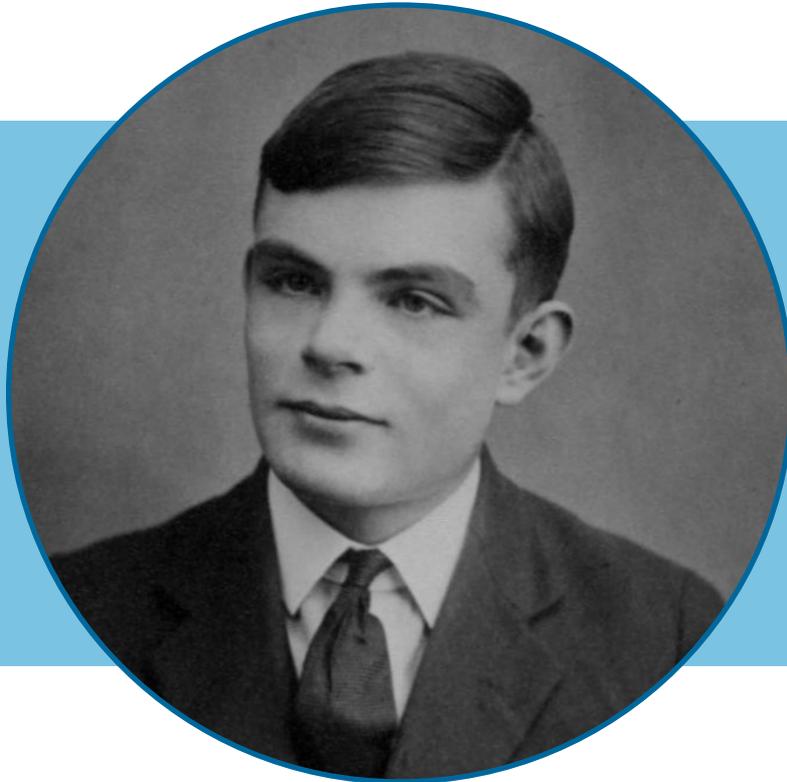


Famous Mathematicians

# Alan Turing



Born:  
1912

Died:  
1954

Nationality:  
British

## Areas of Expertise:

Codebreaking and Early Computer Theory

### Best known for:

- inventing a test called the Turing Test used to determine a machine's level of intelligence;
- inventing Turing machines – theoretical computers;
- his work at Bletchley Park during World War Two as part of the team that cracked the German Enigma code.

“Machines take me by surprise with great frequency.”

Famous Mathematicians

# Leonardo of Pisa (Fibonacci)



Born:  
1175

Died:  
1250

Nationality:  
Italian

**Areas of expertise:**  
Number Systems

**Best known for:**

- playing a key role in introducing the Hindu number system to Europe;
- giving his name to the sequence of numbers which is created by adding the previous two numbers together.

## Famous Mathematicians

# Euclid



Born:  
Mid-4<sup>th</sup>  
century BC

Died:  
Mid-3<sup>rd</sup>  
century BC

Nationality:  
Greek

**Areas of Expertise:**  
Geometry and Number Theory

**Best known for:**

- Euclidean Geometry: he is often referred to as the 'Father of geometry.'
- writing The Elements.

"The laws of nature are but the mathematical thoughts of God."

## Famous Mathematicians

# Pythagoras of Samos



Born:  
570 BC

Died:  
490 BC

Nationality:  
Greek

**Areas of Expertise:**  
Geometry and Trigonometry

**Best known for:**

- developing Pythagorean Theorem;
- inspiring the Pythagorean Cult: one of the first groups to actively study mathematics.

“There is geometry in the humming of the strings,  
there is music in the spacing of the spheres.”

## Famous Mathematicians

# René Descartes



Born:  
1596

Died:  
1650

Nationality:  
French

### Areas of Expertise:

Philosophy, Algebra, and Geometry

### Best known for:

- Cartesian Geometry – using two coordinates to identify points in two-dimensions;
- developing the use of algebraic notation;
- bringing algebra and geometry together.

“Divide each difficulty into as many parts as is feasible and necessary to resolve it.”

