# Enterprise Computing Stage 6 (Year 11) – sample program of learning

**Interactive media and the user experience (UX)**



Contents

[Rationale 2](#_Toc137649642)

[Overview 3](#_Toc137649643)

[Outcomes 5](#_Toc137649644)

[Lesson sequence and details 7](#_Toc137649645)

[Week 1 7](#_Toc137649646)

[Week 2 13](#_Toc137649647)

[Week 3 18](#_Toc137649648)

[Week 4 28](#_Toc137649649)

[Week 5 36](#_Toc137649650)

[Week 6 43](#_Toc137649651)

[Weeks 7–9 49](#_Toc137649652)

[Week 10 54](#_Toc137649653)

[Additional information 57](#_Toc137649654)

[Further implementation support 57](#_Toc137649655)

[Assessment for learning 57](#_Toc137649656)

[Differentiation 58](#_Toc137649657)

[Support and alignment 60](#_Toc137649658)

[Evidence base 62](#_Toc137649659)

[References 64](#_Toc137649660)

## Rationale

The NSW Department of Education publishes a range of curriculum support materials, including samples of lesson sequences, scope and sequences, assessment tasks, examinations, student and teacher resource booklets, and curriculum planning and curriculum evaluation templates. The samples are not exhaustive and do not represent the only way to complete or engage in each of these processes. Curriculum design and implementation is a dynamic and contextually-specific process. While the mandatory components of syllabus implementation must be met by all schools, it is important that the approach taken by teachers is reflective of their needs and faculty/school processes.

NESA defines [programming](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/understanding-the-curriculum/programming) as the process of ‘selecting and sequencing learning experiences which enable students to engage with syllabus outcomes and develop subject specific skills and knowledge’ (NESA 2022). A program is developed collaboratively within a faculty. It differs from a unit in important ways, as outlined by NESA on their [advice on units](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/understanding-the-curriculum/programming/advice-on-units) page. A unit is a contextually-specific plan for the intended teaching and learning for a particular class for a particular period. The organisation of the content in a unit is flexible and it may vary according to the school, the teacher, the class, and the learning space. They should be working documents that reflect the thoughtful planning and reflection that takes place during the teaching and learning cycle. There are mandatory components of programming and unit development, and this template provides one option for the delivery of these requirements. The NESA and department guidelines that have influenced this template are elaborated upon at the end of the document.

This resource has been developed to assist teachers in NSW Department of Education schools to create learning that is contextualised to their classroom. It can be used as a basis for the teacher’s own program, assessment, or scope and sequence, or be used as an example of how the new curriculum could be implemented. The resource has suggested timeframes that may need to be adjusted by the teacher to meet the needs of their students.

## Overview

**Description:** This program of learning addresses the area of Interactive media and the user experience (UX). The lessons and sequences in this program of learning are designed to allow students to develop the knowledge and skills to create an interactive media product as a solution to a user’s needs and consider the UX.

Weeks 1–4 see students understand the ubiquity of interactive media. Students research the evolution of interactive media and investigate how interactive media and the UX is used to communicate information to an audience. Students investigate social, ethical and legal issues when developing and implementing interactive media systems. Students evaluate the performance and explain how interactive media systems can support creative processes. Students examine human and consumer behaviour and evaluate social media applications that encourage human connections**.**

Students plan for their project and learn how interactive media products capture, store and integrate data. Students use hardware and software to digitise assets for use in interactive media systems, including lossy and lossless data compression. Students explain how the user interface (UI) impacts on the UX and apply design tools and techniques to develop an engaging UI.

Weeks 5–10 see students apply design thinking to develop a front-end, web-based interactive media system incorporating UX and UI principles. Students develop interactive media considering data journalism. Students select an appropriate project management approach to develop an interactive media-based solution and apply features of user interaction and UX within web-based systems.

**Duration:** This program of learning is designed to be completed over a period of approximately 10 weeks in 60-minute lesson sequences but can be adapted to suit the school context.

**Explicit teaching:** Suggested learning intentions and success criteria are available for some lessons provided. Learning intentions and success criteria are most effective when they are contextualised to meet the needs of students in the class. The examples provided in this document are generalised to demonstrate how learning intentions and success criteria could be created.

## Outcomes

A student:

* describes how systems are used in a range of enterprises **EC-11-01**
* describes the function of data and information within enterprise computing systems **EC-11-02**
* describes how data is safely and securely collected, stored and manipulated when developing enterprise computing systems
**EC-11-03**
* describes how data is used in enterprise computing systems **EC-11-04**
* applies tools and resources to analyse datasets **EC-11-05**
* explains how innovative technologies have influenced enterprise computing systems EC-11-06
* explores the social, ethical and legal implications of the application of enterprise computing systems on the individual, society and the environment **EC-11-07**
* selects and uses tools and resources to design and develop an enterprise computing system **EC-11-08**
* documents the management and evaluates the development of an enterprise solution **EC-11-09**
* investigates the effectiveness of an enterprise computing system **EC-11-10**
* communicates an enterprise computing solution to an intended audience **EC-11-11**

[Enterprise Computing 11–12 Syllabus](https://curriculum.nsw.edu.au/syllabuses/enterprise-computing-11-12-2022) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2022.

**Prior to planning for teaching and learning, please consider the following:**

**Engagement**

* How will I provide authentic, relevant learning opportunities for students to personally connect with lesson content?
* How will I support every student to grow in independence, confidence and self-regulation?
* How will I facilitate every student to have high expectations for themselves?
* How will I identify and provide the support each student needs to sustain their learning efforts?

**Representation**

* What are some different ways I can present content to enable every student to access and understand it?
* How will I identify and address language and/or cultural considerations that may limit access to content for students?
* How will I make lesson content and learning materials more accessible?
* How will I plan learning experiences that are relevant and challenging for the full range of students in the classroom?

