STRAND	Knowledge and Understanding			Processes and Production Skills							
	Digital systems	Representation of data	Collecting, managing and analysing data		*Creating Digital Solutions by:*						
					Investigating and defining	Generating and designing		Producing and implementing	Evaluating	Collaborating and managing	
Content Description	Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems (ACTDIK034)	Analyse simple compression of data and how content data are separated from presentation (ACTDIK035)	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)	Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs (ACTDIP038)	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)	Evaluate critically how student solutions and existing information systems and policies, take account of future risks and sustainability and provide opportunities for innovation and enterprise (ACTDIP042)	Create interactive solutions for sharing ideas and information online, taking into account social contexts and legal responsibilities (ACTDIP043)	Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability (ACTDIP044)

Sequence of Lessons / Unit	Approx. time rq'd	Year	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #
Collaborative project: What matters to you?	10-12 hrs	10	☑	1	☐		☐		☐		☐		☑	5	☐		☐		☐			7, 9		3, 7, 10

Years 7 and 8 Achievement Standard	Years 9 and 10 Achievement Standard	
By the end of Year 8 • Students distinguish between different types of networks and defined purposes. (1) • They explain how text, image and audio data can be represented, secured and presented in digital systems. (2) • Students plan and manage digital projects to create interactive information. (3) • They define and decompose problems in terms of functional requirements and constraints. (4) • Students design user experiences and algorithms incorporating branching and iterations, and test, modify and implement digital solutions. (5) • They evaluate information systems and their solutions in terms of meeting needs, innovation and sustainability. (6) • They analyse and evaluate data from a range of sources to model and create solutions. (7) y use appropriate protocols when communicating and collaborating online. (8)	By the end of Year 10 1. Students explain the control and management of networked digital systems and the security implications of the interaction between hardware, software and users. 2. They explain simple data compression, and why content data are separated from presentation. 3. Students plan and manage digital projects using an iterative approach. 4. They define and decompose complex problems in terms of functional and non-functional requirements. 5. Students design and evaluate user experiences and algorithms. 6. 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. 7. They take account of privacy and security requirements when selecting and validating data. 8. Students test and predict results and implement digital solutions. 9. They evaluate information systems and their solutions in terms of risk, sustainability and potential for innovation and enterprise. 10. They share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects.	

Collaborative project: What matters to you?
Students choose an issue that matters to them and, in collaborative teams, create a media plan and campaign to raise awareness of the issue and gain some traction with (and feedback from) their identified audience.

Through this practical task, students compare and contrast traditional media with new media communication, which makes use of the digital world. They consider their audience's access to technology and particular devices relevant to their identified forms of communication. Each team takes into account privacy issues and personal information, as well as potential ethical issues and how these will be dealt with.

As part of the task, students self-identify their skills and use this approach to inform assigning roles and responsibility within their team for completing sub tasks associated with their project. Their media plan and campaign should show how they are using multiple methods of communication to reach their audience, and the relationship between these approaches. As a team they decide on how to collaborate, store and manage files and how to keep track of their task development and completion. They evaluate their media plan and campaign and the extent to which their plan connected with their audience.

The project can integrate English in focusing on writing styles such as persuasive or informative texts, taking into consideration writing for digital platforms. It also has links to The Arts: Media arts; for example, Plan and design media artworks for a range of purposes that challenge the expectations of specific audiences by particular use of production processes (ACAMAM076).

