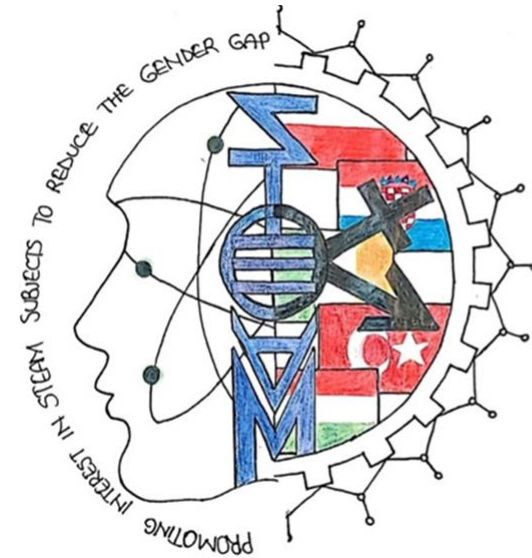
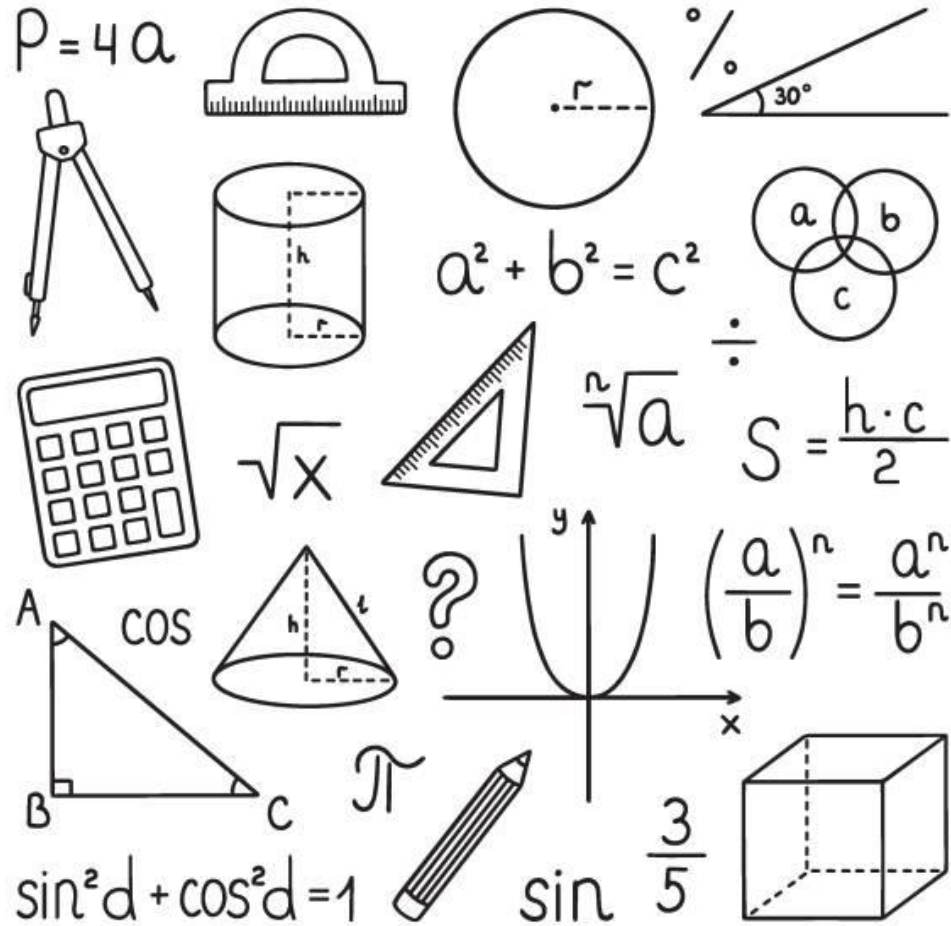


# Irish Women in Mathematics



Have you heard of Einstein? Pythagoras? Yeah, we thought you would have. But have you heard of Hypatia?

Unfortunately, there is a stereotype out there that maths is a boys subject, and this is reinforced by the fact that most of the famous mathematicians we often hear about are men.

However, there have been plenty of women who have made groundbreaking contributions to the world of mathematics.

