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Famous math women

Chances are you're probably well aware of Newton, Einstein and Turing, but when it comes to famous female mathematicians, their achievements are less well known. Unfortunately, there is a stereotype that still prevails today that maths is a male subject and that girls are no good at it. Fortunately though, that couldn't be any further from the truth, and so in celebration of International Women's Day we've put together a fabulous list of some of the world's greatest famous female mathematicians that you can use all year round. We hope you can use these inspirational individuals and their incredible work to show children that maths is all about the journey of discovery, not someone's gender. In her 2013 Guardian post 'Why are there so few female Maths professors in UK universities?', Lucy Ward states 'here's any easy sum: if 94% of Maths professors in British universities are men, what percentage are women?'. The answer is of course telling, and today there has been little improvement. The Women's Engineering Society, offers some useful statistics on women in STEM in the UK, and it's not great. For example: 'Women make up 16.5% of all engineers'. Though this is a 6% rise since 2010, there's still a long way to go. The idea that our young learners may feel they should not approach or are not suited to a particular field of work is heartbreaking. As teachers, we want our pupils to feel they can do anything. What we definitely don't want is for them to feel they cannot do something because of their gender. Our female learners should never feel like they can't – or shouldn't – do Maths because it's a 'boy's subject'. These perceptions always start at a young age which means changing them must start in the classroom. Meet Skye, the voice-based AI tutor making maths success possible for every student. Built by maths experts, Skye uses the same pedagogy, curriculum and lesson structure as our traditional tutoring. But, with more flexibility and a lower cost, schools can scale AI maths tutoring to support every student who needs it. Watch Skye in action What Maryam did: Iranian-born Maryam Mirzakhani was one of the greatest mathematicians of her generation, making exceptional contributions to the study of the dynamics and geometry of mathematical objects called Riemann surfaces. She was a professor at Stanford University and held a Ph.D from Harvard University. In 2014, she was the first woman, and first Iranian, to be awarded a Fields Medal (also known as the International Medal for Outstanding Discoveries in Mathematics) for "her outstanding contributions to the dynamics and geometry of Riemann surfaces and their moduli spaces". Maryam's impact: Her work had a huge impact in shaping her field and has opened up new frontiers of research that are just starting to be explored. She shows us that, even in a male-dominated field, women can be role models and lead the way forward with their discoveries. #1 Maryam Mirzakhani What Katherine did: Falling in love with maths from a young age, Katherine studied the subject alongside French at university, graduating summa cum laude at the age of just 18! She joined NASA in 1953 and her contributions in orbital mechanics were crucial to the success of the USA's aeronautics and space programmes. In 2015, she was presented with the Presidential Medal of Freedom by Barack Obama for her important work as a mathematician, physicist and space scientist as a woman of colour. Katherine's impact: Despite being one of the first three black women to attend West Virginia University, she dared to challenge the stereotypes which existed around her and has since become a pioneering example and role model for females everywhere of African American women in STEM. She was responsible for calculating the trajectory for Project Mercury and the Apollo 11 flight to the moon, which means she helped the first spaceship and the first Americans reach the moon! Believing that "everything is physics and math(s)", she encouraged girls to pursue careers in STEM and often gave talks on the subject. "Girls are capable of doing everything men are capable of doing." Katherine Johnson was rejected by NASA the first time she applied, but she didn't give up! KS2 Maths Games and Activities Pack A FREE downloadable games and activity pack, including 20 home learning maths activities for KS2 children to complete on their own or with a partner. Download Free Now! What she did: Mary Cartwright was a British mathematician and a woman of many firsts! She was not only the first woman to obtain a first in her university degree, but also one of the first mathematicians to study what is now known as chaos theory. She was the first woman to receive the Sylvester Medal (awarded for the encouragement of mathematical research), the first woman to be President of the Mathematical Association and the first woman to be President of the London Mathematical Society. Mary's impact: Thanks to her bravery in daring to defy the status quo, her work has gone on to strongly influence the modern theory of dynamical systems, and she even has a mathematical theorem named after her! #3 Mary Cartwright What Sofia did: Russian mathematician Sofia Kovalevskaya made monumental contributions to analysis, partial differential equations and mechanics. She was a pioneer and icon for females in mathematics and STEM subjects everywhere. The first woman to obtain a doctorate in mathematics, she went on to gain global recognition in the mathematical community due to her paper on partial differential equations and was awarded the Prix Bordin from the French Academy of Sciences, a prize given to the best solution of a specific mathematical problem. Sofia's impact: Despite scrutiny and doubts from her male counterparts and society as a whole, Sofia refused to give up academia and has paved the way for other famous females mathematicians to follow in her footsteps! #4 Sofia Kovalevskaya What Sophie did: Marie-Sophie Germain was a French mathematician and physicist who, despite opposition from society (and her parents) due to her sex, persevered and went on to greatly contribute to maths. Due to the unfair gender restraints at the time, she was not able to pursue a career in the subject, but that did not stop her! She worked on it independently throughout her life and through her hard work, she not only advanced the field of number theory, but was also one of the pioneers of elasticity theory, becoming the first woman to win the grand prize from the Paris Academy of Sciences for her essay on the subject. Sophie's impact: She proved to the people around her that their assumptions based on her sex were wrong and that females are incredible mathematicians. Although she was not allowed to attend university, thanks to her unfaltering determination and bravery she became the very first woman to make important original contributions