**Expression**

* How will I provide multiple ways for students to respond and express what they know?
* What tools and resources can students use to demonstrate their understanding?
* How will I know if every student has understood the concepts and language presented in each lesson?
* How will I monitor if every student has achieved the learning outcomes and learning growth?

## Lesson sequence and details

### Week 1

Table 1 – week 1 – lesson sequence and details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Evidence of learning | Differentiation/ adjustments | Registration and evaluation notes |
| **Outcomes:****EC-11-01****EC-11-03****EC-11-06****EC-11-07****EC-11-10****Content:**Students:* investigate how interactive media and the user experience (UX) is used to communicate information to an audience
* investigate social, ethical and legal issues when developing and implementing interactive media systems
* research the evolution of interactive media

Including:* prevalence of blogs, online video and digital radio
* privacy issues and the use of intellectual property, including Indigenous Cultural and Intellectual Property (ICIP).
 | **Learning intention**Understand the ubiquity of interactive media.**Success criteria*** I can explain how interactive media and the UX is used to communicate information to an audience.
* I can explain social, ethical and legal issues when developing and implementing interactive media systems.

**Teaching and learning activities****Activity 1:** [brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542#.ZC4skSv0RLg.link) examples of interactive media they have encountered in daily life.**Activity 2:** define key concepts:* ubiquity
* interactive media
* UX.

Describe different types of interactive media, such as social media, video games, virtual reality and interactive websites.**Activity 3**: research and provide (a) screen shot example(s) of social media, video games, virtual reality, and interactive websites.**Activity 4:** complete 3 examples of communication, entertainment, and commerce interactive media examples.**Activity 5**: watch [future technology evolution](https://www.youtube.com/watch?v=Ftf7WDwz8eo) (12:23) and examine potential future developments that relate to interactive media and the UX. Students imagine a user prototype for the user interface (UI).**Activity 6**: table of interactive media examples. The grid can be cut into tiles and arranged by students into correct categories.**Activity 7:** the teacher provides students with stimulus such as a street directory or map. Students compare the street directory or physical map with [Google Maps](https://www.google.com/maps) or other wayfinding app and complete a table comparing systems.**Activity 8:** students investigate the use of interactive media and UX design to communicate information to an audience and understand the advantages of using interactive media to communicate information. In this scenario the information is location and navigation.**Activity 9:** using a [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645#.ZCFIk74Z-24.link) divide students into groups of 3 or 4 and ask each group to choose one interactive media example from the list:* interactive websites
* social media
* games
* mobile applications
* online video
* blogs
* digital radio.

**Activity 10:** Web1.0–Web 3.0 –students navigate to a website and read the content about [Web 1.0 vs. Web 2.0: Full Comparison](https://history-computer.com/web-1-0-vs-web-2-0-full-comparison/).Students describe how the ability to write to and read from the internet has enabled the ubiquity of interactive media.**Activity 11:** User inyerface game –students play the website game [User Inyerface](https://userinyerface.com/game.html) to examine what happens when every frustrating element of UI design is put together in a website.**Activity 12:** [brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542#.ZC4skSv0RLg.link) several different issues that could be experienced when developing and implementing interactive media solutions.**Activity 13:** scenario Ring Video Doorbell (RVD) – students describe the issue of privacy that the [Ring video doorbell](https://www.diggitmagazine.com/papers/ring-video-doorbell-privacy-invasion-) is creating in society.Students describe how new and advancing technology changes the way we act and the laws of society. | Students can recount and recall experiences of using interactive media in their daily lives.Students commence a glossary of key terms and begin with defining ubiquity, interactive media and UX.Students add to this glossary throughout the learning sequence to assist in correct use of specialist terminology.Students can classify interactive media products into social media, video games, virtual reality and interactive websites.Students can analyse enterprise systems and identify interactive media examples as either communication, entertainment or commerce, or a combination of these, and can align them to interactive media examples.Students can investigate emerging technology and examine the interactive media and UX elements.Students look at past examples of interactive media and connect the evolution of interactive maps as an example of interactive media.Students can investigate the use of interactive media and UX design to communicate information to an audience and can discuss and explain the advantages of using interactive media to communicate information.Students explain the changes between Web 1.0, Web 2.0 and Web 3.0 and how this provides interactivity.Students can identify the elements of UI and UX.Students can identify several different issues they have experienced as users and designers when developing and implementing interactive media solutions.Students can identify in a scenario like Ring Doorbells how new and advancing technology changes the way we act and the laws of society.Students can examine the evolution of interactive media recounting how it has changed in their lifetime and contribute to the creation of a section of timeline to collectively document the history of interactive media.Students can discuss what information they consider should be private.Students can write a reflection on what steps they currently take to protect their privacy.Students can describe intellectual property, including Indigenous Cultural and Intellectual Property (ICIP) and explain its role in society. | This section is also for use in school when making adjustments to support all students to achieve in their learning.Extension: read this article on the [comparison between Web 1.0, Web 2.0 and Web 3.0](https://www.geeksforgeeks.org/web-1-0-web-2-0-and-web-3-0-with-their-difference/). Students create text on the comparison of Web 1.0, Web 2.0 and Web 3.0 by examining their similarities and differences. |  |

### Week 2

Table 2 – week 2 – lesson sequence and details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Evidence of learning | Differentiation/ adjustments | Registration and evaluation notes |
| **Outcomes:****EC-11-01****EC-11-03****EC-11-06****EC-11-07****EC-11-10****Content:**Students:* research the evolution of interactive media

Including:* prevalence of blogs, online video and digital radio
* privacy issues and the use of intellectual property, including Indigenous Cultural and Intellectual Property (ICIP).
 | **Learning intention**Understand the evolution of interactive media including areas of prevalence and privacy issues.**Success criteria*** I can explain the evolution of interactive media.
* I can explain the prevalence of blogs, online video and digital radio.
* I can describe privacy issues and the use of intellectual property, including Indigenous Cultural and Intellectual Property (ICIP).

