

Design and technology

List of significant designers, inventors and developments

Year 1

Year 2

Structures: Constructing a windmill

Cooking and nutrition: Balanced diet

Cornelis Corneliszoon van Uitgeest

- Originating from the Netherlands, he revolutionised windmill design in the 16th century.
- His modifications increased efficiency, particularly in sawing timber, thereby transforming the utility of Dutch windmills during his era.

Jamie Oliver

- Helped raise awareness about the quality of school dinners in 2005. More recently, he has voiced concerns about the effect of the pandemic on food choices.
- He supports teachers, charities and young people who are looking to change mindsets so every child gets healthy, nutritious food, providing the opportunity for dietary health.
- He is also a celebrity chef who designs healthy and affordable meals for people to cook themselves.

Daniel Halladay

- An American inventor from the 19th century.
- He designed a self-regulating windmill adept at pumping water in America's rural areas.
- His design ensured the windmill would automatically adjust to varying wind speeds, making operations smoother and more consistent.

Dr James Blyth

- A Scottish engineer and academic from the late 19th century.
- He is recognised for creating one of the initial wind turbines that generated electricity.
- His contributions marked a significant step forward in the quest for harnessing wind energy.

Mechanisms: Wheels and axles

Mechanisms: Making a moving monster

Henry Ford

- Revolutionised manufacturing methods by introducing a moving assembly line to make the automobile affordable for the general population.

*Rube Goldberg

- An American cartoonist, Goldberg was best known for his popular cartoons depicting complicated gadgets performing simple tasks in indirect, convoluted ways.
- These "Rube Goldberg machines" embody the principle of creating movement and reactions through a series of linked, mechanical actions.
- His designs were whimsical and humorous, but provide a rich source of inspiration for understanding how levers, linkages, and pivots can interact.

*Theo Jansen

- Dutch artist who creates large, complex, kinetic sculptures called Strandbeests that use wind power to move.
- Jansen's Strandbeests use an elegant system of linkages to create complex, lifelike movements.
- This could be a great example to show how linkage systems can be used to create complicated and coordinated motions.

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Digital world: Wearable technology	Structures: Constructing a castle
<p>Christopher Latham Sholes</p> <ul style="list-style-type: none"> Patented the typewriter in 1868. 	<p>*Eugène Viollet-le-Duc</p> <ul style="list-style-type: none"> A French architect and author, Viollet-le-Duc was famous for his interpretive "restorations" of medieval buildings. He redesigned parts of the famed Notre-Dame Cathedral in Paris and numerous castles, enhancing the structures while maintaining their historical significance. He could provide a good example of understanding and employing 3D shapes and structures for creating strong architectural forms.
<p>Seymour Rubenstein and Rob Barnaby</p> <ul style="list-style-type: none"> Credited with the invention of the first word processor. 	<p>*Zaha Hadid</p> <ul style="list-style-type: none"> An Iraqi-British architect, Hadid was known for her radical deconstructivist designs. Many of her works involve fluid and unconventional shapes, demonstrating a creative approach to 3D design.
<p>Digital revolution</p> <ul style="list-style-type: none"> The development in technology that started in the 1980s and is still happening today. 	<p>*Alan Lee and John Howe</p> <ul style="list-style-type: none"> While not architects in a traditional sense, illustrators Alan Lee and John Howe played a significant role in designing structures, including castles, for the "Lord of the Rings" film series. Their work, while grounded in fantasy, offers a detailed study of castle design, construction, and aesthetics.

