

Five Formidable Female Engineers

The term 'engineering' could be simply translated as 'making things work' and this could be in many areas including the invention or development of machines, processes or structures. Engineers use skills in maths, science and technology to solve problems, design, build, research, innovate and invent.

We know a lot of information about male engineers, such as Isambard Kingdom Brunel and George Stephenson, who have made significant contributions to technology, but what about the women? Ever heard of Hedy Lamarr or Kalpana Chawla? No? Well read on to find out more about these and other remarkable women.

Hedy Lamarr 1914 - 2000

Amazingly, Hedy Lamarr had two high-profile careers: not only did she make ground-breaking inventions in technology but she was also a successful Hollywood actress!

She was Austrian born, but moved to America where she was instrumental in developing radio and communications technology to enable encrypted messages to be transmitted safely. This technology formed the whole basis of mobile phone and Wi-Fi communications today. She stands today as an icon for women in engineering.



Maggie Aderin-Pocock 1968 -

You may have seen Maggie Aderin-Pocock on the television as she is passionate about space and science education.

Her early career was at the Ministry of Defence, working on aircraft missile warning systems and landmine technologies, after which she ventured into the world of space projects. She has worked on the Gemini telescope in Chile and also on satellite observations technologies and is now well known for her role in space and science education, including her role as a presenter on The Sky at Night and other educational documentaries.





Stephanie Kwolek 1923 - 2014

Stephanie Kwolek, daughter of Polish parents, was an American chemist who, after gaining a degree in chemistry, went to work for DuPont where she created Kevlar. She worked with polymers – types of plastics made of chains of molecules. She found that by mixing certain polymers, a new and very strong substance was formed – this was named Kevlar.

Because of its strength and lightweight characteristics, it can be used in a range of items, from vehicle tyres to bulletproof vests – a truly life-changing and life-saving substance.

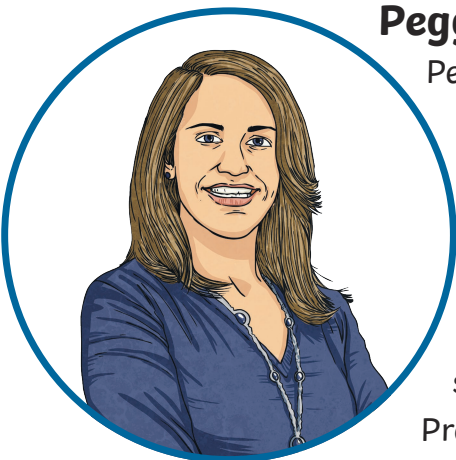
Kalpana Chawla 1962 - 2003

Kalpana Chawla had always been interested in aeroplanes as a young girl. She gained a degree in aeronautical engineering from the Punjab Engineering College in Chandigarh, India, after which she travelled to the USA where she gained a Master of Science degree in aerospace engineering. You would think that this was impressive enough, but she went on to gain a second master's degree and a PhD in aerospace engineering whilst determined to become an astronaut – which she did, being the first Indian woman to do so. In 1988, she joined NASA and worked her way up to becoming an astronaut and taking her first flight in 1996.



Peggy Johnson 1963 -

Peggy Johnson was named by Business Insider as the number one Most Powerful Female Engineer in 2017. She is the Executive Vice President of Business Development for the global giant Microsoft.



She started her career with a degree in electrical engineering from San Diego State University before spending twenty-four years working as Executive Vice President and President of Global Market Development for Qualcomm, a leading wireless telecommunications company. Wireless you say? Where would she be without Hedy Lamarr?

Questions

1. Tick which of these professions could be an engineer:

Aeroplane engine designer

Inventor

Car mechanic

Artist

2. Name two different countries in which Hedy Lamarr lived.

3. What couldn't be done before Hedy Lamarr's invention?

4. In the text the author uses the word '**ground-breaking**'. Which word most closely matches the word '**ground-breaking**'?

insignificant

ordinary

useful

innovative

5. Does Maggie Aderin-Pocock work on fact or fictional programmes for television? Support your answer with an example from the text.

6. How was Kevlar made?

7. Why is Kevlar called a 'life-saving' substance?

8. How many years did it take Kalpana Chawla to take her first flight as an astronaut after joining NASA?

9. Why does the author ask where Peggy Johnson would be without Hedy Lamarr?

10. Which of these women do you most admire and why?

Answers

1. Tick which of these professions could be an engineer:

Aeroplane engine designer

Inventor

Car mechanic

Artist

2. Name two different countries in which Hedy Lamarr lived.

Hedy Lamarr lived in Austria and America.

3. What couldn't be done before Hedy Lamarr's invention?

Before Hedy Lamarr's invention, people could not send radio messages that were secret.

4. In the text the author uses the word '**ground-breaking**'. Which word most closely matches the word '**ground-breaking**'?

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5. Does Maggie Aderin-Pocock work on fact or fictional programmes for television? Support your answer with an example from the text.

Maggie Aderin-Pocock works on factual programmes because the author has written that she works on 'documentaries' and they are factual.

6. How was Kevlar made?

Kevlar was made by mixing two polymers together.

7. Why is Kevlar called a 'life-saving' substance?

Kevlar is called a life-saving substance because of its uses. These include bullet-proof vests which save lives.

8. How many years did it take Kalpana Chawla to take her first flight as an astronaut after joining NASA?

There were eight years between Kalpana Chawla joining NASA and her taking her first flight.

9. Why does the author ask where Peggy Johnson would be without Hedy Lamarr?

Peggy Johnson's industry relies heavily on Wi-Fi and mobile communications which would not be possible without Hedy Lamarr's invention.

10. Which of these women do you most admire and why?

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