## Learning hook

**Rapid research task 1**

1. Set your students this rapid research challenge:
	* **The question:** What four inventions became available in 1985 and revolutionised the printing industry, causing the term 'desktop publishing' to be coined?
	* **The task:** Students participate in a research race to be the first to identify all four of these inventions.

**Additional Scaffolding**

Keep in mind that if students google the exact question above, they will get a link to this webpage with the answers. You should try to encourage them to search for ‘History of Desktop Publishing’, which will give students a lot of information. You can also scaffold them to search for ‘inventions in 1985 for desktop publishing’. They should find links like: <https://www.lifewire.com/when-was-desktop-publishing-invented-1073863> and <https://en.wikipedia.org/wiki/Desktop_publishing>

***Top******answers****for you and for the next task:*

1. the newly invented LaserWriter printer
2. the PostScript description language by Adobe
3. Aldus's PageMaker app
4. the new Macintosh graphical user interface (optional)
5. using AppleTalk networking for workplace sharing of the printer (note the importance of networking for a printer, as this allows one very costly printer to be shared among multiple computers) (optional)
6. employing the mouse as an input device (optional)
7. Divide the class into five equal groups, assigning each group one of the top five inventions above. If you want smaller groups, you can have a sixth group research the computer mouse.
8. Tell the groups they have a set time to find out why their invention was so significant, who invented it, why it was significant, what relationship it had with the other four inventions and what it cost.

**Rapid research task 2**

1. Students first read the following by a blogger who was a publisher of a small paper in 1985:

'Jobs and Apple introduced the first Macintosh computer in January 1984. This was the first personal computer to feature a mouse and a graphical user interface (GUI), rather than a command-line interface. Sounds technical - but it was really simplicity as poetry.
The next year, Apple released the Laser Writer. And Aldus Corp. (now Adobe) released Pagemaker 1.0.
Voila!
The combination of the Macintosh computer, the Laser Writer and Pagemaker allowed my little Montana weekly - and many other newspapers - to set type with improved quality, increased speed and reduced cost.
The desktop publishing revolution was born … I think Guttenberg [sic] smiled.'

(Extracted from '[Wilson: Thank you, Steve Jobs!](http://www.newsandtech.com/columnists/article_e2a29c18-f061-11e0-8f93-001cc4c002e0.html)')

1. Task: Advances in hardware technology can have profound social impacts Gutenberg and Aldus were both mentioned in this reading. What were the technologies they created and what were their impacts on society?

**Visual Impairment/Additional Scaffolding:**

**As another means of representation:**

you may want to find a video on the history of desktop publishing which may make it easier for students to understand how each of these inventions combine to create what we call ‘desktop publishing’.

**Rapid research task 3**

1. Ask students: What software product used today is a direct descendent of Aldus PageMaker?

(Answer: Adobe InDesign)

1. Conclude the topic for students.

*The contributions of Gutenberg's hardware (invention of the printing press and moveable type) and Aldus's typefaces (invention of italic) to the printing revolution of the 15th century parallel the events of 1984.*Read aloud the following extract from Steve Jobs's Stanford University commencement address:

'I decided to take a calligraphy class to learn how to [learn calligraphy]. I learned about serif and sans-serif typefaces, about varying the space between different letter combinations, about what makes great typography great. It was beautiful. Historical. Artistically subtle in a way that science can't capture. And I found it fascinating. None of this had any hope of any practical application in my life. But 10 years later, when we were designing the first Macintosh computer, it all came back to me. And we designed it all into the Mac. It was the first computer with beautiful typography. If I had never dropped in on that single course in college, the Mac would never have multiple typefaces or proportionally spaced fonts. And since Windows just copied the Mac, it's likely that no personal computer would have them. Of course it was impossible to connect the dots looking forward when I was in college. But it was very, very clear looking backward 10 years later. Again, you can't connect the dots looking forward; you can only connect them looking backward. So you have to trust that the dots will somehow connect in your future. You have to trust in something — your gut, destiny, life, karma, whatever. This approach has never let me down, and it has made all the difference in my life.'

(Taken from the article '['You've got to find what you love,' Jobs says](https://news.stanford.edu/2005/06/14/jobs-061505/)' from the Stanford News)

1. Emphasise to students that invention is often the result of someone having unique experiences or convictions and being one of very few who see a new possibility and then work to make it happen.

## Learning map and outcomes

This lesson sequence provides a case study for students in the impact of innovation, the circumstances that facilitate it, the potential within each of us to contribute to change due to our own unique experiences, and the importance of addressing benefits as well as risks in the development of new systems. The moment in history explored in the 'Learning hook' reveals the impact that can result when important elements work together.

