

Adaptive Technology and UX

80 minutes (2 periods)

Ethics, Society, and Emerging Technologies

Outcome 1.15

Outcome 1.16

Outcome 1.17

WHAT THIS LESSON DOES

In this lesson, you'll explore how technology can be made inclusive for all users, including those with special needs. Learn about universal design, adaptive tools, and user experience, then compare websites and suggest improvements for better accessibility.

CURRICULUM OUTCOMES

Outcome	What the specification asks for
1.15	consider the quality of the user experience when interacting with computers and list the principles of universal design, including the role of a user interface and the factors that contribute to its usability
1.16	compare two different user interfaces and identify different design decisions that shape the user experience
1.17	describe the role that adaptive technology can play in the lives of people with special needs

WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand the principles of Universal Design and their role in creating inclusive technology.
- Recognise the importance of adaptive technology in supporting users with special needs.
- Analyse key elements of User Experience (UX) and User Interface (UI) that impact usability.
- Evaluate digital interfaces for accessibility and user-friendliness through comparison.
- Propose design improvements to enhance inclusivity using Universal Design principles.

BEFORE THE LESSON

- Confirm the school filter lets students reach the comparison sites they will use, for example a simple search page and a busy retail page. Test both in the room's browser first so a blocked site does not derail the comparison task.
- Decide how students will capture their comparison and improvement notes, whether shared document, presentation or spoken back to you, and have that ready. There is no student book for this.

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HOW THE LESSON RUNS

Introduction

User Interface (UI)

User Experience (UX)

Universal Design

Exploring Adaptive Technology

Comparing User Interfaces

Suggesting Improvements

Wrap Up

TEACHING MOVES

- 2. User Interface (UI). Point at the room's own screens: buttons, menus, icons, layout. UI is what you see and touch. Ask students to name one UI element they find clear and one they find confusing on a familiar app.
- 3. User Experience (UX). Draw the line clearly: UI is the thing, UX is how using it feels. A beautiful interface with slow loading is good UI, poor UX. Have students describe a time an app frustrated them and locate the cause.
- 4. Universal Design. Give the seven principles as a checklist, not a list to memorise. Anchor each in a physical example students know: dropped kerbs, automatic doors, captions on video. Stress it benefits everyone, not only disabled users.
- 5. Exploring Adaptive Technology. If VoiceOver or Narrator is available on a device in the room, turn it on for thirty seconds so students hear a screen reader. Nothing makes the point faster than navigating a page with eyes closed.
- 6. Comparing User Interfaces. Insist students actually complete a task on each site, not just look at it. Search for something, add to a basket. Have them judge against named Universal Design principles, not vague personal taste.
- 7. Suggesting Improvements. Push for specific, justified changes tied to a principle or an adaptive technology, for example larger touch targets for motor difficulty or alt text for screen readers. Reject general answers like make it nicer.

WHAT TO WATCH FOR

- Students treat accessibility as a niche feature only for a small group of disabled users, so improvements feel optional. Reframe with curb-cut examples: captions help in noisy rooms, high contrast helps in sunlight, voice input helps when hands are busy. Universal Design helps everyone, which is the whole point.
- Students equate a good-looking site with a good site, judging UX by appearance alone. Force them to time a real task and count clicks on both sites. A slick page that hides its search box has good UI and poor UX. Separate the two explicitly.

DIFFERENTIATION

- Emerging: If a chosen site is blocked or slow, give them a fixed pair to compare so they are evaluating rather than fighting the browser. Offer the seven principles as a printed checklist and have them tick which each site meets before writing anything.
- Developing: Ask them to name the specific Universal Design principle behind each observation, moving from 'this is confusing' to 'this fails flexibility in use'.
- Proficient: Have them evaluate a site against WCAG-style criteria such as colour contrast and keyboard-only navigation, then write their improvement proposal as evidence they could reuse in an Applied Learning Task on design. Challenge them to test one page using only the keyboard, no mouse, and report what breaks.