**Teaching and learning activities****Activity 14:** students watch the following video on the [evolution of traditional to new media (1:25)](https://www.youtube.com/watch?v=GA9Ld6HgqKM). Students participate in a class discussion around technology changes they have personally experienced from primary school to high school.Students describe why the personalisation of interactive media has been a focus and theme in developing the user experience (UX) in new technology.**Activity 15:** students view an example of a [timeline of new social media](https://www.booksaresocial.com/wp-content/uploads/2016/02/New-Media-Timeline-e1455890319643.jpg) and use this as stimulus to create a visual timeline for their history of interactive media.**Activity 16:** students work in small groups. Each group is given one of the date ranges to research the development of that era or specific topic.Students collect resources including photographs and content. Students use video editing software to make a 1–2 minute video on their topic or era.As a class, each video clip is combined to create a complete interactive media timeline.**Activity 17:** reflect on the development and impact of one chosen real-world application and create text.**Activity 18:** as a class watch a video on [data privacy and consent](https://www.youtube.com/watch?v=2iPDpV8ojHA) (13:22).Students create text discussing what information they consider should be private.**Activity 19:** students write a reflection on what steps they currently take to protect their privacy.**Activity 20:** the [AIATSIS](https://aiatsis.gov.au/) website contains many educational and informative online materials about Aboriginal and Torres Strait Islander peoples.As a class listen to this [audio](https://aiatsis.gov.au/publication/116723) (35:47) of Terri Janke, who is a Wuthathi/Meriam woman from Cairns, to understand her perspective. Terri is an international authority on Indigenous Cultural and Intellectual Property (ICIP) and has written the leading protocols and ICIP models in the film, arts, museum and archival sector. | Students can examine the evolution of interactive media recounting how it has changed in their lifetime.Students create a 1–2 minute video and contribute these projects together as a class to create a timeline of evolution and collectively document the history of interactive media.Students can discuss what information they consider should be private.Students can write a reflection on what steps they currently take to protect their privacy.Students can describe intellectual property, including Indigenous Cultural and Intellectual Property (ICIP) and explain its role in society. | This section is also for use in school when making adjustments to support all students to achieve in their learning.Extension: read this article on the [comparison between Web 1.0, Web 2.0 and Web 3.0](https://www.geeksforgeeks.org/web-1-0-web-2-0-and-web-3-0-with-their-difference/). Students create text on the comparison of Web 1.0, Web 2.0 and Web 3.0 by examining their similarities and differences. |  |

### Week 3

Table 3 – week 3 – lesson sequence and details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Evidence of learning | Differentiation/ adjustments | Registration and evaluation notes |
| **Outcomes:****EC-11-01****EC-11-02****EC-11-04****EC-11-06****EC-11-07****EC-11-10****Content:**Students:* describe the contribution of interactive media systems to a range of enterprises

Including:* how simulation, gamification and augmented reality (AR) support online training and learning
* how streaming services, gaming and virtual reality (VR) improve access to entertainment
* how specialist apps support delivery tracking, advertising and communication
* evaluate the performance requirements of hardware for specific interactive media projects
* explain how interactive media systems can support creative processes

Including:* sandbox gaming
* social media
* digital creative commons.
 | **Learning intention**Describe, explain and evaluate interactive media systems across a range of enterprises.**Success criteria*** I can describe the contribution of interactive media systems to a range of enterprises.
* I can explain how interactive media systems can support creative processes.
* I can evaluate the performance requirements of hardware for specific interactive media projects.

**Teaching and learning activities****Activity 21:** as a class, look at a range of enterprises that use interactive media for marketing and advertising, e-commerce, customer service, education and training, entertainment, healthcare and smart home. Students choose an interactive media product to further research.Using a [graphic organiser](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/599#.ZDTeKlZR1us.link) students look at the interactive media product and examine the enterprise using the Who? What? When? Where? Why? How? chart.**Activity 22:** scenario – getting a NSW driver licence.Students examine the scenario to describe how the government uses simulation, gamification and augmented reality to support online training and learning of drivers.Students take inspiration from the scenario to design added features of online training to assist in helping the broad community learn to drive.Students [brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542#.ZC4skSv0RLg.link) possible improvements to the current system.**Activity 23:** students explain from their experience what has helped improve access to entertainment in interactive media. Including answering how streaming services, gaming and virtual reality (VR) improve access to entertainment.**Activity 24:** as a class discuss online purchasing experiences. Some may be from [eBay](https://www.ebay.com.au/), [Amazon](https://www.amazon.com.au/) or using a fast-food app, for example [Domino’s pizza](https://www.dominos.com.au/). Students describe an experience of purchasing online. The description should include the ease of purchase, communication types included and specify the use of delivery tracking.**Activity 25**: students research the hardware requirements of a range of interactive experiences and complete the table for social media, video games, virtual reality and interactive websites.**Activity 26:** students complete a table to explain how they have used features of interactive media systems to support creative processes. They examine the creative process of collaboration, simulation and prototyping, digital tools, digital testing and virtual and augmented reality.**Activity 27**: students explain from their experience when they have used sandbox gaming.**Activity 28:** as a class, students watch this short film on [social media addiction](https://www.youtube.com/watch?v=VJcxbOmV6Do) (2:46).Students record 5 tips to help combat the impact of social media on mental health and well-being.**Activity 29:** as a class, watch [Creative Commons License and how it helps us share digital content](https://www.youtube.com/watch?v=HKfqoPYJdVc) (5:32).There are several types of Creative Commons licenses, each with different levels of permissions and conditions. Students complete a table to document the levels of permissions and conditions.**Identifying and defining Assessment task 1**Students start to identify and define their project as part of Assessment task 1 during weeks 3 and 4.Students create an interactive media and user experience (UX) digital product that incorporates data journalism for end users on an issue in the local community.Students design and develop a digital solution using curated or created assets for a system of information delivery.Students create a digital solution on an issue in their local community. They are encouraged to be creative and use local contacts to develop their own ideas.Examples of digital solutions could include, but are not limited to:* an environmental issue in your local community or school
* a school information kiosk and interactive map
* a project to raise awareness of a local First Nations peoples and their cultures in your local area
* teaching people about the local community groups including diversity or sport or event promotion
* developing a recycling initiative for your school or community group.

