THE PRIORY ACADEMY

LSST

Sixth Form Induction Day

Product Design Taster Session

THE PRIORY FEDERATION OF ACADEMIES TRUST

Starter Activity

Can you name the designer/ inventor and/or the year of the invention?

DK Learning

A CENTURY of INVENTION

Can you guess the year each of these were invented over the last 100 years?

TELEVISION

Scottish inventor John Logie Baird demonstrated moving television images, which evolved into the home entertainment systems we see today.

PENICILLIN

Scottish scientist Alexander Fleming noticed that mould was destroying bacteria in his laboratory, and used this to create the first antibiotic. Since the 1940s, penicillin has saved the lives of millions.

JET ENGINE

English engineer Sir Frank Whittle patented his design for a jet engine. The first successful flight of a British jet aircraft took off in 1941.

ZEBRA CROSSING

The first zebra crossing was installed in Slough, England. Vehicles had to stop at these black-and-white striped road markings, so pedestrians could cross the road safely.

DNA

English biologist Francis Crick and US scientist James Watson used the work of English chemist Rosalind Franklin as the basis for their structure of DNA – the genetic code for all living things – and won the Nobel Prize for their efforts.

HOVERCRAFT

English engineer Christopher Sydney Cockerell invented the hovercraft, a high-speed water vehicle that hovers over the sea on a cushion of air, like a giant inflatable tyre.

WORLD WIDE WEB

Jamaican researchers Professor Manley West and Dr Albert Lockhart developed Canasol, a treatment for glaucoma, a serious eye condition, saving the sight of people all over the world.

SIGHT-SAVING MEDICINE

Australian professor Graeme Clark invented the cochlear implant – an electronic device that is placed inside the ear, and which helps people who have hearing loss to understand sound.

BIONIC EAR

Canadian filmmakers Graeme Ferguson, Roman Kroitor, Robert Kerr, and William Shaw gave moviegoers a new experience with giant, high-definition IMAX screens, six times bigger than standard screen.

SUPERSIZE SCREENS

Northern Ireland cardiologist Frank Pantridge invented the portable defibrillator, an emergency device that helps failing hearts, and has since saved millions of lives.

PORTABLE DEFIBRILLATOR

This classic compact car was created by English inventor Alec Issigonis. The attractive design, small size, and affordable price tag made the Mini hugely popular.

MINI

English engineer Christopher Sydney Cockerell invented the hovercraft, a high-speed water vehicle that hovers over the sea on a cushion of air, like a giant inflatable tyre.

WIND-UP RADIO

English inventor Tim Berners-Lee invented the World Wide Web (www) – the system of linked web pages with comprehensive content for the public to access through the internet.

ANIMAL CLONING

Scientists at the Roslin Institute, University of Edinburgh, created Dolly the sheep, cloned from her parent sheep as an identical copy. This made Dolly the first-ever cloned mammal.

HARRY POTTER

The first book about fictitious wizard Harry Potter, entitled Harry Potter and the Philosopher's Stone, was published. This led to seven books by English writer J. K. Rowling in the best-selling series, as well as a successful film franchise.

IPHONE

English–American Jony Ive helped to revolutionise mobile phones when he designed the stylish iPhone with its touch screen, lightweight frame, and built-in mobile App Store. He also designed the iPad, iPod, and Apple Watch.

SPACE VISIT

English astronaut Tim Peake became the first British astronaut to visit the International Space Station (ISS) and the first person to be awarded an honour from The Queen while in space.

SPACE TOURISM

On board his Virgin Galactic rocket plane, English entrepreneur Richard Branson flew into space for an hour-long trip of a lifetime, paving the way for tourists to visit space in the future.