**Hypatia (born c. 350-370; died 415 AD)**

Born in Alexandria (when Egypt was part of the Roman Empire), Hypatia is universally recognised as the first famous female mathematician. The daughter of Greek mathematician and philosopher, Theon of Alexandria, Hypatia was determined to preserve Ancient Greece's mathematical and astronomical heritage.



Her efforts saw her become one of the leading mathematicians and astronomers of her time and she was eventually named the head of the prestigious Platonist School in Alexandria, where she taught mathematics, philosophy and astronomy.

Unfortunately, most of Hypatia's work has been lost, although references to it remain in other texts.

## Ireland's Famous Mathematicians

Many of the early female high achievers had fathers or husbands who were mathematicians or scientists.

Why so few women?

Women weren't able to access higher education in Ireland before the 1920s.

Their career opportunities were limited also. Women were barred from working outside of the home in Ireland until the 1960's.

# **Mary Everest (1832-1916)**

Was a self taught Mathematician. She married George Boole, who had tutored her earlier and they lived in Cork. He was the first professor of mathematics at Queen's College.



Mary greatly contributed as an editor to Boole's *The Laws of Thought*, a work on algebraic logic.

In 1909 she published her own book, *Philosophy and Fun of Algebra*. She was widowed at 32 and worked as a librarian and tutored privately in Maths.

## Alice Boole (1860-1940)

One of her home-schooled daughters, Alice Boole (later Stott) never attended university or held an academic position but was a pioneer in the visualisation of 4-dimensional shapes.





**Kay McNulty (1921 - 2006)**

Indeed, many Irish women played roles in the development of technology, including the early computers of the 1940s. For instance, the ENIAC (Electronic Numerical Integrator and Computer) was set up by the US army to compute ballistic trajectories at a time when no coding languages existed.



Yet when it was unveiled in 1946 as "Big Brain" to the public, no mention was made of the six brilliant young women who had programmed it.

One of them was Kay McNulty (later Antonelli, 1921-2006), from Donegal, who had earned a mathematics degree in Philadelphia.

# Sheila Tinney (1918-2010)

The most well-known mathematical woman to come from Ireland was probably Sheila Power (later Tinney) whose father Michael was professor of mathematics at UCG from 1912 to 1955.



Born in Galway and one of 5 siblings she was educated by the Dominican nuns.

She was awarded an honour in the Leaving Certificate in Mathematics (1 of only 8 girls in the country).

She graduated with a First-class Honours BSC in Mathematics from UCD in 1938.

She had a long career after completing her PhD in 1941 (aged 23) in quantum mechanics under Nobel prize-winning Max Born at Edinburgh (over two years).

She then became one of the first three resident scholars at the brand-new Dublin Institute of Advanced Studies, which was set up at the instigation of then Taoiseach Eamon de Valera.

She developed the first mathematical courses on quantum mechanics at UCD and taught the subject to generations of students there until her early retirement in 1979.

She married Séan Tinney (a former engineering student of hers) in 1952.

They had three children including classical pianist Hugh Tinney.

Aoibhinn Ní Shúilleabháin  
(1983 - )  
is an Irish academic,  
teacher, broadcaster and  
high-profile science  
communicator.

She was born and grew up in  
Co. Mayo.



She entered UCD with an Entrance Scholarship for high marks in the Leaving Certificate. She received further scholarships from Bord na Gaeilge as she is a fluent Irish speaker.

During her studies, she spent the summer of 2004 working at CERN in Geneva. She graduated with a first-class honours degree in Theoretical Physics in 2005.



She became a primary teacher and taught for a few year before studying for a Doctorate in She left teaching to pursue a Ph.D in mathematics education, including improving approaches for science and maths teachers, in 2011.

She completed the doctorate with the School of Education of Trinity College Dublin in 2014, with her thesis, "Developing mathematics teachers' pedagogical content knowledge through lesson study : a multiple case study at a time of curriculum change", published in 2015; she graduated that year.

In August 2014 she became a faculty member of the School of Mathematics & Statistics at University College Dublin.

As of 2021, she is an assistant professor at UCD, and is also director of the B.Sc. Science, Mathematics & Education initial teacher education programme in UCD's College of Science.

She has been involved in many programmes to encourage an interest in STEM subjects and has presented a number of TV programmes in Ireland i.e. *The Science Squad* from 2012 - 2021 and *10 Things to Know About...*