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Electrical systems - Torches	Digital world: Mindful moments timer
<p>Dr John Clayton</p> <ul style="list-style-type: none"> Discovered the earliest captured light by burning coal inside an animal's bladder. 	<p>*Ivy Ross</p> <ul style="list-style-type: none"> Ivy Ross is currently the Head of Google's Hardware Design team. Played a major role in designing Google's Home Mini and Max, which are aesthetically pleasing, minimal, and functional smart devices. She might provide a great source of inspiration for children designing the casing for a mindful moment timer, as she is known for designing products that easily blend into their surroundings.
<p>Sir Joseph Swan</p> <ul style="list-style-type: none"> English physicist and chemist. Invented the first electric light bulb in 1860, which used a glass, vacuum casing and filament, that we recognise in the bulbs of today. His original design was not very practical to power and Thomas Edison further developed this design. 	<p>*Amit Pitaru</p> <ul style="list-style-type: none"> A designer and coder, Pitaru is one of the creators of Scratch, a block-based visual programming language targeted primarily at children. His work could serve as a model for how to effectively implement block code in the creation of this timer.
<p>Thomas Edison</p> <ul style="list-style-type: none"> American inventor, with a world record number of original invention patents (1,093). Developed the incandescent lamp, improving on Joseph Swan's design almost 20 years later in 1880, which could then be used as part of a circuit to form a practical lighting system. 	
<p>Lewis Latimer</p> <ul style="list-style-type: none"> The inventor of the carbon filament inside light bulbs. 	

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Mechanical systems: Pop-up book	Structures: Bridges
<p>*Robert Sabuda</p> <ul style="list-style-type: none"> • Sabuda is an American artist and paper engineer, renowned for his pop-up books for children. • His designs are complex and intricate, using a variety of techniques to create movement and surprise. • His books include reimagined versions of classic stories and fairy tales, like Alice in Wonderland and The Wizard of Oz. 	<p>Norman Foster</p> <ul style="list-style-type: none"> • Designer of the London Millennium Footbridge.
<p>*David A. Carter</p> <ul style="list-style-type: none"> • Carter is a prolific pop-up book author and artist who is perhaps best known for his "Bugs" series of books, which use pop-up techniques to bring a whole world of quirky insects to life. • His work is highly engaging and interactive, which makes it especially attractive to young children. 	
<p>*Masahiro Chatani</p> <ul style="list-style-type: none"> • Was a Japanese architect and considered a pioneer of origamic architecture, a type of papercraft that uses cut-out and folded paper to create architectural forms. • Although he did not directly create pop-up books, his designs demonstrate the potential of paper as a medium. 	

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Digital world: Navigating the world	Textiles: Waistcoats
<p>*Yves Béhar</p> <ul style="list-style-type: none"> ● A famous industrial designer and entrepreneur known for his work on tech products. ● One of his projects includes the design of "August", a smart lock system that could be applied in a broader sense to navigation tools. ● Béhar is a Swiss designer based in the USA and he founded Fuseproject, a design and branding firm. ● His approach to design, which is very human-centered and sustainable, would be a great inspiration. 	<p>Vivienne Westwood</p> <ul style="list-style-type: none"> ● Vivienne Westwood became well known for designing corsets with a punk influence. ● She even created her own clan, MacAndreas, with its own tartan. The Lochcarron of Scotland recognised the design. This process usually takes 200 years.
<p>*Patricia Moore</p> <ul style="list-style-type: none"> ● An American industrial designer and gerontologist, Moore is known for her advocacy in universal design, which aims to create products that are accessible to people of all abilities and ages. ● This could be an inspiring approach when designing a multi-tool that needs to be user-friendly and functional for various users. 	<p>Stella McCartney</p> <ul style="list-style-type: none"> ● Started out training to design and make suits. ● She now has a design label named after her. ● Stella McCartney was appointed creative director by Adidas for the 2012 Olympics, designing outfits for Team GB. ● As a vegetarian, she stays true to her beliefs by refusing to work with fur or leather.
<p>*Naoto Fukasawa</p> <ul style="list-style-type: none"> ● A Japanese industrial designer who is known for his minimalist design aesthetic. ● He has designed various tech products and his approach to design, which focuses on simplicity and intuition, could be a great inspiration when designing a multi-tool. ● This is because a multi-tool must be simple enough for various users to understand, yet intuitive enough to perform complex tasks. 	<p>Thomas Burberry</p> <ul style="list-style-type: none"> ● One of Britain's oldest fashion labels. ● It began as an outdoors wear company renowned for its hard-wearing, waterproof fabric: gabardine. ● The material was invented by Thomas Burberry in 1870 and was very popular. ● Polar explorers like Roald Amundsen and Ernest Shackleton used the fabric during their journeys. ● Burberry has now become a luxury fashion brand.

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