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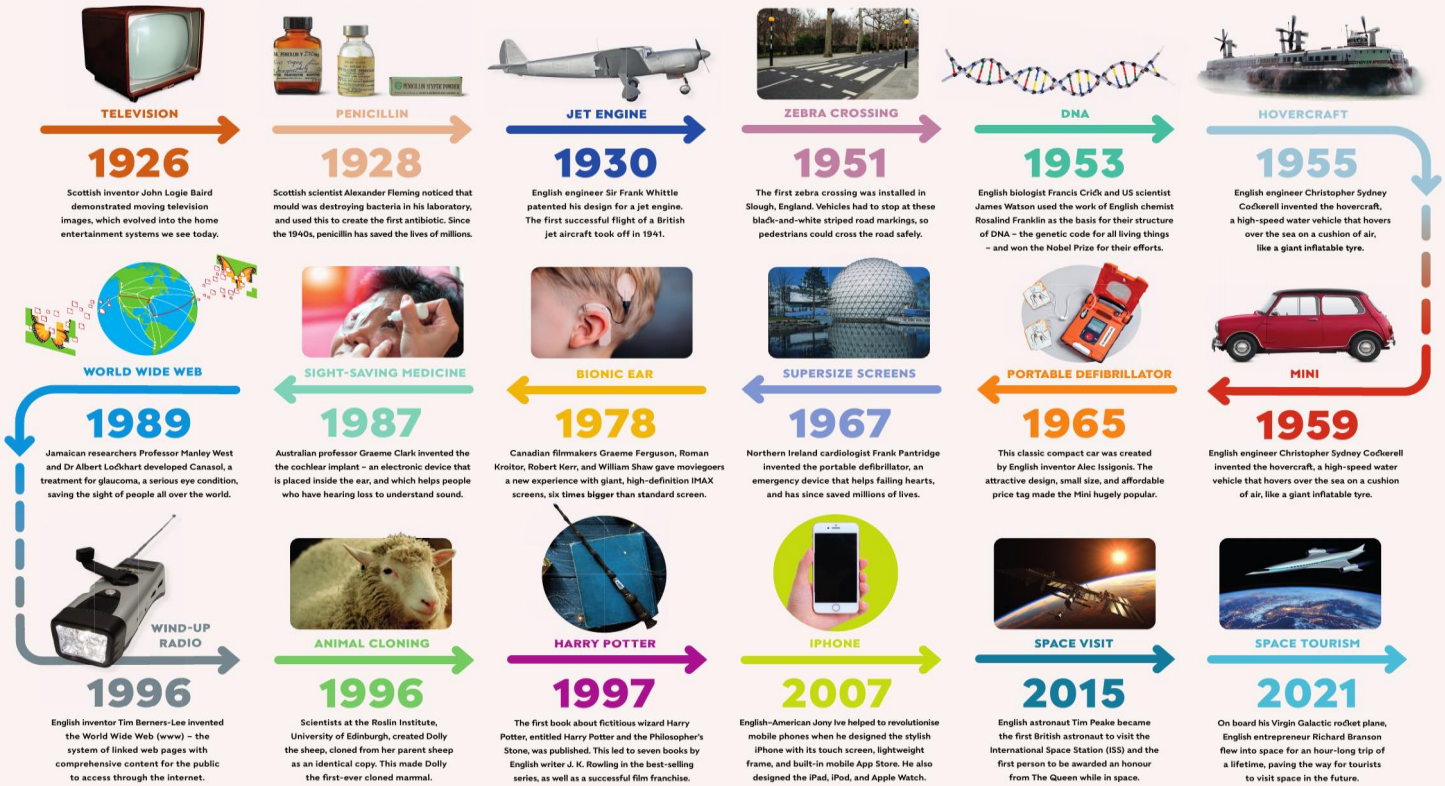
How did you do???

Can you name the designer/ inventor and/or the year of the invention?

DK Learning

A CENTURY of INVENTION

How did you do?



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Assessment – AQA 7552
A Level Product Design

Exam Paper 1 Technical Principles	2 ½ hours Short & extended response	120 marks	30%
Exam Paper 2 Designing & Making Principles	1 ½ hours Product analysis (short answer – 30mks) Commercial manufacture (short/extended 50 mks)	80 marks	20%
NEA (Non Exam Assessment)	Design portfolio & photographic evidence of final prototype.	100 marks	50%

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Course Structure

- **The Basics…**
- Y12 – Multiple design/ workshop based projects to increase skills
- Y13 - NEA. In year 13 -45hrs single substantial design and make task. The portfolio should have photographs illustrating the making of the final product.
- Exam Board - AQA
- Assessment - 50% written exam/ 50% NEA
- Exams - 2 x (1x2hr30min and 1x1hr30min) exams, end of Y13
- Begin NEA major project in summer Y12 (45 x Power Point slides max)

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NEA coursework Folder

- Some of you will have already experienced this at GCSE level , the structure is similar (although more detailed).
- Context choice is very much more of an individual decision (it can make all the difference if you choose well)
- You will begin this in module 3 or 4 of Year 12.
- To be successful it is critical to follow the structure that the exam board expect to see and aim to complete each section to a very high standard.
- AQA | A-level | Design and Technology: Product Design | Scheme of assessment

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Examination

- Split into 2 papers, 1x2hr30min and 1x1hr30min
- Paper 1 – Technical principles 2hr30min
- Paper 2- Designing and Making Principles
- Knowledge for these built from
- Weekly theory lessons
- Practical experience
- Independent (self motivated) reading/experience
- With both coursework and exam you will get out what you put in!

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Example work review

- Your chance to see past examples of NEA and Examination tasks
- Past student's exemplar folder

- NEA - Guitar stand LW.pdf

- Product Design Coursework joe giles 2022-23.pdf

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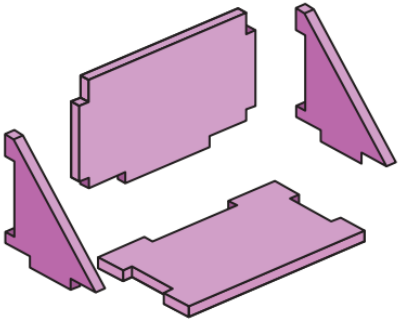
Something to make you think….

Fabricated Acrylic component



1 **FIGURE 1 shows the dimensions of the components required to produce FIGURE 2.**

The component parts are cut from a 90 mm × 70 mm × 3 mm sheet of acrylic.

Calculate the percentage (%) of waste from the acrylic sheet.

Describe the purpose of risk assessment in a manufacturing environment. [6 marks]

Concrete table tennis table

Explain why concrete is a suitable material for the manufacture of the outdoor table tennis table shown in FIGURE 5. [6 marks]

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