ENGINEER

WHAT ENGINEERS DO

Engineers are problem-solvers who design, build, and maintain systems, structures, and technologies that shape the world around us. They work in many fields, such as civil engineering (building bridges and roads), mechanical engineering (designing machines and vehicles), electrical engineering (power systems and electronics), and software engineering (computer programs and apps).

Engineers use maths, science, and creativity to solve practical problems, often working on projects that improve everyday life and protect the environment.

WHY THEIR WORK MATTERS

Engineers have a huge impact on society. They make transportation safer, create energy-efficient solutions, develop medical devices, and contribute to technological advancements. Without engineers, many modern conveniences like smartphones, clean water, and skyscrapers wouldn't exist.

They also help tackle global challenges, such as climate change, renewable energy, and sustainable construction.

SKILLS AND QUALIFICATIONS NEEDED

Successful engineers need a mix of technical knowledge and personal skills, including:

- **Problem-solving** – thinking logically to overcome challenges.
- **Creativity** – designing innovative solutions.
- **Attention to detail** – ensuring accuracy in designs and calculations.
- **Teamwork** – collaborating with other engineers, scientists, and clients.
- **Communication skills** – explaining complex ideas clearly.
- **Strong maths and science skills** – essential for calculations and testing.

HOW TO BECOME AND ENGINEER

The path to becoming an engineer can vary depending on the type of engineering, but most routes include:

1. **Education**
    - Obtain **GCSEs** in English, maths, and science.
    - Complete **A-levels** (or equivalent) in subjects like maths, physics, or computer science.
    - Study a **bachelor's degree** in your chosen engineering field.
2. **Professional Accreditation**
    - Many engineers aim for **Chartered Engineer (CEng)** status, which involves work experience and professional exams.
    - Some fields also have **apprenticeship routes**, combining work with study, which allow you to gain practical skills while earning.
3. **Work Experience**
    - Internships or placements during university are important for hands-on experience and networking.

Where Engineers Work

Engineers can work in a variety of environments:

- **Construction and infrastructure projects** (bridges, roads, buildings).
- **Technology and electronics companies** (software, robotics, AI).
- **Energy and environmental firms** (renewable energy, sustainability projects).
- **Manufacturing and automotive industries** (vehicles, machinery).
- **Research and development labs** (developing new materials or technology).

A DAY IN THE LIFE

A typical day for an engineer depends on their field. Some spend time designing and testing products, others supervising construction sites or analysing data. Meetings, computer modelling, and problem-solving are common, and safety is always a priority.

FUTURE OUTLOOK

Engineering is a career in high demand worldwide. With advancements in technology, renewable energy, and infrastructure development, engineers are essential for building sustainable, innovative solutions for the future. It's a career that offers both stability and the chance to make a real impact on society.

Find out more

https://www.youtube.com/watch?v=owHF9iLyxic

https://kids.britannica.com/kids/article/engineer/399444#:~:text=Engineers%20solve%20problems.,often%20overlap%20with%20each%20other.
https://www.bbc.co.uk/bitesize/articles/zpgdkty

Example Questions

- What are the fields that engineers can work in?
- Give one example of a skill needed to be an engineer.
- What pathway can engineers take?
- What is a typical day in the life of an engineer?
- True or False. Engineering is a high demand career.