Flow of activities				
Activities:	Identify an issue	Traditional vs New media	Manage the project	How well did we do?
Questions to guide exploration	*What issues matter to me?*	*What media can we use to reach our audience?*	*How will we manage the project and effectively utilise our skills?*	*How well did our media plan and campaign work and how did we work as a team?*
Short text	Identify an issue that matters, the information needed and from where it will be sourced.	Compare benefits and disadvantages of traditional media and new media to convey a message.	Set up project management processes and utilise team skills to create the media for the campaign.	Evaluate the project outcomes and the way the team worked to complete the tasks.
Australian Curriculum alignment	Collaborating and managing (ACTDIP043/ACTDIP044) Generating and designing (ACTDIP039/ACTDIP040)	Collaborating and managing (ACTDIP043/ACTDIP044) Generating and designing (ACTDIP039/ACTDIP040)	Collaborating and managing (ACTDIP043/ACTDIP044) Generating and designing (ACTDIP039/ACTDIP040) Producing and implementing (ACTDIP041)	Evaluating (ACTDIP042) Collaborating and managing (ACTDIP043/ACTDIP044)
What's this about?	This project-based task taps into what students are passionate about and aims to integrate the use of 'new media' to gather supporters and enact change through the development of a thoughtful plan and specifically created media. The first step is to identify the issue, decompose the problem and identify how they will validate data from different sources. Give consideration to these questions: ● What do we know about the issue and how can we find out more? ● What are the project goals? ● How will the media we create help teams achieve the project goal?	**Traditional media** include: ● printed materials (books, magazines, and newspapers), broadcast communications (TV and radio), film, and music. **New media** include: ● all forms of communication in the digital world, including online news, YouTube, the Internet, and social media. The Internet (for many people) is used every day; it enables us to receive news, do business, conduct research, contact friends and relatives, apply for jobs, and even watch TV. New media often outperform traditional media for three main reasons: 1. It is more immediate.	**Multi-pronged media** When completing a multi-pronged media campaign, students need to consider the most suitable media to deliver the goals of the project. Each media type has specific formats and conventions that need to be considered. For example, a tweet has a set amount of characters in a message; a webpage contains information organised under headings with consideration of readability; a video clip provides a moving image, but audience attention span and the amount of information being conveyed need consideration. **Project management**	**Solution evaluation** In this case the solution is a media campaign together with associated media. These should be evaluated against criteria that described the essential features of particular components. A relevant component of the evaluation is the team's demonstration of how they considered and responded to sustainability requirements. **Student performance evaluation** Typically, teachers are required to report on students' performance. As students progress through the project they collect and keep a variety of pieces of evidence of their input/work.

	● What are the functional and non-functional requirements of the campaign? **Requirements / Examples table:** <table><tr><td>**Requirements**</td><td>**Examples**</td></tr><tr><td>Functional requirements</td><td>These may include: ● information sharing ● legal requirements ● data security ● sustainability.</td></tr><tr><td>Non-functional requirements</td><td>These may include: ● user access to technology ● usability ● reliability ● scalability.</td></tr></table>	2. It is often free. 3. It can reach a wider number of people.	Project based tasks typically utilise a range of skills. For the team to work effectively and efficiently, roles and responsibilities need to be identified and assigned. Tasks need to be clearly defined and a timeline for completion set and agreed to by the team members responsible. These tasks need to be monitored by the project manager to ensure the final project is completed by the agreed deadline.	
The focus of the learning (in simple terms)	Provide students with an opportunity to brainstorm a list of issues that they feel passionate about. It may help to provide some issues of interest to start the process. The website iSideWith.com provides a useful starting point for you to select an issue that matters or at least spark an idea about what is actually of interest. Note: Be wary of topics that may create difficulties for any of your students. Set up guidelines for respectful discussion before proceeding. You may want to provide a curated list. Introduce and have students discuss what they think this statement means: *When you use your voice, you can change the world.* Provide a scaffold to enable students to describe an issue and their stance or point of view. Give some guidance to help them gather data that supports their view and also list opposing views. What persuasive arguments can they use to support their view? What data can they locate that can be used in their messaging? Invite students in collaborative teams to plan a form of media campaign and create associated media to get their message out to an identified audience. Media examples may include blogging (Blogger), microblogging (Twitter), social media (Facebook), photo sharing (Instagram) and websites. Students research what mediums best suit particular target audiences so functional requirements could be relevant (secure, accessible, multi-platform, etc). A completed media plan that includes: 1. Issue and goal stated clearly (what the issue is and what it is you are proposing to do about it)	Provide students with access to a suitable technical solution for effective collaboration using relevant online tools (for example, OneNote, Google Drive) to share and edit documents, or a Cloud-based solution. As a class, compare and contrast 'traditional media' with 'new media' as forms of communication. Create a table to record ideas online in a shared space. Summarise ideas from the completed table. What are the differences, similarities, benefits, challenges, concerns and any potential risks? Students collaboratively, in teams, investigate different types of media in detail. They: 1. provide examples of where one type of media can be used to greater effect than the other form of media 2. describe the format and conventions of various types of media 3. identify those types of media that can be used as part of their campaign. **Dealing with different media** Give consideration to: ● management/moderation of YouTube comments and other forms of media where there are opportunities for comment ● different formats and conventions ● audience reach and access ● security and ethics. Ask students to identify and consider any associated constraints of their project, when following and reviewing their media plan and campaign. Some of these may include: ● challenges/inability to effectively reach the intended audience due to restrictions around access to personal information	Provide teams with an example of roles and responsibilities they can edit and customise for their project. Each team member self-identifies the role they feel best meets their skill set. The team then assigns and agrees on roles and timelines. The project manager takes responsibility for managing the deliverables. Be mindful of gender and cultural equity and consider a 'buddy' who can provide the project manager with feedback as required. Encourage students to set up processes that enable team members to critique and comment on each other's work. The content manager should advise the team of file management processes including file naming. **Role / Example responsibilities table:** <table><tr><td>**Role**</td><td>**Example responsibilities**</td></tr><tr><td>Technical helper</td><td>Assist teacher and students to: ● install apps on devices (including iOS and Android phones and tablets and Windows and Mac computers) ● demonstrate the use of relevant applications including collaborative online tools and software to create infographics or manage projects.</td></tr><tr><td>Content manager</td><td>● Track content development. ● Lead content choice discussions. ● Oversee file management</td></tr><tr><td>Content creators</td><td>● Create video clips. ● Create PowerPoint content and export to video. ● Take photographs/source images. ● Create draft social media posts.</td></tr></table>	When students have completed their media for the media campaign, ask them to evaluate the final outcome against the agreed criteria. As a team, students complete and submit the table identifying the tasks to be completed, the dates for deliverables and the actual completion dates. Students provide evidence for the work for which they were responsible and provide any commentary about their progress and meeting the timelines as set out in the table. Students could record in the table any changes to their intentions: How did they make adjustments? What problems did they experience? Why did the project take more hours to complete than planned, etc.