The digital solution has many options including:* a website or app
* media components such as film, animation and music
* a podcast or vodcast
* an augmented reality (AR) or virtual reality (VR) presence
* a social media presence.

Students investigate how their proposed interactive media and UX system is used to communicate information to an audience.Students complete the following steps:* Define your audience.
* Describe the information you wish to communicate to your audience.
* Describe how your project will demonstrate safe and ethical use of online tools.
* Explain how your product will engage, capture and hold attention of the audience and collect user feedback.
 | Students research an enterprise that uses an interactive media system.Student evaluation of research may inform their decision on their final project.Students examine the enterprise and their interactive media system using the Who? What? When? Where? Why? How? chart.Students can describe how the government uses simulation, gamification and augmented reality to support online training and learning of drivers.Students can explain how streaming services, gaming and virtual reality (VR) improve access to entertainment.Students can recall online purchasing experiences. Student examples may be from eBay, Amazon or using a fast-food app, for example Domino’s pizza.Students describe an experience of purchasing online. The description should include the ease of purchase, communication types included and specify the use of delivery tracking.Students can complete a table to explain how they have used features of interactive media systems to support creative processes.Students examine the creative process of collaboration, simulation and prototyping, digital tools, digital testing and virtual and augmented reality. Students explain from their experience when they have used sandbox gaming.Students record 5 tips to help combat the impact of social media on mental health and well-being.Students complete a table to document the levels of permissions and conditions of creative commons and examine where they can use creative commons in their projects.Students work to complete the identifying and defining steps of Assessment task 1, including:* Define your audience.
* Describe the information you wish to communicate to your audience.
* Describe how your project will demonstrate safe and ethical use of online tools.
* Explain how your product will engage, capture and hold attention of the audience and collect user feedback.
 | This section is also for use in school when making adjustments to support all students to achieve in their learning. |  |

### Week 4

Table 4 – week 4 – lesson sequence and details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Evidence of learning | Differentiation/ adjustments | Registration and evaluation notes |
| **Outcomes:****EC-11-01****EC-11-02****EC-11-03****EC-11-04****EC-11-06****EC-11-07****EC-11-10****Content:**Students:* examine how human behaviour may be influenced by interactive media, including opportunities for people with disability to explore and participate in their environment
* investigate how digital marketing techniques influence consumer behaviour

Including:* guided choice (nudging)
* default settings, including cookies
* autofill
* pop-ups promoting online shopping
* evaluate social media applications that encourage human connections

Including:* crowdsourcing through a social media app
* learning via massive online open courses (MOOCs)
* gaming platforms that encourage massive multiplayer online games (MMOGs)
* explore how interactive media platforms support the creation of digital identities

Including:* personal e-profiles
* identifier versus identity
* profiling and auto-profiling
* privacy settings.
 | **Learning intention**Examine the connection between humans and interactive media systems.**Success criteria*** I can explain how human behaviour can be influenced by interactive media including opportunities for people with disability to participate.
* I can explain how digital marketing techniques influence consumer behaviour.
* I can evaluate social media applications that encourage human connections.
* I can explore how interactive media platforms support the creation of digital identities.

