the road, **map** the road and **negotiate its place** on the road. * Work in same pairs * Students must label components in accordance to worksheet ‘*investigating components’* | | PowerPoint and worksheet Generating and Refining ideas |
| Slide 18  Evaluate | * Wrapping up of ideas | | PowerPoint |
| **Phase/Slide** | **Learning Activity** | | **Resources** |
| Slide 19 – 21  Explain | * Explain how you get working in the industry * Industry jobs – many unheard of will need looking up to explain what they are * What to study while at school * What to study after school | | PowerPoint  Internet – search what the jobs are |
| Slide 22 - 23 | * Next lesson * Explain the design challenge * Acknowledgements | | PowerPoint |