“In my opinion, all things in nature occur mathematically.”

Famous Mathematicians

# Carl Friedrich Gauss



Born:  
1777

Died:  
1855

Nationality:  
German

## Areas of Expertise:

Number Theory, Algebra, and Physics

### Best known for:

- finding a quick method to add the numbers 0-100 together while attending primary school;
- his work on prime numbers;
- proving the fundamental theorem of algebra.

“Mathematicians stand on each other’s shoulders.”

Famous Mathematicians

# Sir Isaac Newton



Born:  
1642

Died:  
1726

Nationality:  
British

## Areas of Expertise:

Calculus, Gravitational Theory, and Mechanics

## Best known for:

- devising the theory of gravity after being hit by an apple on the head;
- inventing calculus;
- using mathematics to explain gravity and motion.

“Genius is patience.”

Famous Mathematicians

# Ada Lovelace



Born:  
1815

Died:  
1852

Nationality:  
British

**Areas of Expertise:**  
Early Computing

**Best known for:**

- credited with writing the first computer program;
- foreseeing the possibilities of computers.

“That brain of mine is something more than merely mortal, as time will show.”

## Famous Mathematicians

# G.F Bernhard Riemann



Born:  
1826

Died:  
1866

Nationality:  
German

**Areas of Expertise:**  
Geometry, Prime Numbers

**Best known for:**

- his original approaches to the study of geometry laying the mathematical foundation for Albert Einstein's theory of relativity;
- his contributions to the theory of functions, complex analysis and number theory.

"If only I had the theorems! Then I should find the proofs easily enough."

Famous Mathematicians

# Leonhard Euler



Born:  
1707

Died:  
1783

Nationality:  
Swiss

**Areas of Expertise:** Calculus, Topology, Number Theory, Analysis, and Graph Theory

**Best known for:**

- introducing mathematical notation, e.g.  $\pi$ ;
- paving the way for modern mathematics.

“Mathematicians have tried in vain to this day to discover some order in the sequence of prime numbers, and we have reason to believe that it is a mystery into which the human mind will never penetrate.”

Famous Mathematicians

# Mary Somerville



Born:  
1780

Died:  
1872

Nationality:  
Scottish

**Areas of Expertise:**  
Science Writing and Academia

**Best known for:**

- being the first person to sign a massive petition to parliament to give women the right to vote;
- being elected to the Royal Astronomical Society in 1835 and awarded the Patron's Medal in 1869.

“Sometimes I find [mathematical problems] difficult, but my old obstinacy remains, for if I do not succeed today, I attack them again on the morrow.”

Famous Mathematicians

# Florence Nightingale



Born:  
1820

Died:  
1910

Nationality:  
British

**Areas of Expertise:**  
Statistics and Nursing

**Best known for:**

- changing nursing practises;
- making statistics easier for politicians to understand by developing groundbreaking graphs and charts.

“How very little can be done under the spirit of fear.”

## Famous Mathematicians

# Maria Gaetana Agnesi



**Born:**  
1718

**Died:**  
1799

**Nationality:**  
Italian

**Areas of Expertise:**  
Calculus and Theology

**Best known for:**

- being the first woman to write a mathematics handbook;
- being the first woman appointed as a professor of mathematics at a University.

“Analytics [...] is the art of resolving all kinds of Mathematical Questions, by finding or computing unknown numbers, or quantities, by the means of others that are known or given.”

## Famous Mathematicians

# Hypatia



**Born:**  
c. 350-370

**Died:**  
415

**Nationality:**  
Greek

### **Areas of Expertise:**

Arithmetic, Geometry, and Astronomy

### **Best known for:**

- being one of the first recognised female mathematicians;
- teaching astronomy and philosophy at a school in Egypt;
- being brutally murdered for what she was teaching.

“Reserve your right to think, for even to think wrongly is better than not to think at all.”

## Famous Mathematicians

# Caroline Herschel



Born:  
1750

Died:  
1848

Nationality:  
German

### Areas of Expertise: Astronomy

#### Best known for:

- being the first woman to discover a comet;
- becoming the first woman to receive a salary for services to science;
- receiving a gold medal from the Royal Astronomical Society.