2. Media creation (how you will achieve the goals through the use of media)
3. Topic research (background to the issue and current events)
4. Audience/stakeholders (who are you going to target in this campaign:
   a. demographics
   b. location/s
   c. attitudes
   d. media habits
   e. culture/s.
5. Call to action: What do you want people to do?

Note that the campaign plan can be adjusted as students progress through the project. Ask students to keep evidence of the iterations.

For an 'audience' it may be possible to have a 'real' audience, such as school community, a proactive organisation (maybe an environmental group or gender-equality group), or perhaps another year level at the school.

- not able to use platforms due to school restrictions.

An essential part of the project is to clarify the task with each group and develop agreed criteria that can be used to assess the final solution.

	• Create blog articles. • Create infographic/s.
New media expert	• Provide guidelines on privacy and responsible use. • Provide guidelines on content creation.
Topic research expert	• Provide key knowledge and information on the issue. • Provide relevant data to be used in the campaign. • Keep a log of the information and data used, and correctly cite resource origin.
Project manager	• Monitor timelines. • Alert team members if they are falling behind in completing the task.

Once the roles and responsibilities have been established, students can start to research and create content.

Content might include:
1. a blog article and same article repurposed for online newspaper/print news
2. several Instagram posts/Facebook posts/Tweets
3. an Infographic highlighting the key data and information
4. a video clip
5. a speech written to be delivered to a particular audience
6. a community service announcement for print/online communication
7. a web page.

Provide links to relevant platforms to create content; for example, a Facebook Status generator that allows you to create imitation posts, a blogging platform such as Blogger or a web page template and text editor. Discuss responsible use of the internet and purpose of our use is to create a post based around their chosen the issue.

This task can be integrated with English. The focus can be to:

- use comprehension strategies to compare and contrast information within and between texts, identifying and analysing embedded perspectives, and evaluating supporting evidence
- create texts that are purposeful and that inform, persuade and engage

		● create sustained texts, including texts that combine specific digital or media content, for imaginative, informative, or persuasive purposes that reflect upon challenging and complex issues.	

| Supporting resources and tools and purpose/ context for use | **Selecting a relevant issue**
 iSideWith.com
 This site provides a useful tool for educating students about using data and technologies. It provides a list of issues organised by social issues, immigration, health care, environment and many more. Note: Review the comments section of any topics that students might access, and carefully consider the impact that certain topics might have on students in your class. Consider using this resource for ideas or to create a curated list.

 Environmental issues <br> http://www.abc.net.au/news/2017-06-22/godfather-of-coral-urges-adani-mine-approval-rethink/8639082
 The man known as the "Godfather of Coral" has called on the Turnbull Government to revoke its environmental approval for Adani's controversial $16-billion Carmichael coal mine proposal.

 http://www.abc.net.au/news/rural/2018-06-15/kangaroo-cull-red-tape-relaxed-in-nsw-drought-affected-areas/9869750
 NSW Minister for Industry and Primary Industries Niall Blair said many areas of NSW were facing an animal welfare crisis as big mobs of kangaroos eat themselves, and farmers, out of house and home.

 Sports-related issue <br> http://www.abc.net.au/news/2018-07-18/gray-andrews-cases-spotlight-on-afl-should-look-sendoff-options/9998670
 The AFL red card debate has been re-ignited in recent weeks after a couple of high profile incidents have left players, coaches and fans wondering what the recourse is for players who commit foul play that rubs out an opponent for the remainder of the game.