**Teaching and learning activity****Activity 30:** many devices and interactive systems have been designed for people with disabilities. In this scenario students look at Amazon’s Alexa.Students list 5 different ways [Alexa helps customers with disabilities](https://www.aboutamazon.com/news/devices/how-alexa-helps-customers-with-disabilities-every-day) to complete everyday tasks.**Activity 31**: as a class, students watch this video on [nudges and choice architecture](https://www.youtube.com/watch?v=AZExnUKfik0) (15:50) and discuss examples of when nudging has been experienced by students in the class. Students describe how nudging can influence consumer behaviour.**Activity 32:** as a class, students watch this video on [how cookies can track you](https://www.youtube.com/watch?v=QWw7Wd2gUJk) (6:50) and discuss the use of cookies on website browsers over the history of the internet. Students discuss an experience they have had, where the digital marketing techniques of default settings and cookies has influenced their consumer behaviour.**Activity 33:** as a class watch [Digital Marketing Strategies That Just Work](https://www.youtube.com/watch?v=3rrcT0wD7Ik) (5:12).Teacher led class discussion on how each of the 5 strategies can use autofill features. Students describe what data autofill collects when using a browser such as Google Chrome.**Activity 34:** as a class, students watch the video [Do Popups Still Work?](https://www.youtube.com/watch?v=iQ8PX4aPy6w) (2:35) and discuss when is a popup best placed, including the use of exit popups.Students write from the perspective of a website designer and detail when they would use a popup as a digital marketing technique to influence consumer behaviour.**Activity 35:** students complete a table to describe how they foster human connections using a range of social media applications they have used.**Activity 36:** scenario – WazeTraffic apps are designed to help drivers avoid accidents by providing them with up-to-date information about traffic conditions in their area.Traffic apps rely on the contributions of thousands of ‘citizen scientists’ who use their smartphones to report road incidents and traffic congestion.[Waze](https://www.waze.com/en-GB/live-map/) is one of the most popular crowd-powered start-ups. Students describe what the users of the Waze app can do to help crowd source information about traffic.Students write a persuasive argument to decide if users of Waze should report where police are using speed cameras.**Activity 37:** students describe the difference between a MOOC and a Learning Management System (LMS).**Activity 38:** [brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542#.ZC4skSv0RLg.link) examples of MOOGs students encounter in daily life. Students identify and describe the user experience (UX) of a MMOG they have used.**Activity 39:** students complete a table to describe 3 digital identities they have created using interactive media platforms.**Activity 40:** emails and handle names on accounts can be an identifier and different from your name or identity. Complete the table with examples that will last for the next 20 years.**Activity 41:** Flybuys scenario –students read the article on [What are loyalty schemes like Flybuys and Everyday Rewards doing with your data?](https://www.choice.com.au/consumers-and-data/data-collection-and-use/who-has-your-data/articles/loyalty-program-data-collection)Students identify how many people take up a loyalty scheme.Students identify and describe how data is like a goldmine for loyalty schemes and how they use these for profiling and auto-profiling.Students identify and describe how data broking affects the UX.**Activity 42:** students explore the [Australian Cyber Security Centre](https://www.cyber.gov.au/protect-yourself) (ACSC) website andlearn about the various ways to protect themselves. Students list several approaches they can take to protect their online identity. | Students can describe opportunities for people with disability to participate with interactive media.Students explain how nudging can influence consumer behaviour.Students discuss an experience they have had, where the digital marketing techniques of default settings and cookies has influenced their consumer behaviour.Students describe what data autofill collects when using a browser such as Google Chrome.Students write from the perspective of a website designer and detail when they would use a popup as a digital marketing technique to influence consumer behaviour.Students complete a table to describe how they foster human connections using a range of social media applications they have used.Students describe what the users of the Waze app can do to help crowd source information about traffic.Students write a persuasive argument to decide if users of Waze should report where police are using speed cameras?Students describe the difference between a MOOC and a LMS.Students identify and describe the UX of a MMOG they have used.Students identify how many people take up a loyalty scheme.Students identify and describe how data is like a goldmine for loyalty schemes and how they use these for profiling and auto-profiling.Students identify and describe how data broking affects the UX.Students list several approaches they can take to protect their online identity. | This section is also for use in school when making adjustments to support all students to achieve in their learning. |  |

### Week 5

Table 5 – week 5 – lesson sequence and details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Evidence of learning | Differentiation/ adjustments | Registration and evaluation notes |
| **Outcomes:****EC-11-01****EC-11-02****EC-11-04****EC-11-06****EC-11-07****EC-11-10****Content:**Students:* select and use appropriate file formats for a defined purpose
* use software to develop elements of interactive media in a project
* use hardware and software to digitise assets for use in interactive media systems, including lossy and lossless data compression
* explain how the user interface (UI) impacts on the user experience (UX)
* apply design tools and techniques to develop an engaging UI.
 | **Learning intention**Capture, store and integrate data.**Success criteria*** I can predict the best file formats, software for making interactive media elements and correct compression techniques, when planning how to capture, store and integrate data in my project.

**Teaching and learning activity****Activity 43:** planning file formats for Assessment task 1.Students [brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542#.ZC4skSv0RLg.link) examples of file formats they will use in their project.Students examine what file formats they will use in their Assessment task 1 where they are designing an interactive media experience for a user.Students complete the table outlining what appropriate media types they will use and why the type of file will fit the defined purpose.**Activity 44:** planning to use software to develop elements of interactive media for Assessment task 1.Students examine what their final product will consist of in developing their idea for Assessment task 1.When designing an interactive media experience what key elements are they developing and designing to produce their interactive media experience for a user.Students [brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542#.ZC4skSv0RLg.link) elements of interactive media they will use in their project.Students complete a table outlining what appropriate software and elements they will develop and use in the project.**Activity 45:** students describe the considerations they are making when saving the various elements of their project while considering compression techniques. Students complete a cloze passage on compression.**Activity 46:** students research 2 interactive media products and using these as examples, explain how the UI impacts on the user experience (UX).Students complete a table by identifying the interactive media product, collecting a screenshot of the user interfaces and then explaining how the UI impacts the UX. The 2 interactive media product examples can be chosen to highlight the similarities and differences of each UI and UX.**Activity 47:** students develop a wireframe for their interactive media project showcasing an engaging UI.**Research and Planning Assessment task 1**Students commence researching and planning their project as part of Assessment task 1 during weeks 5 and 6.Students explain how their proposed interactive media and user experience (UX) digital product will be created on a platform and identify consumer behaviour unique to that platform.Students complete the following steps:* Outline your research into contemporary and innovative software.
* Identify your digital product and explain what platform or media you will use for your solution.
* Check with your teacher the suitability of the platform or software you are reaching and using for the project.
* Investigate how digital marketing techniques influence consumer behaviour.
 | Students [brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542#.ZC4skSv0RLg.link) examples of file formats they will use in their project.Students justify what file formats they will use in their Assessment task 1 where they are designing an interactive media experience for a user.Students complete the table outlining what appropriate media types they will use and justify why the type of file will fit the defined purpose.Students [brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542#.ZC4skSv0RLg.link) elements of interactive media they will use in their project.Students complete a table outlining what appropriate software and elements they will develop and use in their project and justify their selection.Students explain the considerations they are making when they are saving various elements for their project and thinking about compression.Students complete a cloze passage on compression.Students research 2 interactive media products and using these as examples, explain how the UI impacts on the UX.Using the table, students identify the interactive media product, take a screenshot of the user interfaces and then explain how the UI impacts the UX.Students develop a wireframe for their interactive media project showcasing an engaging UI.Students work to complete the research and planning steps of Assessment task 1, including:* Outline your research into contemporary and innovative software.
* Identify your digital product and explain what platform or media you will use for your solution.
* Check with your teacher the suitability of the platform or software you are reaching and using for the project.
* Investigate how digital marketing techniques influence consumer behaviour.
 | This section is also for use in school when making adjustments to support all students to achieve in their learning. |  |

