

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

Learning Intentions		Lesson Outcomes
<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> 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
Australian Curriculum Content Descriptors		Australian Curriculum General Capabilities
<p>Science Understanding</p> <p>Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE120)</p> <p>Design and Technologies</p> <p>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)</p>		<p>Personal and social capability – Social management</p> <p>ICT Capability – managing and operating ICT</p>
Assessment		
<p>Formative assessment</p> <p>Two worksheets to be filled out in class related to activity.</p>		
Phase/Slide	Learning Activity	Resources
Slide 1 - 3	<ul style="list-style-type: none"> Greetings Introduction Acknowledgement of Traditional Custodians Lesson outcomes 	PowerPoint

Phase/Slide	Learning Activity	Resources
Slide 4 Engage	<ul style="list-style-type: none"> Review last lesson's content - social, ethical and sustainability/environmental implications 	PowerPoint
Slide 5-6 Engage	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Use worksheet labelled '<i>Investigating components</i>' 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Insurance implications Brief explanation of insurance (3rd party and comprehensive) 	PowerPoint
Slide 15-16 Explain	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Use worksheet labelled '<i>Generating and refining ideas</i>' 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 '<i>investigating components</i>' 	PowerPoint and worksheet Generating and Refining ideas

Phase/Slide	Learning Activity	Resources
Slide 18 Evaluate	<ul style="list-style-type: none"> • Wrapping up of ideas 	PowerPoint
Slide 19 – 21 Explain	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Next lesson • Explain the design challenge • Acknowledgements 	PowerPoint