## Learning input

1. Students will be amused to see advertisements for early operating systems:
* [12 Old mac ads](https://youtu.be/VaZgtQRmunA)
* [Windows 95 launch ad](https://youtu.be/5VPFKnBYOSI)
1. Show [the Superbowl ad by Ridley Scott](https://youtu.be/VtvjbmoDx-I) for Apple's launch of the Macintosh computer in 1984, reputedly one of the most expensive ads ever.
2. Ask students to explore this [browser-based interactive emulation](http://myoldmac.net/webse-e-flash.htm) of one of the earliest Apple Macintosh computers.
3. Provide further experiences of early desktop operating systems.
4. Conduct a class discussion on the major ways modern systems have evolved since these early examples.
5. Explain that users show a bias towards the system with which they are familiar and find it difficult to perform an independent evaluation.
6. Explain to students that in this lesson they will be expected to overcome this tendency as they critique MS Word’s interface as managed by two different operating systems.
7. Demonstrate the main features of Microsoft Word's interface under both Windows and Macintosh operating systems.
8. In discussion with the class, suggest specific issues for comparison such as:
* how each system displays common tools
* how the colour palette is used in each system
* how file saving is handled in each system
* how printing is handled in each system
* whether print dialog boxes are delivered by the OS, the printer or the application.

**Alternative or Extension activity**

**As another means of representation:**

Many students are familiar with Facebook. They could research MySpace and could discuss similarities and differences between the two social networking platforms. For example, MySpace had the ‘Top 8 Friends’ feature—why doesn’t Facebook have this? Also, students could extend the discussion by researching and hypothesizing why MySpace lost popularity and Facebook continues to be most visited website.

## Learning construction

1. Students research the origins of MS Word.
2. Students use Microsoft Word on a system with which they are familiar, to compile a list of milestones in the development of that operating system.
3. Students use tools provided by MS Word to carefully format this in the form of a prototype A3 poster design with suitably selected and placed images.
4. Emphasise to students the importance of copyright and the attribution of images for this student activity, and establish a method for this. Captions? Footnotes? Acknowledgements?
5. Students now create final poster using a desktop publishing application.
6. Students discuss the limitations of a word processing software in designing a poster and the benefits of desktop publishing software.
7. Issue [Worksheet: Early operating systems comparison table](https://www.digitaltechnologieshub.edu.au/docs/default-source/getting-started-years-9-10/the-shock-of-the-new-computer-systems-and-the-impact-of-innovation/worksheet-early-operating-systems-comparison-table.pdf?sfvrsn=0). Invite students to list interface features of an early system and complete the table provided. The three columns are ticked/crossed:
* Is the feature present in current Windows OS?
* Is the feature present in current Mac OS?
* Has the feature been modified in current systems?

## Learning demo

1. Select six students (three for one side and three for the opposing side) for a debate on the topic of which OS has more features.
2. Assist students to prepare arguments for the debate by conducting a class discussion on the relative merits of each OS.
3. Students debate, adjudicated by the teacher or a guest teacher experienced in debate adjudication.

## Learning reflection

Lead a discussion with students about how they envisage these systems changing in the next 10 years. In small groups students report on innovations they anticipate.

## Curriculum links

| Links with Digital Technologies Curriculum Area |
| --- |
| **Strand** | **Content Description** |
| **Processes and Production Skills** | Evaluate existing and student solutions against the design criteria, user stories, possible future impact and opportunities for enterprise [(AC9TDI10P10)](https://v9.australiancurriculum.edu.au/f-10-curriculum.html/learning-areas/digital-technologies/year-9_year-10/content-description?subject-identifier=TECTDIY910&content-description-code=AC9TDI10P10&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0&view=quick). |

## Assessment

Note: Criteria are cumulative

|  | **Quantity of knowledge** | **Quality of understanding** |
| --- | --- | --- |
| **Operating system comparison** | No evidence of understanding | Student is able to describe the features of one operating system | Student is able to describe the features of two operating systems | Student is able to compare the features of two operating systems | Student is able to comprehensively compare the features of two operating systems |
| **Benefits and risks** | No evidence of understanding | Student can identify a number of risks or benefits of system innovation | Student can describe a number of benefits and a number of risks of system innovation | Student can articulate the impact of a risk or a benefit of system innovation | Student can articulate the impact of both a risk and a benefit of system innovation |
| **Optional score** | 0 | 1 | 2 | 3 | 4 |