### Week 6

Table 6 – week 6 – lesson sequence and details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Evidence of learning | Differentiation/ adjustments | Registration and evaluation notes |
| **Outcomes:****EC-11-01****EC-11-02****EC-11-03****EC-11-04****EC-11-05****EC-11-06****EC-11-07****EC-11-08****EC-11-09****EC-11-10****EC-11-11****Content:**Students:* apply design thinking to develop a front-end, web-based interactive media system incorporating UX and UI principles
* develop and publish an interactive work of data journalism
* select an appropriate project management approach to develop an interactive media-based solution
* apply features of user interaction and UX within web-based systems

Including:* communication processes via social media
* search, sort and selection processes via online retail services
* online gaming platforms.
 | **Learning intention**Create interactive media systems.**Success criteria*** I can apply design thinking to develop a front-end, web-based interactive media system incorporating user experience (UX) and user interface (UI) principles.
* I can develop and publish an interactive work of data journalism.
* I can select an appropriate project management approach to develop an interactive media-based solution.
* I can apply features of UI and UX within web-based systems.

**Teaching and learning activity****Activity 48:** using 2 design thinking tools, POOCH and SCAMPER, students improve the development of their front end, web-based interactive media system they are developing for their project.**Activity 49:** data journalism –students read the [USA Today](https://www.usatoday.com/in-depth/graphics/2023/02/09/national-pizza-day-super-bowl-favorite-toppings-graphics/11201105002/) article on Super Bowl pizza sales to discover the toppings most favoured in the US.Students describe how graphics that use data to inform and tell news stories are used to support the article.Students read the [Budget Direct](https://www.budgetdirect.com.au/blog/cats-vs-dogs-which-does-the-world-prefer.html) article that examines whether the world prefers cats or dogs? Students describe how the graphics have been created using Instagram data to inform and tell the audience the data driven conclusion.Students examine their concept for Assessment task 1 and describe the purpose of their interactive media and who their typical user is.Students [brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542#.ZC4skSv0RLg.link) elements and ideas for data journalism that could be included in their task.Students describe what data collection and software they will use to incorporate data journalism into their project. If necessary, students re-examine their wireframe showcasing their interface and design a space to include data journalism.**Activity 50:** students select an appropriate project management approach for their project to develop an interactive media-based solution.Students describe how they will use this project management approach in their project.**Activity 51:** students select an appropriate number of features of user interactions and UX for their project to develop an interactive media-based solution and list these.Students describe how they will use these user interactions and UX within their web-based systems in their project.**Activity 52:** students describe how they use social media for communication processes in their daily life.Students discuss how they could or will use social media communication processes in their project.**Activity 53:** students describe how they use search, sort and selection processes via online retail services in their daily life.Students discuss how they could or will use search, sort and selection processes via online retail services in their project.**Activity 54:** students describe how they use online gaming platforms in their daily life.Students discuss how they could or will use online gaming platforms in their project. | Students use 2 design thinking tools, POOCH and SCAMPER, to improve the development of their front end, web-based interactive media system for their project.Students investigate data journalism and apply this concept to their project.Students explain how graphics that practice using data to inform and tell news stories are used to support an article.Students explain how graphics can be created using Instagram data to inform and tell the audience the data driven conclusion.Students examine their concept for Assessment task 1 and describe the purpose of their interactive media and who their typical user is.Students [brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542#.ZC4skSv0RLg.link) elements and ideas for data journalism that could be included in their task.Students explain what data collection and software they will use to incorporate data journalism into their project. If necessary, students re-examine their wireframe showcasing their interface, and design a space to include data journalism.Students select and justify an appropriate project management approach for their project to develop an interactive media-based solution. Students can use the Gantt chart provided to hit milestones in their project.Students describe how they will use this project management approach in their project.Students select an appropriate number of features of user interaction and UX for their project to develop an interactive media-based solution and list these.Students describe how they will use these user interactions and UX within their web-based systems in their project.Students describe how they use social media for communication processes in their daily life.Students discuss how they could or will use social media communication processes in their project.Students describe how they use search, sort and selection processes via online retail services in their daily life.Students discuss how they could or will use search, sort and selection processes via online retail services in their project.Students describe how they use online gaming platforms in their daily life.Students discuss how they could or will use online gaming platforms in their project. | This section is also for use in school when making adjustments to support all students to achieve in their learning. |  |

### Weeks 7–9

Table 7 – weeks 7–9 – lesson sequence and details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Evidence of learning | Differentiation/ adjustments | Registration and evaluation notes |
| **Outcomes:****EC-11-01****EC-11-02****EC-11-03****EC-11-04****EC-11-05****EC-11-06****EC-11-07****EC-11-08****EC-11-09****EC-11-10****EC-11-11****Content:**Students:* select and use appropriate file formats for a defined purpose
* use software to develop elements of interactive media in a project
* use hardware and software to digitise assets for use in interactive media systems, including lossy and lossless data compression
* explain how the user interface (UI) impacts on the user experience (UX)
* apply design tools and techniques to develop an engaging UI
* apply design thinking to develop a front-end, web-based interactive media system incorporating UX and UI principles
* develop and publish an interactive work of data journalism
* select an appropriate project management approach to develop an interactive media-based solution
* apply features of user interaction and UX within web-based systems.
 | **Learning intention**Produce and implement their interactive media and UX digital product solution.**Success criteria*** I can create my interactive media and UX system.
* I can use design thinking to develop a front-end, web-based interactive media system incorporating UX and UI principles.
* I can apply features of user interaction and UX within web-based systems.
* I can develop and publish an interactive work of data journalism.