“However long we live, life is short, so I work. And however important man becomes, he is nothing compared to the stars.”

Famous Mathematicians

# Srinivasa Ramanujan



Born:  
1887

Died:  
1920

Nationality:  
Indian

## Areas of Expertise:

Mathematical Analysis, Number Theory,  
Infinite Series and Continued Fractions

## Best known for:

- opening up new directions of research for the infinite series for  $\pi$ ;
- being inducted as a Fellow of the Royal Society, which is a Fellowship of some of the world's most renowned scientists.

“An equation means nothing to me unless it expresses a thought of God.”

Famous Mathematicians

# Benjamin Banneker



Born:  
1731

Died:  
1806

Nationality:  
American

**Areas of Expertise:**  
Mathematics and Astronomy

**Best known for:**

- his successful prediction of a solar eclipse;
- publishing his own almanac;
- being part of a team that surveyed and planned the capital of the United States;
- building the first ever fully wooden clock.

“The colour of the skin is in no way connected with strength of the mind or intellectual powers.”

Famous Mathematicians

# Sophie Germain



Born:  
1776

Died:  
1831

Nationality:  
French

## Areas of Expertise:

Number Theory and Elasticity

### Best known for:

- being the first woman to win a prize from the Paris Academy of Sciences for her work in elasticity;
- her work on Fermat's Last Theorem.

“Algebra is nothing more than geometry, in words; geometry is nothing more than algebra, in pictures.”

## Famous Mathematicians

# Marjorie Lee Browne



Born:  
1914

Died:  
1979

Nationality:  
American

**Areas of Expertise:** Mathematics Educator

### Best known for:

- being one of the first Black American women to receive a PhD in mathematics;
- serving as a member on various educational boards, such as The American Mathematical Society and the Women's Research Society;
- her paper on the significance of topological properties and the relation between certain classical groups.

Famous Mathematicians

# Muhammad ibn Musa al-Khwarizmi



Born:  
780

Died:  
850

Nationality:  
Persian

## Areas of Expertise:

Hindu-Arabic Numerals and Algebra

### Best known for:

- his contributions to mathematics, geography and astronomy established the basis for the revolution in algebra and trigonometry;
- his strong advocacy for the Hindu numerical system.

Famous Mathematicians

# Archimedes of Syracuse



Born:  
288 BC

Died:  
212 BC

Nationality:  
Greek

## Areas of Expertise:

Geometry, Physics, Engineering and Astronomy

## Best known for:

- the Archimedes Principle – the amount of upward buoyant force exerted on something in water is equal to its weight;
- creating formulae for calculating the area of circles and the surface area and volume of spheres;
- creating a method to calculate the volume of an irregular object;
- inventing a method for calculating pi ( $\pi$ ).

## Famous Mathematicians

# Dorothy Vaughan



Born:  
1910

Died:  
2008

Nationality:  
American

### Areas of Expertise:

Mathematics, Computer Programming, Aeronautics

### Best known for:

- making important contributions to the early years of the United States space program;
- being the first Black manager at the National Advisory Committee for Aeronautics (NACA), which later became part of NASA. She was also one of the only female managers;
- being an expert in the computer programming language FORTRAN, which was used for scientific and algebraic equations;
- teaching and influencing other women in the West Computing group in Langley, including renowned mathematician Katherine Johnson.

Famous Mathematicians

# Katherine Johnson



Born:  
1918

Died:  
2020

Nationality:  
American

## Areas of Expertise:

Mathematics, Aeronautics, Orbital Mechanics

### Best known for:

- calculating the trajectory to allow the Apollo 11 mission to reach the Moon and return safely to Earth;
- working on the trajectories of numerous other spacecraft, including the flight for Alan Shepard, the first American in space;
- checking calculations completed by a computer, by hand, at the request of astronauts to make sure they were correct;
- supporting the Apollo 13 mission with backup procedures to help astronauts return safely to Earth after a malfunction;
- helping to develop the space shuttle program.