

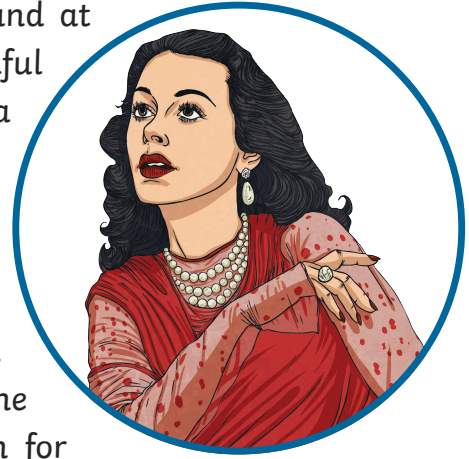
# Five Formidable Female Engineers

The world of engineering is all about 'making things work'. This could be to do with inventing or developing machines – in fact, anything to do with how things are made or operate. Engineers use skills in maths, science and technology to solve problems, design, build, research 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? Have you ever heard of Hedy Lamarr or Kalpana Chawla? No? Well it's time to put that right... read on to find out more.

## Hedy Lamarr 1914 - 2000

Hedy Lamarr was a famous Hollywood actress, and at one time she was thought to be the most beautiful woman in Hollywood. Not only did she have a successful acting career - she was also a pioneering engineer. She was Austrian, but moved to America where she worked on developing radio and communications technology to allow messages to be transmitted secretly during World War Two. This technology is the whole basis of mobile phone and Wi-Fi communications today. She is an icon for women in engineering.



## Maggie Aderin-Pocock 1968 -

Maggie Aderin-Pocock is a well-known face on the television as she is passionate about people learning about space and science. She started her career at the Ministry of Defence working on aircraft missile warning systems and landmine technologies after which her path led to the world of space projects. She has worked on the Gemini telescope in Chile and also on satellite technologies. She now works in space and science education, including being a television presenter on The Sky at Night and other educational programmes.



### Stephanie Kwolek 1923 - 2014



Stephanie Kwolek, was an American chemist with Polish parents. She earned a chemistry degree and went to work for a chemical company where she was working with different types of chemical plastics called 'polymers'. She found that by mixing certain polymers, a new and very strong material was made – this was named Kevlar. It is extremely strong and very light so it is used in a variety of products, such as vehicle tyres and bulletproof vests - a truly life-changing and life-saving substance.

### Kalpana Chawla 1962 - 2003

Kalpana Chawla was from India. She loved aeroplanes as a young girl and, at university, studied for a degree in aeronautical engineering. After that, she travelled to America where she became a Master of Science with a degree in aerospace engineering. That is impressive enough, but she went on to gain a second master's degree and a PhD in aerospace engineering with the aim of becoming an astronaut – which she did, being the first Indian woman to do so. In 1988, she joined NASA and eventually became an astronaut taking her first flight in 1996.



### Peggy Johnson 1963 -



Peggy Johnson was named the number one Most Powerful Female Engineer in 2017. She is the Executive Vice President of Business Development for the famous computer company Microsoft.

She started with a degree in electrical engineering before spending twenty-four years working for Qualcomm, a leading wireless telecommunications company.

Working in wireless technology - where would she be without Hedy Lamarr?

# Questions

1. Name two subjects that engineers have to be good at.

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2. From which country was Hedy Lamarr?

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3. Name two things that we use today that would not be possible without Hedy Lamarr's invention?

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4. In the text the author uses the word '**transmitted**'. Which word most closely matches the word '**transmitted**'? Tick one.

collected

sent

heard

posted

5. What does Maggie Aderin-Pocock do that shows she likes to help people learn?

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6. Why would Kevlar have been much better than old fashioned metal armour to wear?

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7. How many masters' degrees did Kalpana Chawla have?

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8. What was Kalpana Chawla's goal in life?

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9. Why does Peggy Johnson's job today rely on Hedy Lamarr?

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

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# Answers

1. Name two subjects that engineers have to be good at.  
**Engineers have to be good at maths and science (and technology).**
2. From which country was Hedy Lamarr?  
**Hedy Lamarr was from Austria.**
3. Name two things that we use today that would not be possible without Hedy Lamarr's invention?  
**It would not be possible to use mobile phones or Wi-Fi (or examples of things that use Wi-Fi) without Hedy Lamarr's invention.**
4. In the text the author uses the word '**transmitted**'. Which word most closely matches the word '**transmitted**'? Tick one.  
 collected  
 sent  
 heard  
 posted
5. What does Maggie Aderin-Pocock do that shows she likes to help people learn?  
**Maggie Aderin-Pocock presents educational programmes (or had developed space and science education), which shows she likes to help people learn.**
6. Why would Kevlar have been much better than old fashioned metal armour to wear?  
**Kevlar is better than metal armour as it is very light to wear.**
7. How many masters' degrees did Kalpana Chawla have?  
**Kalpana Chawla had two masters degrees.**
8. What was Kalpana Chawla's goal in life?  
**Kalpana Chawla's goal in life was to be an astronaut.**
9. Why does Peggy Johnson's job today rely on Hedy Lamarr?  
**Peggy Johnson's job relies on Hedy Lamarr as Hedy Lamarr's invention made mobile phones and Wi-Fi possible which Peggy Johnson needs for her industry to work.**
10. Which of these women do you most admire and why?  
**OPEN ENDED**