

These series of lessons were created in collaboration with the Digital Technologies teacher from Peace Lutheran College, Queensland

Unit Overview

Students will understand how digital technologies has influenced animation. Students will explore different ways technologies has been used to create animations (stop motion, GIFs, animations). Students will recognise the importance of including stakeholders and their opinions to ensure their digital animation targets the correct audience.

When exploring different types of files they will evaluate and compare the difference between lossy and lossless and use this knowledge to help them understand the best file type to create their animation in.

This project has been designed to be completed in small groups. It is imperative to take time to discuss standards and codes of conduct when working in an online environment. A session has been dedicated to setting up the online working environment. During the sessions, an online platform will be used for students to collaborate with each other. It is expected they will use the platform to brainstorm, store their work and use the platform to finalise their animation.

Other Curriculum Targeted Areas

Other curriculum areas can be targeted and assessed within this unit.

Other areas of interest may include:

- Media Arts
- Design Technologies

Further investigation into these areas is required to ensure they align with the following activities. Activities may need to be modified to ensure content descriptions and achievement standards are met.

Australian Curriculum Alignment

The following sessions have been created using the Australian Curriculum: Digital Technologies Curriculum. Tasks may need to be modified to ensure state Digital Technologies Curriculum content descriptions and achievement standards are met. ACS has support and documents to help align this unit to other Digital Technology Curricular.

Session

'Session' has been used to define the order of tasks to complete the unit. It does not define a set time required to complete the task. Time allocated to complete a session is the teacher's discretion. This allows for flexibility for the teacher to drive the duration of the task and make modifications if necessary. Sessions can be merged into one set period or one session may run over multiple periods.

Key Preparation

ACS Resources

Resources have been created to help teachers and students unpack and understand topics found within the Digital Technologies Curriculum. These give brief explanations of the topic and the expectations to teach the topic at the curriculum year level. It is intended the information is presented in a way that will set the foundation for further research.

ACS ICT Educators Community

ACS has resources to support the teaching of the Digital Technologies Curriculum from Foundation to Year 10. Access the community and resources by joining for free via: <https://www.acs.org.au/ict-educators.html>

Preparation is required to ensure students have access the platform to create an online story and access to animation software. Access to software is encouraged to use software that students already have access to and are already familiar with using. Below is a list of suggestions:

Technology to create storyboards

- [Canva](#), [EdrawMax](#), [Boords](#), [StudioBinder](#), [Procreate Folio](#), [Penultimate](#), [Miro](#)

Technology to create animation

- [Visme](#), [Adobe Animate](#), [Toonly](#), [Animaker](#), [PowToon](#)

Key Understandings

Students will:

- Plan and organise ideas collaboratively, using a process to create an animation
- Use the iterative approach to plan and action a large project
- Investigate how digital technology plays a role in creating animations
- Explain the difference in lossy and lossless files and how these file types will effect their animations.
- Identify stakeholder needs through interviews to understand needs
- Create storyboards to plan and create a digital animation

Key Questions

- What are the essential rules of working in a group online?
- How will the iterative approach to working collaboratively help you complete this project?
- How can we use digital technology to create animations?
- How does certain file types effect images? Which file type will use choose? What is the purpose of storyboards?
- Who is your stakeholder and how will you ensure your animation is fit for purpose?
- What will you include in your animation?

Key Vocabulary

Collaborations, non-functional requirements, stakeholders, user experience, functionality, accessibility, usability, aesthetics, digital solutions, future risks, sustainability, innovation, iterative collaborative approach

Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
1.	Working collaboratively	<p>Learning Intention Students will work in small groups throughout the topic to create an animation.</p> <p>Success Criteria I can work in a small group to create an animation.</p>	<p>Introduce students to the online collaboration system they will use for the project.</p> <p>Demonstrate to the students key functions of the program.</p>	<p>Students familiarise themselves with the collaborative platform. In small groups, students create a Code of Conduct. Within this they outline rules and regulations when working online.</p> <p>Students will learn about the iterative approach and use the skills in this approach to work together on their animation. Over the course of the unit, students will reflect on the development of their animation, demonstrate how they have changed and adapted as they reach different milestones.</p>
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> https://youtu.be/KT2TQGFwcko 		<p>Teacher Resources</p> <ul style="list-style-type: none"> ACS Teacher Resource: Interactive Solutions ACS Teacher Resource: Iterative Approach 	
2.	Introduction to animation	<p>Learning Intention Students are introduced to how technology has influenced the development of animations.</p> <p>Success Criteria I can explain the role that technology has played in animations.</p>	<p>Discuss with students animation from basic drawings to complex animations using computers. Show the Ted Ed video of animation basics. Students create a simple stick figure flip book animation.</p>	<p>Students create an interactive timeline of the development of animation, focusing on the use of technology to create animation and how technological advancements influenced animation.</p>
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> ED Ted Blog: Animation basics https://www.youtube.com/watch?v=7EGGeoCURCE 		<p>Teacher Resources</p> <ul style="list-style-type: none"> eLearning Blog: Top 15+ Free and Paid Interactive Timeline Makers 	

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Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
3.	Using technology to create animations	<p>Learning Intention Students will use technology to create a simple animation.</p> <p>Success Criteria I can use technology and stop motion to create a simple animation.</p>	Students watch the Ted Ed video <i>Stop Motion Animation: Homemade Special Effects Using People</i> to create a stop motion. This video details how different effects and props can be used to create a fun stop motion from getting from A to B.	<p>Using the video as a stimulus, students design a stop motion video on how to get from A to B.</p> <p>Students to plan their video out in groups and assign roles and responsibilities.</p>
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> • Tutorial on how to use Stop Motion Studio App • Stop Motion Animation: Homemade Special Effects Using People • Stop motion effect in Adobe Spark 		<p>Teacher Resources</p>	
4.	Using technology to create animations	<p>Learning Intention Students will use technology to create a simple animation.</p> <p>Success Criteria I can use technology and stop motion to create a simple animation.</p>	Using objects to create animation. Watch the video to see how stop motion animation is created from objects	Students to create an object out of nerds or similar object. Building on from the work they completed in the previous session, they create an object and then move it from A to B.
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> • https://ed.ted.com/lessons/making-a-ted-ed-lesson-animation 		<p>Teacher Resources</p>	

Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
5.	Using technologies to create animations	<p>Learning Intention Students will use technology to create a simple GIF.</p> <p>Success Criteria I can use technology to create a GIF.</p>	Discuss with the students what a GIF is and the types of animation that can be found within a GIF. Discuss the file type of a gif and compare to still image files.	Students will create a basic animation using Monster Mash Demo . They turn their simple animation into a GIF.
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> Difference between GIF files and JPEG files (not provided) 		<p>Teacher Resources</p> <ul style="list-style-type: none"> Monster Mash Demo Digital Synopsis: Google Launches Sketch-Based Tool for Simple 3D animations That Anyone Can Create GIPHY Support: How to make a GIF TechBoomers: How to Create GIFs in 3 Easy Ways 	
6.	Lossy Versus Lossless compression	<p>Learning Intention Students evaluate the different files to</p> <p>Success Criteria I can evaluate different file types and choose most appropriate for my animation.</p>	Make a list of different file types for sound images and text. Discuss with students any similarities or differences they are already aware of. Discuss how these differences will influence their animation.	Student research different file types for text, images and sounds. They evaluate these different file types by creating a pros and cons list. Using this information they will justify which files types they will use.
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> Information on different text, sound and image files (not provided) Questions to prompt their evaluation of file (not provided) 		<p>Teacher Resources</p> <ul style="list-style-type: none"> ACS Teacher Resource: Data Compression 	

