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| Subject Title: Digital Technologies Year level: 10  Learning Area: Information Technology Semester: 2 Lessons per week: 3 x 50 mins | | | | | | |
| **Subject Description**  Students learn computational thinking and programming skills. They do this by learning how to decompose problems, recognise patterns, and create algorithms to solve problems using flow charts and pseudocode. Students also learn how to create Websites using HTML/CSS and JavaScript, working collaboratively to design, create, and evaluate a solution. Data Analytics is also covered. Students acquire, store, validate and process data into meaningful information using spreadsheets. | | | | | | |
| **AC Achievement Standard**  By the end of Year 10, students explain the control and management of networked digital systems and the security implications of the interaction between hardware, software and users. They explain simple data compression, and why content data are separated from presentation.  Students plan and manage digital projects using an iterative approach. They define and decompose complex problems in terms of functional and non-functional requirements. Students design and evaluate user experiences and algorithms. They design and implement modular programs, including an object-oriented program, using algorithms and data structures involving modular functions that reflect the relationships of real-world data and data entities. They take account of privacy and security requirements when selecting and validating data. Students test and predict results and implement digital solutions. They evaluate information systems and their solutions in terms of risk, sustainability and potential for innovation and enterprise. They share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects. | | | | | | |
| **KEY: Australian Curriculum Capabilities**: [Literacy](http://www.australiancurriculum.edu.au/GeneralCapabilities/Literacy)  Numeracy  ICT  Critical and Creative Thinking  Personal and Social  Ethical Understanding [Intercultural Understanding](http://www.australiancurriculum.edu.au/GeneralCapabilities/Intercultural-understanding)  **Australian Curriculum Cross-Curricular Priorities:** ATSIH**:** Aboriginal & Torres Strait Islander Histories; AAEA: Asia & Australia’s Engagement with Asia; S: Sustainability | | | | | | |
| **Biblical World View Questions / Big Picture Thinking** *(IDEAS T&L Vision Statement related key words – more discussion to come on this)* | | | | | | |
| **Scope & Sequence Content** | | | | | **Assessment Tasks & Weighting** | **Key Resources** |
| **Term** | **Week** | **Topic** | **Content Descriptions** | **Elaborations** |
| **Term 3** | 1 – 2 | HTML |  | * Overview of main HTML tags * Creation of first HTML page |  | Worksheets:   * Overview of HTML * Creating first HTML Page |
| 3-4 | CSS | Analyse simple compression of data and how content data are separated from presentation (ACTDIK035) | Introduction to CSS, how to link a CSS page and add elements to HTML  Create a page for Jeff’s Blog |  | Worksheets:   * Creating first HTML page with CSS * Understanding CSS * Jeff’s Blog |
| 5-6 | JavaScript | Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language (ACTDIP041) | Syntax of JavaScript in a HTML page  Calling a function from a button.  Updating text fields and labels.  Recognising when a radio button has been clicked.  Filling a select list from an array.  Recognising when a list item has been selected.  Formatting numbers to 2 decimal places. | Folio Task: Evidence of learning via worksheets and code book – 30% | Worksheets:   * 4 exercises on JavaScript * 6 exercises on JavaScript with HTML |
| 7-10 | Website Assignment | Analyse simple compression of data and how content data are separated from presentation (ACTDIK035)  Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics (ACTDIP039)  Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases (ACTDIP040)  Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language (ACTDIP041) |  | Skills Task: Creating an interactive website – 40% |  |
| **Term 4** | 1-4 | Data Analytics | Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements (ACTDIP036)  Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data (ACTDIP037) | Acquiring and storing data from a range of sources.  Sorting data into meaningful information.  Displaying the data in an appropriate and meaningful manner. |  | <http://www.abs.gov.au/> |
| 5 – 6 | Data Analytics Assignment | Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements (ACTDIP036)  Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data (ACTDIP037) |  | Skills Task: Collecting, Analysing and Displaying Data – 30% |  |