



Why study?



Maths

How studying GCSE Maths could lead to a job at Sizewell C

What does Maths have to do with the nuclear industry?

Maths has plenty to do with nuclear power! For the physicists who design and operate nuclear power stations, maths is a language for understanding and controlling nuclear reactions. But maths is also an everyday tool for virtually all of the trades, contractors and engineers working on a big nuclear project.

Whether you're a scaffolder, welder, lift engineer or chef, the chances are you'll be relying on maths skills to understand key information like weights, dimensions or angles. A good grasp of maths is essential to building and maintaining a reactor to the right specifications.

Careers at Sizewell C

A GCSE in maths will help set you up for almost every role at a nuclear power station. Perhaps you like the sound of being a **document controller**, who manages documents and makes sure accurate information gets to the people who need it? You'll typically need GCSE Maths and English to get an entry-level role¹. Want to be a **payroll administrator**², part of the team that makes sure everyone gets paid? You'll likely need a Maths GCSE for an entry-level role or an apprenticeship.

A good grounding in maths is essential for roles such as **data specialists**, whose focus is on storing and processing the information underpinning a power station. It's also vital for quantity surveyors, and for **commercial leads**, who look after contracts and sales within a business.

Electrical technicians rely on their maths knowledge every day to interpret designs, and build and repair circuits³. **Engineering operatives** might use maths skills to operate tools, assemble products or make quality checks. GCSE Maths can help you get started in both careers, and you'll use your maths knowledge every day!



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Career pathways using Maths

- Apprenticeships are a common route into roles like a document controller, electrical technician or engineer. Find out more on the government's **Apprenticeships website** or have a look for **Sizewell C apprenticeships**.
- You may need a degree to qualify for other roles. A career in commercial, payroll or accountancy is likely to require further study, and may require membership or accreditation by a professional body, such as the Chartered Institute of Procurement and Supply (CIPS) or Association of Chartered Certified Accountants (ACCA).
- In some cases, an internship or industrial placement may help you gain your first experience of a role or industry.
- EDF is working with local schools and colleges, such as **East Coast College (Lowestoft)**, **Suffolk New College** and **West Suffolk College**, so have a look at their websites for pathway courses too.

Maths skills



If you're skilled at maths in the nuclear industry, you're likely to need excellent **problem-solving** abilities. Nuclear reactors are large, complex projects, throwing up unique challenges for you to solve. For the same reason you'll need to be great at **teamwork**, as you'll be working with other trades, sometimes in big groups.



There might be days where it doesn't all go so well. When that happens, **staying positive** will help you reset, refocus and work to the best of your talents. And with GCSE Maths in such wide demand, you're likely to find yourself developing and improving your **leadership** skills – nice job!



Useful links

icanbea... Career ideas and opportunities in Norfolk and Suffolk

Young SZC: Connecting young people to careers and apprenticeships in the region

BBC Bitesize: What GCSEs should I take?

BBC: Jobs that use maths

- <https://www.goconstruct.org/construction-careers/what-jobs-are-right-for-me/document-controller/> and <https://www.planitplus.net/JobProfiles/View/909/1>
- <https://nationalcareers.service.gov.uk/job-profiles/payroll-administrator#:~:text=Some%20employers%20will%20expect%20you,help%20improve%20your%20job%20prospects>
- <https://www.goconstruct.org/why-choose-construction/whats-happening-in-construction/what-gcse-do-you-need-to-be-an-electrician/> and <https://www.inputyouth.co.uk/jobguides/job-engineeringoperative.html>
- <https://www.sizewellc.com/proposals/>
- It's 3.2GWh x 24 hours x 365 days
- It's 255TWh divided by 28,032GWh (or 28.032TWh)
- It's 3.2 million x 80
- <https://www.rmg.co.uk/stories/topics/how-far-away-moon>
- 256 million miles divided by 238,855 miles x 2 (travelling to the moon and back)
- 256 million miles divided by 15mph, divided by 24, divided by 365. The answer's 1,947 if you account for leap years!
- <https://www.statista.com/statistics/322874/electricity-consumption-from-all-electricity-suppliers-in-the-united-kingdom;> (28,000GWh/275,000GWh) *100%

All information correct at the time of going to print in December 2023.
Some of the images come from our sister project, Hinkley Point C, in Somerset.

Maths



Maths in action

Fancy wrapping your maths skills around some real nuclear challenges? Why not take our quiz...

Hinkley Point B	306TWh
Hunterston B	296TWh
Heysham 2	287TWh
Torness	281TWh
Hartlepool	251TWh
Sizewell B	242TWh
Heysham 1	235TWh
Dungeness B	142TWh

1. Look at the chart above, which shows how much electricity the UK's eight nuclear power stations have produced over the last 35 years.

- What's the total in terawatt hours (TWh)?
- And what's the mean contribution of each power station?

2. Sizewell C has a planned capacity of 3.2 gigawatts (GW)⁴. In one hour, it will produce 3.2 gigawatt hours (GWh) of electricity. Assuming it's working at full capacity:

- How many gigawatt hours (GWh) of electricity will it produce each year? Round your answer to the nearest thousand.
- There are 1,000 gigawatt hours in every terawatt hour. To the nearest whole year, how long will Sizewell C take to meet the average contribution you worked out for Q1.b)?

3. Say you've got an ebike that travels 80 miles for every kilowatt hour (kWh) you store in it.

- How far could you go on 3.2GWh (which is 3.2 million kWh)?
- If it's 238,855 miles to the moon⁸, how many times could you travel there and back on 3.2GWh?
- Using your answer from Q3.a), how long would it take you to reach this distance travelling at 15mph (to the nearest year)?

Did you know?

The UK uses about **275TWh** of electricity each year¹¹. Working at full capacity, Sizewell C could provide one tenth of this!

Answers:
Q1. a) 2,040TWh b) 255TWh Q2. a) 28,000GWh b) Nine⁵
Q3. a) 256 million miles⁷ b) 535 times⁹ c) 1,947¹⁰

Sizewell C
The power of good for Britain