 Issues related to digital citizenship: cyberbullying, sexting and online reputation | 6 Ways Social Media Changed the Way We Communicate
 From the *Higher Ed Marketing Journal*.

 The Yellow Social Media report
 Up-to-date statistics based on an annual survey of customers and small, medium and large businesses. Relates to social networking sites; for example, Facebook, LinkedIn and Twitter. | **Collaborative tools**
 One note
 OneNote Class Notebooks have a personal workspace for every student, a content library for their handouts and a collaboration space for lessons and creative activities.

 Shared docs in Google Drive

 Replica Facebook page
 "FakeBook" Google Slides template.
 This Google slides template is a page for John F. Kennedy, but users can replace all pictures and text. Students could create an organisation Facebook page related to their issue.

 Facebook Status Generator
 Create imitation social media posts and Tweets. Review the site before use with your students. The site mentions to use the generator to prank your friends. Discuss responsible use of the internet and purpose of our use is to create a post based around their chosen the issue. *Do not use the site if you feel it is not appropriate for your students.*

 Blogger
 Create free blog articles.

 Basic Website development
 Mozilla Thimble
 This site provides templates to change code very easily with minimal understanding of HTML. Change the code and view the output on screen. Ideal for students with no coding background who want to create a webpage.

 w3schools.com **(JavaScript)**
 Use this site to create a basic website. Follow tutorials and use the text editor to create code and test onscreen by running the program. The final code can be copied and pasted into Notepad (Windows) or TextEdit | Tools for assessment
 Grading rubric for a group project

 Evaluation & Assessment - Part 1
 An overview of assessment ideas and methods for computational thinking. |

	https://www.esafety.gov.au/education-resources/classroom-resources/tagged/teaching-resources Tips on creating a media campaign How to create & distribute media for a cause campaign		(Mac) and saved as an HTML file. Students can then open the HTML file and view their website to see how it appears on screen.	
Assessment	**Suggested approaches may include:** A draft media plan that includes relevant information organised against agreed headings. A list of functional and non-functional requirements of the project. **Achievement standard** Students plan and manage digital projects using an iterative approach. They define and decompose complex problems in terms of functional and non-functional requirements.	**Suggested approaches may include:** A collaboratively developed list of the new media used in their campaign, with a description of how the technologies are used to perform a particular service. A timeline for the project with dates for deliverables. Evidence of the iterations to the media campaign as the project has progressed. **Achievement standard** Students plan and manage digital projects using an iterative approach. They share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects.	**Suggested approaches may include:** As a part of formative assessment, ask students to explain how they are dealing with, or intend to deal with, or if they need to consider: ● output on different devices ● privacy or copyright issues ● design considerations ● particular audience needs ● format constraints of platforms being used. ● ensuring that the information is accurate and reliable ● different styles of writing to suit the purpose. The timeline for the project provided in an online space with dates for deliverables aligned directly with student roles and responsibilities. Evidence of the iterations to the media campaign as the project has progressed. Examples of completed content with reflections from students who were responsible for specific content. **Achievement standard** Students plan and manage digital projects using an iterative approach. They share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects.	**Suggested approaches may include:** The timeline for the project provided in an online space, with dates for deliverables aligned directly with student roles and responsibilities. Examples of completed content, with reflections from students who were responsible for specific content. Evaluation of the project and reflections from team members against agreed criteria. **Achievement standard** Students evaluate information systems and their solutions in terms of risk, sustainability and potential for innovation and enterprise.

| Western Australian Curriculum | **WAC**
Design possible solutions, analysing designs against criteria, including functionality, accessibility, usability and aesthetics using appropriate technical terms and technology (WATPPS65)

Investigate components/resources to develop increasingly sophisticated solutions, identifying and considering associated constraints (WATPPS63)

Identify the needs of the client/stakeholder to determine the basis for a solution (WATPPS61)

Work independently, and collaboratively to manage projects, using digital technology and an iterative and collaborative approach. Considers time, cost, risk, safety, production processes, sustainability and legal responsibilities (WATPPS68) | Design possible solutions, analysing designs against criteria, including functionality, accessibility, usability and aesthetics using appropriate technical terms and technology (WATPPS65) | Select, justify, and safely implement and test appropriate technologies and processes, to make solutions (WATPPS66)

Investigate components/resources to develop increasingly sophisticated solutions, identifying and considering associated constraints (WATPPS63)

Design possible solutions, analysing designs against criteria, including functionality, accessibility, usability and aesthetics using appropriate technical terms and technology (WATPPS65) | Analyse design processes and solutions against student developed criteria (WATPPS67) |