**Teaching and learning activity****Producing and implementing Assessment task 1**Students create an interactive media and UX digital product for end users on an issue in the local community.Students design and develop a digital solution using curated or created assets for a system of information delivery.Students create a digital solution on an issue in their local community. They are encouraged to be creative and use local contacts to develop their own ideas.Examples of digital solutions could include (but are not limited to):* an environmental issue in your local community or school
* a school information kiosk and interactive map
* a project to raise awareness of a local First Nations peoples and their cultures in your local area
* teaching people about the local community groups including diversity or sport or event promotion
* developing a recycling initiative for your school or community group.

The digital solution has many options including:* a website or app
* media components such as film and music
* a podcast or vodcast
* an Augmented Reality (AR) / Virtual Reality (VR) presence
* a social media presence.

Students spend class time to focus on producing and implementing, and use planning tools such as the wireframe completed in the previous week to commence using software to:* Apply design thinking to develop a front-end, web-based interactive media system incorporating UX and UI principles.
* Apply features of user interaction and UX within web-based systems.
* Develop and publish an interactive work of data journalism.
 | Students work to complete the producing and implementing steps of Assessment task 1.* Apply design thinking to develop a front-end, web-based interactive media system incorporating UX and UI principles.
* Apply features of user interaction and UX within web-based systems.
* Develop and publish an interactive work of data journalism.

Students receive one on one advice and guidance from the teacher on their project development and use this feedback to improve their product. | This section is also for use in school when making adjustments to support all students to achieve in their learning. |  |

### Week 10

Table 8 – week 10 –lesson sequence and details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Evidence of learning | Differentiation/ adjustments | Registration and evaluation notes |
| **Outcomes:****EC-11-04****EC-11-08****EC-11-09****EC-11-10****EC-11-11****Content:**Students:* apply design thinking to develop a front-end, web-based interactive media system incorporating UX and UI principles
* develop and publish an interactive work of data journalism
* select an appropriate project management approach to develop an interactive media-based solution
* apply features of user interaction and UX within web-based systems.
 | **Learning intention**Test and evaluate their interactive media and user experience (UX) digital product solution.**Success criteria*** I can evaluate the performance requirements of hardware for specific interactive media products.
* I can self and peer assess the success of the product.

**Teaching and learning activity****Testing and evaluating Assessment task 1**Students review and improve their interactive media and UX digital product.* Students evaluate the performance requirements of hardware for specific interactive media products.
* Students self and peer assess the success of the product.

Students participate in self and peer review through a showcase of student projects. Students give 3-minute presentations, touring the class through a live demonstration of their product displayed on a large screen or projected to the class as an audience.Students present their project evaluation to the class and receive peer and teacher feedback. | Students participate in self and [peer review](https://forms.office.com/Pages/ShareFormPage.aspx?id=muagBYpBwUecJZOHJhv5kb87DsS3IbZAkL-M8JBLNh9UNVJYTDQzUjdJTDJZNTY5STROVk9LUU8xRSQlQCN0PWcu&sharetoken=opNl880RTkYs4a0otj7G&clearCache=ca7abceb-d72b-2e9b-a34a-da27e86e3c58) through a showcase of student projects. Students present their final product in a 3 minute presentation to the class touring the class through a live demonstration of their product displayed on a large screen or projected to the class as an audience.Students receive peer and teacher feedback. | This section is also for use in school when making adjustments to support all students to achieve in their learning. |  |

## Additional information

For additional support or advice, contact the TAS curriculum team by emailing TAS@det.nsw.edu.au.

### Further implementation support

Curriculum design and implementation is a dynamic and contextually-specific process. The department is committed to supporting teachers to meet the needs of all students. The advice below on assessment and planning for the needs of every student may be useful when considering the material presented in this sample program of learning.

### Assessment for learning

Possible formative assessment strategies that could be included:

* Learning intentions and success criteria assist educators to articulate the purpose of a learning task to make judgements about the quality of student learning. These help students focus on the task or activity taking place and what they are learning, and provide a framework for reflection and feedback. [Online tools](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/622) can assist implementation of this formative assessment strategy.
* Eliciting evidence strategies allow teachers to determine the next steps in learning and assist teachers in evaluating the impact of teaching and learning activities. Strategies that may be added to a learning sequence to elicit evidence include all student response systems, [exit tickets](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/543), mini whiteboards (actual or [digital](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/575)), [hinge questions](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/560), [Kahoot](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/621), [Socrative](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/587), or quick quizzes to ensure that individual student progress can be monitored and the lesson sequence adjusted based on formative data collected.
* Feedback is designed to close the gap between current and desired performance by informing teacher and student behaviour (AITSL 2017). AITSL provides a [factsheet to support evidence-based feedback](https://www.aitsl.edu.au/teach/improve-practice/feedback#:~:text=FEEDBACK-,Factsheet,-A%20quick%20guide).
* [Peer feedback](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/549) is a structured process where students evaluate the work of their peers by providing valuable feedback in relation to learning intentions and success criteria. It can be supported by [online tools](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Browser?cache_id=1d29b).
* Self-regulated learning opportunities assist students in taking ownership of their own learning. A variety of strategies can be employed and some examples include reflection tasks, [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645), [KWLH charts](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/562), [learning portfolios](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/583) and [learning logs](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/564).

The primary role of assessment is to establish where individuals are in their learning so that teaching can be differentiated and further learning progress can be monitored over time.

Feedback that focuses on improving tasks, processes and student self-regulation is the most effective. Students engaging with feedback can take many forms including formal, informal, formative, summative, interactive, demonstrable, visual, written, verbal and non-verbal.

