**Stage 1 Digital Technologies**

**Assessment Type 1: Project Skills**

**Data Analytics and Innovation**

**Purpose**

You will be provided with an issue to be addressed. This may include: ocean safety (e.g. Surf Life Saving), creating a device or system which supports the hearing impaired, raising awareness for a local club or addressing an issue within the school community.

You are to investigate the ways that data can be used, and is used, by entrepreneurs and the ethical considerations involved in the decision making data collection use and storage.

You will work collaboratively to produce a survey, or other data collection tool, which will generate data that is relevant to their issue, which can be analysed later in the course.

**Assessment Description**

* Working collaboratively in groups of 2-3, produce a development portfolio that shows empathy with a relevant issue and the community of people impacted. This may include:
* a digital pain journal that outlines details of pain points for the community of people impacted
* evidence of methods used for ‘staying in the problem’, such as a pain vs frequency matrix, empathy interviews, five whys exercise etc.
* preparation materials for, and recording of, a stump speech (30 seconds each explaining the ‘why’, ‘how’, and ‘what’)
* an affinity map/diagram that looks at the different opportunities and similarities of redefined problems
* attempts at reframing the original issue, such as evidence of a ‘dreams and gripes’ session etc.
* Program a digital data collection tool, such as a questionnaire, that is able to collect data from a range of sources and organise that data in various ways. Your data must be collected with ethical considerations in mind. This tool should be supported with annotations that detail the design and ethical decisions that have been made.
* Gather additional data through researching the issue via the Internet and/or relevant databases.
* Keep an electronic record of evidence (notes, reflections, draft design annotations etc.) of your contributions, and others’, to the collaborative project.

**Assessment Conditions**

You are to collaboratively present the following in a multimodal presentation (as negotiated with your teacher), with each person contributing a maximum of 5 minutes.

* Development portfolio
* Digital data collection tool
* Evidence of contributions to the collaborative project

**Assessment Design Criteria**

CT1 Application of computational thinking skills to explore problems and possible solutions

CT2 Development and application of programming skills to create a digital solution or prototype

DE3 Contribution to collaborative work

RE1 Research into and discussion of ethical considerations in digital solutions and/or data use

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|  | Computational Thinking | Development and Evaluation | Research and Ethics |
| A | Insightful and sustained application of computational thinking skills to explore problems and possible solutions.  Focused development and strategic application of a wide range of programming skills to create a digital solution or prototype.  In-depth analysis of patterns and relationships in data sets and/or algorithms to draw insightful conclusions. | Purposeful and well-considered development and application of program-design skills to create digital solutions or a prototype that include innovative features.  Insightful evaluation of the effectiveness of a digital solution or prototype.  Insightful and proactive contribution to collaborative work. | In-depth research into and discussion of the ethical considerations in digital solutions and/or data use. |
| B | Some insights in the application of computational thinking skills to explore problems and possible solutions.  Thorough development and well-considered application of a range of programming skills to create a digital solution or prototype.  Some depth in analysis of patterns and relationships in data sets and/or algorithms to draw well-informed conclusions. | Well-considered development and application of program-design skills to create digital solutions or a prototype that include one or more innovative features.  Well-considered evaluation of the effectiveness of a digital solution or prototype.  Mostly consistent and effective contribution to collaborative work. | Some depth in research into and discussion of the ethical considerations in digital solutions and/or data use. |
| C | Application of computational thinking skills to explore problems and possible solutions.  Competent development and application of programming skills to create a digital solution or prototype.  Description, with some analysis of patterns and relationships in data sets and/or algorithms, to draw generally informed conclusions. | Development and application of program-design skills to create digital solutions or a prototype that may include one or more innovative features.  Description, with some evaluation of the effectiveness, of a digital solution or prototype.  Effective contribution to collaborative work. | Considered research into and discussion of the ethical considerations in digital solutions and/or data use. |
| D | Some application of basic computational thinking skills to describe problems and possible solutions.  Basic development and some application of programming skills to create one or more partial solutions or prototypes.  Basic description of patterns and relationships in data sets and/or algorithms to draw one or more basic conclusions. | Some development and application of program-design skills to create one or more partial solutions or prototypes.  Basic description of a digital solution or prototype and one or more aspects of its effectiveness.  Some contribution to collaborative work. | Basic research into and discussion of the ethical considerations in digital solutions and/or data use. |
| E | Attempted application of a limited number of simple computational thinking skills to describe a problem and/or possible solution.  Attempted development and/or application of basic programming skills.  Attempted description of one or more patterns and relationships in data sets and/or algorithms. | Attempted development and application of program-design skills.  Attempted description of a digital solution or prototype.  Limited contribution to collaborative work. | Attempted discussion of an ethical consideration in digital solutions and/or data use. |