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Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
7.	Topic Research	<p>Learning Intention Students will research a topic relating to tech wellbeing. They will identify the topic and information they will include in their animation.</p> <p>Success Criteria I can choose a topic to base my animation on and identify the information/messages I will use for my animation.</p>	<p>Present the topics for students to study to create their animation.</p> <p>Discuss the importance of not only reading through the information but also evaluating the information based on the user/stakeholder that will be watching the animation.</p>	<p>In small groups students will read through and evaluate the information for each of the topics. They complete the evaluation by answering a selection of questions/prompts.</p> <p>Students report back to the group the topic they have chosen to create an animation on, the main points that they will include in their animation and the stakeholder they will make the animation for.</p>
Session Resources	Student Resources		Teacher Resources	
8.	Evaluating animations	<p>Learning Intention Students will evaluate animations to gain an understanding of what works well for the user experience.</p> <p>Success Criteria I can evaluate animations and explain features that will work so my stakeholder will have a positive experience.</p>	<p>Students will brainstorm a list of considerations they need to include in their animation. This</p>	<p>Students will watch a selection of animation videos on a range of topics to the ones they have studied. They will use this time to create an understanding of what works well and doesn't work well for their own animation.</p> <p>Students will share their reflections and they will articulate concepts that they will include and not include to ensure their animation is appropriate for their stakeholder.</p>
Session Resources	Student Resources		Teacher Resources	
	<ul style="list-style-type: none"> • Selection of animations to help teach tech wellbeing (located at the end of the document) • Animation Research Prompts 			

Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
9.	Creating a Stakeholder Profile	<p>Learning Intention Students will create a stakeholder profile to understand requirements needed to create an appropriate animation.</p> <p>Success Criteria I can create a stakeholder profile to better understand the elements I need to consider when planning my animation.</p>	Students share with the class the concepts and ideas they have collected over the sessions.	<p>Students create a stakeholder profile to help them plan out the content that will be presented in their animation.</p> <p>After students complete the stakeholder profile, they evaluate the information they have collected. If concepts and ideas are not appropriate this is a time to evaluate and readjust.</p>
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> Stakeholder Profile Prompts (located at the end of the document) 		<p>Teacher Resources</p> <ul style="list-style-type: none"> Stakeholder Profile Prompts (located at the end of the document) 	
10.	Creating a story board	<p>Learning Intention Students will create a storyboard to show the sequence of their animation.</p> <p>Success Criteria I can create a storyboard that includes information about the sequence of detail and graphics I will use.</p>	<p>Commence with a discussion on the factors to consider when making an animation.</p> <p>Use the animation process used by Pixar and Cars 2 video that shows the progression to animation and discuss the importance of keeping to a plan.</p>	<p>Using the information they have gathered from evaluating the topics, animation topics and their stakeholder profile, students will create a storyboard of their animation.</p> <p>They will show how their key messages are imbedded throughout the animation and show basic drawings of their animations. They can also include written explanations such as colours, types of fonts used and explain how animations or audio may appear.</p>
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> Pixar Video Cars 2: Opening Sequence Animation Process Weebly: Pixar Animation Process Animation Storyboard, complete 2021 breakdown+video example (dreamfarmstudios.com) 		<p>Teacher Resources</p> <ul style="list-style-type: none"> Storyboard software (examples in Key preparation, located at the beginning of this document) Animation Design Prompts 	

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Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
11.	Digital animation creation	<p>Learning Intention Students will create a storyboard to show the sequence of their animation.</p> <p>Success Criteria I can create a storyboard that includes information about the sequence of detail and graphics I will use.</p>	Students share in small groups their storyboard and discuss the structure of their animation.	Students will work in small groups to build their animation. Students will use their storyboard to help keep them on task and focused while coding and creating.
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> Chosen animation software to create animation 		<p>Teacher Resources</p> <ul style="list-style-type: none"> 9 Best Free Animation Software for 2019 Freelancer: The 10 Best free animation software in 2021 	
12.	Digital animation evaluation	<p>Learning Intention Students will evaluation their digital solution based on prompts and a select criterion.</p> <p>Success Criteria I can evaluate my digital animation by a set of questions and prompts.</p>	Student present their animation to the class and their peers.	Students complete an evaluation of their digital solution. They will complete a selection of questions and prompts relating to evaluating digital solutions for a given purpose.
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> Student self-evaluation questions and prompts (located at the end of the document) 		<p>Teacher Resources</p> <ul style="list-style-type: none"> Student self-evaluation questions and prompts (located at the end of the document) 	

