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| **Assessment task**  Project | **Task title:** Esports Tournament Database  **Purpose:** Students acquire, interpret and model Mario Kart data using Excel skills such as conditional formatting, conditional IF statements and graph creation tools. They convert integers to binary and hexadecimal and creatively display colours using hexadecimal colour conversion |
| **Achievement standard**  By the end of Year 8 students develop and modify creative digital solutions, decompose real-world problems, and evaluate alternative solutions against user stories and design criteria. Students acquire, interpret and model data with spreadsheets and represent data with integers and binary. They design and trace algorithms and implement them in a general-purpose programming language. Students select appropriate hardware for particular tasks, explain how data is transmitted and secured in networks, and identify cyber security threats. They select and use a range of digital tools efficiently and responsibly to create, locate and share content; and to plan, collaborate on and manage projects. Students manage their digital footprint. | |

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| **Relevant aspects of the Achievement standard** | | **Relevant content descriptions** | **Australian Curriculum Elaborations** | **Alignment to the task** |
| **Knowledge and Understanding** | represent data with integers and binary | **AC9TDI8K03**  investigate how digital systems represent text, image and audio data using integers  **AC9TDI8K04**  explain how and why digital systems represent integers in binary | * explaining how digital systems represent data in binary, for example by converting a character to its Unicode value, then converting that value into binary * explaining how digital systems represent bitmap images (for example PNG and JPEG) as the colour of each pixel in separate red, green and blue (RGB) channels ranging from 0 to 255, and represent Scalable Vector graphics (SVG) using the geometry of lines and shapes | * Convert the raw overall score into binary, and then into hexadecimal format. * Using the hexadecimal values and knowledge of how colours are displayed on computers, create a colour-map of student scores |
| **Processes and Production Skills** | acquire, interpret and model data with spreadsheets | **AC9TDI8P01**  acquire, store and validate data from a range of sources using software, including spreadsheets and databases  **AC9TDI8P02**  analyse and visualise data using a range of software, including spreadsheets and databases, to draw conclusions and make predictions by identifying trends | * storing acquired data using specialised and general software appropriate for how it will be accessed and manipulated, for example a spreadsheet for visualisation or a pre-defined database for filtering and queries * visualising multidimensional data by choosing appropriate graphs, for example a scatter plot of food prices and sales, coloured by each food’s sugar content, or diagrams such as a social network diagram and maps of crime rates by location to reveal trends, outliers or other information | * Acquire Mario Kart race data from the class races that will be run during the term. This data must show a student’s race position each lap. * Use conditional formatting to highlight the cells to make it easily distinguishable what race position a student is. * Use conditional IF statements to calculate a player’s overall score from their 3 laps. * Graph this data using your best knowledge of appropriate graphs. |