[What works best 2020 update](https://education.nsw.gov.au/about-us/educational-data/cese/publications/research-reports/what-works-best-2020-update) (CESE 2020a)

### Differentiation

Differentiated learning can be enabled by differentiating the teaching approach to content, process, product and the learning environment. For more information on differentiation go to [Differentiating learning](https://education.nsw.gov.au/teaching-and-learning/professional-learning/teacher-quality-and-accreditation/strong-start-great-teachers/refining-practice/differentiating-learning) and [Differentiation](https://education.nsw.gov.au/campaigns/inclusive-practice-hub/primary-school/teaching-strategies/differentiation).

When using these resources in the classroom, it is important for teachers to consider the needs of all students in their class, including:

* **Aboriginal and Torres Strait Islander students**. Targeted [strategies](https://education.nsw.gov.au/teaching-and-learning/aec/aboriginal-education-in-nsw-public-schools) can be used to achieve outcomes for Aboriginal students in K-12 and increase knowledge and understanding of Aboriginal histories and cultures. Teachers should utilise students’ Personalised Learning Pathways to support individual student needs and goals.
* **EAL/D learners**. EAL/D learners will require explicit English language support and scaffolding, informed by the [EAL/D enhanced teaching and learning cycle](https://education.nsw.gov.au/teaching-and-learning/curriculum/literacy-and-numeracy/resources-for-schools/eald/enhanced-teaching-and-learning-cycle) and the student’s phase on the [EAL/D Learning Progression](https://education.nsw.gov.au/teaching-and-learning/curriculum/multicultural-education/english-as-an-additional-language-or-dialect/planning-eald-support/english-language-proficiency). In addition, teachers can access information about [supporting EAL/D learners](https://education.nsw.gov.au/teaching-and-learning/curriculum/multicultural-education/english-as-an-additional-language-or-dialect/teaching-and-learning#Differentiation2) and [literacy and numeracy support specific to EAL/D learners](https://education.nsw.gov.au/teaching-and-learning/curriculum/literacy-and-numeracy/resources-for-schools/eald).
* **Students with additional learning needs**. Learning adjustments enable students with disability and additional learning and support needs to access syllabus outcomes and content on the same basis as their peers. Teachers can use a range of [adjustments](https://education.nsw.gov.au/teaching-and-learning/disability-learning-and-support/personalised-support-for-learning/adjustments-to-teaching-and-learning) to ensure a personalised approach to student learning. Subject specific curriculum considerations can be found on the [Inclusive Practice hub](https://education.nsw.gov.au/campaigns/inclusive-practice-hub).
* **High potential and gifted learners**. [Assessing and identifying high potential and gifted learners](https://education.nsw.gov.au/teaching-and-learning/high-potential-and-gifted-education/supporting-educators/assess-and-identify#Assessment1) will help teachers decide which students may benefit from extension and additional challenge. [Effective strategies and contributors to achievement](https://education.nsw.gov.au/teaching-and-learning/high-potential-and-gifted-education/supporting-educators/evaluate) for high potential and gifted learners help teachers to identify and target areas for growth and improvement. In addition, the [Differentiation Adjustment Tool](https://education.nsw.gov.au/teaching-and-learning/high-potential-and-gifted-education/supporting-educators/implement/differentiation-adjustment-strategies) can be used to support the specific learning needs of high potential and gifted students. The [High Potential and Gifted Education Professional Learning and Resource Hub](https://schoolsnsw.sharepoint.com/sites/HPGEHub/SitePages/Home.aspx) supports school leaders and teachers to effectively implement the High Potential and Gifted Education Policy in their unique contexts.

All students need to be challenged and engaged to develop their potential fully. A culture of high expectations needs to be supported by strategies that both challenge and support student learning needs, such as through appropriate curriculum differentiation. [What works best 2020 update](https://education.nsw.gov.au/about-us/educational-data/cese/publications/research-reports/what-works-best-2020-update) (CESE 2020a:6)

### Support and alignment

**Resource evaluation and support:** all curriculum resources are prepared through a rigorous process. Resources are periodically reviewed as part of our ongoing evaluation plan to ensure currency, relevance and effectiveness. For additional support or advice, contact the TAS curriculum team by emailing TAS@det.nsw.edu.au.

**Alignment to system priorities and/or needs:** [School Excellence Policy](https://education.nsw.gov.au/policy-library/policies/pd-2016-0468), [School Success Model](https://education.nsw.gov.au/public-schools/school-success-model/school-success-model-explained).

**Alignment to the School Excellence Framework:** this resource supports the [School Excellence Framework](https://education.nsw.gov.au/teaching-and-learning/school-excellence-and-accountability/sef-evidence-guide/resources/about-sef) elements of curriculum (curriculum provision) and effective classroom practice (lesson planning, explicit teaching).

**Alignment to Australian Professional Teaching Standards:** this resource supports teachers to address [Australian Professional Teaching Standards](https://educationstandards.nsw.edu.au/wps/portal/nesa/teacher-accreditation/meeting-requirements/the-standards/proficient-teacher) 3.2.2, 3.3.2.

**Consulted with:** Curriculum and Reform and subject matter experts.

**NSW syllabus:** Enterprise Computing 11–12

**Syllabus outcomes:** EC-11-01, EC-11-02, EC-11-03, EC-11-04, EC-11-05, EC-11-06, EC-11-07, EC-11-08, EC-11-09, EC-11-10,

EC-11-11.

**Author:** TAS, Curriculum Secondary Learners, Curriculum Reform

**Publisher:** State of NSW, Department of Education

**Resource:** Program of learning

**Related resources:** further resources to support Enterprise Computing 11–12 can be found on the [TAS curriculum page](https://education.nsw.gov.au/teaching-and-learning/curriculum/tas).

**Professional learning:** relevant professional learning is available through [HSC Professional Learning](https://education.nsw.gov.au/teaching-and-learning/professional-learning/hsc-pl) or on the [TAS curriculum page](https://education.nsw.gov.au/teaching-and-learning/curriculum/tas).

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## Evidence base

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## References

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