Assessment – Australian Digital Technologies Curriculum			
Content Description	Session Number	Assessment Piece	Assessment Statement
Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems (ACTDIK034)	N/A		
Analyse simple compression of data and how content data are separated from presentation (ACTDIK035)	6	Evaluation of different file types	Students evaluated different files and forms of data and analysed which file was best suited to the project to create a digital animation.
Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, conserving privacy and security requirements (ACTDIP036)	N/A		
Analyse and visual data to create information and address complex problems, and model processes, entities and their relationships using structured data (ACTDIP037)	N/A		
Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs (ACTDIP038)	9	Interviewing stakeholders	Students created a stakeholder profile and interviewed stakeholders to ensure the animation is created for the targeted audience.
Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability and aesthetics (ACTDIP039)	8	Evaluation of digital animations	Students evaluated a selection of animations based on a set of prompts and questions. These included questions based on functionality, accessibility, usability and aesthetics.
Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases (ACTDIP040)	N/A		
Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language (ACTDIP041)	N/A		
Evaluate critically how student solutions and existing information systems and policies, take account of future risks and sustainability and provide opportunity for innovation and enterprise (ACTDIP042)	12		
Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and legal responsibilities (ACTDIP043)	N/A		
Plan and manage projects using an iterative collaborative approach, identifying risks and consider safety and sustainability (ACTDIP044)	1 & 12	Throughout the project	Throughout the project, students planned and managed their design using the iterative approach. They continually evaluated, assessed and modified their design based on development

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Topic	Teacher Resource	Student Resource
Cyberbullying (How to best deal with and report cyberbullying)	<ul style="list-style-type: none"> • Dolly's Dream • R U OK • Beyond Blue • Headspace • Legal Aid WA: Cyberbullying • Esafety Commissioner Teacher Resources 	<ul style="list-style-type: none"> • Kids Help Line: Cyber Bullying • Kids Help Line: Teens Cyber Bullying • Kids Help Line: Teens online harassment • Kids Help Line: All About Respect • Kids Help Line: Online Gaming Am I being bullied • Esafety Commissioner: Report Cyberbullying Poster • Esafety Commissioner: Someone is Creating Drama Online
Online games (How to stay safe using online games)	<ul style="list-style-type: none"> • Education Acer: Gaming Disorder How Teacher Can help Students develop a health approach • Core UK • Medium: Ways to teach kids about video games • How to deal with video game addiction. A manual for parents and professionals • Digital Citizenship NSW: Creating a safe gaming environment for children • http://archive.pov.org/thankyouforplaying/lesson-plan/ • https://www.askaboutgames.com/ 	<ul style="list-style-type: none"> • https://kidshelpline.com.au/teens/issues/social-media-and-mental-health • https://kidshelpline.com.au/teens/issues/when-online-gaming-takes-over-your-life • https://www.esafety.gov.au/parents/big-issues/gaming • https://www.esafety.gov.au/young-people/online-gaming • https://www.esafety.gov.au/key-issues/staying-safe/gaming • https://www.esafety.gov.au/about-us/research/youth-online-gaming-state-of-play/youth-online-gaming
Screen time (How to maintain a healthy balance when using devices)	<ul style="list-style-type: none"> • https://raisingchildren.net.au/toddlers/play-learning/screen-time-media/screen-time • https://www.esafety.gov.au/sites/default/files/2020-02/Teens%2C%20tech%20and%20time%20online%20webinar%20info%20sheet.pdf 	<ul style="list-style-type: none"> • https://www.esafety.gov.au/young-people/spending-too-much-time-online • https://www.childnet.com/ufiles/Young-children-and-screen-time---a-guide-for-parents-and-carers.pdf • https://support.apple.com/en-au/HT208982 • https://www.esafety.gov.au/sites/default/files/2019-06/EC-ESP-screen-time-tips-flyer_0.pdf

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Topic	Teacher Resource	Student Resource
<p>Digital reputation</p> <p>(How to be sure to have a positive digital reputation and awareness of the impacts on their future)</p>	<ul style="list-style-type: none"> • https://www.intel.com.au/content/www/au/en/education/right-device/screen-time-and-learning-brief.html • https://www.digitalcitizenship.nsw.edu.au/articles/managing-screen-time • https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-phys-act-guidelines • https://www.esafety.gov.au/sites/default/files/2019-08/tagged-english-teacher-resource-backgrounder.pdf • https://www.esafety.gov.au/sites/default/files/2020-01/OESC-Whats-your-brand-resource.pdf • https://www.esafety.gov.au/sites/default/files/2020-01/Slides.pdf 	<ul style="list-style-type: none"> • https://kidshelpline.com.au/teens/issues/social-media-and-mental-health • https://www.esafety.gov.au/sites/default/files/2020-03/eSafety_Ed%20Kids%20TT%20Poster.pdf • https://www.esafety.gov.au/young-people/pressures-from-social-media • https://www.esafety.gov.au/key-issues/esafety-guide • https://www.esafety.gov.au/about-us/blog/five-ways-change-your-digital-reputation • https://www.esafety.gov.au/young-people/your-digital-reputation • https://www.esafety.gov.au/key-issues/staying-safe/digital-reputation • https://www.esafety.gov.au/young-people/protecting-your-identity
<p>Postural considerations</p> <p>(How to sit or stand when using devices to maintain physical health)</p>	<ul style="list-style-type: none"> • https://rothmanortho.com/stories/blog/how-computer-and-smart-phone-use-affect-the-spine • https://www.educationworld.com/a_tech/tech/tech076.shtml • http://keyboarding.ccsd.edu/help-for-teachers/lesson-1--correct-posture • https://www.familyeducation.com/life/online-games/slouch-potatoes-kids-computers-ergonomics 	<ul style="list-style-type: none"> • https://www.backinmotion.com.au/blog/article/how-technology-is-ruining-your-posture-what-to-do • https://physioaus.com.au/a-highett-physio-explains-how-technology-has-changed-our-posture/ • https://www.njspineandortho.com/how-technology-affects-posture/ • https://www.ivyrehab.com/news/tech-neck-how-technology-is-affecting-your-posture/ • https://www.health.harvard.edu/staying-healthy/the-surprising-side-effects-from-using-technology • https://www.morethanphysio.com.au/blog/avoid-the-dreaded-tech-neck-how-to-correct-posture-issues-as-a-result-of-extended-mobile-device-and-laptop-use/

Existing Animations

<https://www.youtube.com/watch?v=XGoA59HBlw>

<https://www.youtube.com/watch?v=eHUOqSmkY1w>

<https://vimeo.com/189443090>

https://www.youtube.com/watch?v=d5kW4pl_VQw

https://www.youtube.com/watch?v=F8_ME4VwTiw

Topic Research Prompts

- What is the name of topic you are investigating
- Who would benefit from knowing this information (young children, teens, tweens, adults, seniors)
- What are 4 important pieces of information you have gathered from the resource?
- How would you order this information in an animation?
- Out of that information – which ones will you use/discard.
- What would an animation look like about this topic (describe in a 5 sentences)?

Animation Research Prompts

- Name of animation and run time
- Type of animation
- Start screen and end screen
- What are 2 comments you would make about the animation?
- What were the key take ways/ messages?
- Who do you think the animation is targeted at?
- Overall design – was is appropriate for the target audience?
- What parts stood out being appropriate for different age groups
- How did the animation present the messages – did they use audio, text, both?
- What would you improve?
- What was one thing that impressed you?
- List 3 new ideas you have now to create an animation?

Stakeholder Profile Prompts

- What age bracket is your stakeholder?
- What does this mean for the user experience when creating your animation?
- Gender, does this influence your design?
- How might they experience/come into the issue you are investigating? Eg: When would it be common for your stakeholder to experience cyberbullying? Why would your stakeholder need to know about correct posture when using a device?
- Why would your stakeholder need to watch your animation? How would you help them?
- What are some questions you could ask to find out if your stakeholder group would watch your animation??
- What type of questions could you ask that will give you word answers?
- What type of questions could you ask that will get you numerical answers?

Animation Design Prompts

Stakeholders

- Who is your target audience/stakeholders? Create a profile of someone who will watch your animation.
- What non-functional requirements will you need to consider. This could include colours, graphics, language, time, complexity of the plot, language that is used.

Storyboard

- Summarise your animation. What is the main plot of your animation. How is it resolved?
- Design your characters, background and sets.
- Create a story board of your animation. What will happen in different scenarios? How will it start and end?

Programming the animation

- Create a flowchart of the code.
- Write pseudocode for the first scene and use this to help you code the first scene.