to mathematical research and in doing so, carved out the way for women today. #5 Sophie Germain What Marjorie did: Gifted African-American mathematician and educator Marjorie Lee Browne was the first black woman to gain a doctorate in maths. She joined the faculty at North Carolina Central University, shortly after obtaining her Ph.D, where she taught for over thirty years. She was named chair of the Mathematics Department there in 1951, which allowed her to guide the way for some of the earliest computer use in her field. Marjorie's impact: She noted that the lack of involvement of black women in STEM subjects was a huge societal issue that needed to be addressed and believed that education was a viable solution. She took advantage of her position as department chair at NCCU to gain a grant to educate secondary school teachers in advanced maths and spent much of her time with local secondary school teachers teaching them about linear algebra, encouraging them to study and obtain advanced degrees and improving the level of maths education as a whole in North Carolina. Her dedication to inspiring confidence in female mathematicians and providing quality education to others for the greater good, has helped her to become a role model for women in STEM everywhere. "If I had to live my life again, I wouldn't do anything else. I love mathematics." #6 Marjorie Lee Browne What Rachel did: Television presenter Rachel Riley studied Mathematics at Oxford University. At age 22 she joined Countdown where she applies her maths skills on a regular basis, handling the letters and numbers rounds to find solutions to complicated problems. She has gone on to present other shows including 8 Out of 10 Cats Does Countdown and The Gadget Show, and even starred as a contestant on Strictly Come Dancing! Rachel's impact: Riley has visited many schools over the years in an endeavour to inspire children on the "joys of applied maths, quantum mechanics and time travel" and increase the numbers of females participating in STEM subjects. She has shown us that pursuing your passion and studying maths at university can lead to us down different avenues, including less conventional ones such as a career in television! "There's no reason for men to be better at maths than women – it's just about our perception." #7 Rachel Riley What Malala did: Malala Yousafzai is a Pakistani activist for female educational rights, and the youngest person to win the Nobel Peace Prize, at just age 17! She started participating in activism when she was only 11 years of age and began writing blogs for the BBC detailing what life was like under Taliban rule and her beliefs on the important role education plays for girls across the world – and especially in Pakistan. In her home province of Swat Valley, girls were banned from attending school by the Taliban. After appearing in the New York Times documentary, she gained global recognition as a speaker on the education of girls, and has brought about huge change in this area ever since. She took A-Level Mathematics and is currently studying Philosophy, Politics and Economics (PPE) at Oxford University. She has won many awards and has been named one of Time Magazine's "100 Most Influential People in the World"! Malala's impact: Due to the nature of Malala's work, an attempt was made on her life when she was on her way to school one morning. It was unsuccessful, and she refused to let this stop her fighting for her cause, continuing to give speeches and interviews for women's educational rights. Her story drove the United Nations to launch a campaign for the education of all of children worldwide, which ultimately led to Pakistan's first Right to Education Bill. Malala's brave and determined actions illustrate that females do have the power to change the world regardless of contemporary societal beliefs and that education can be a force for that change! She also shows us that education is a privilege, so, if we want to go on and study maths, we should! "Education is neither eastern nor western. Education is education and it's the right of every human being." #8 Malala Yousafzai What Mayim did: American actress Mayim Bialik studied neuroscience at UCLA, where she went on to obtain a Ph.D in 2007. She is best known for her role as Dr. Amy Fowler in the comedy The Big Bang Theory, but has starred in countless other television shows and films. Mayim's impact: Despite success in her early acting career, Mayim still decided to study neuroscience at university because she had a passion for the subject. She believes strongly in the involvement of women in STEM subjects and has spoken at events on the topic encouraging girls to pursue these disciplines. She also plays the bass and trumpet! #9 Mayim Bialik What Mary did: Mary taught herself maths at time when education was not thought of as important for girls. In 1827, mary was asked to translate a book by the French mathematician, Pierre Laplace. Her work was an immediate success. Mary's impact: Mary continued to do lots of important research for the rest of her life and was given many honours for her work. Her work was so important and famous that Somerville College at Oxford University is actually named after her! #10 Mary Somerville What Augusta did: When Ada was a teenager, she was mentored by none other than Mary Somerville! Augusta was incredibly gifted at Maths and as an adult worked with Charles Babbage to translate an Italian memoir. The memoir was about an 'Analytical Engine' (a machine that could do simple maths – one of the first computers). Augusta's impact: Augusta, did way more than just translate the memoir. She created her own version of notes for the machine and even included a way to calculate more difficult equations. This is now understood to be one of the world's first computer programmes. #11 Augusta Ada Byron What Emmy did: Emmy had her education delayed because of rules against women studying Maths at university. She was very, very clever though and did eventually get a PhD in algebra. She went on to become a Maths professor and developed many mathematical rules. Emmy's impact: Her mathematical rules led to other mathematicians – like Einstein – being able to advance maths even further. We would as smart a society today if it weren't for the work of Emmy Noether! #12 Emmy Noether What Florence did: She is famous for being a nurse who was full of compassion and the founder of modern nursing. What is less well known is that Florence was a statistician who used her work to hugely cut death rates during war. Florence's impact: When Florence went to be a nurse in the Crimean war she used statistics to show that lots of the soldiers were dying due to the conditions of the hospitals, rather than from fighting. Florence's use of statistics helped to show government's why people were dying. As a result she helped reduce mortality rates in both the army and at home. In particular she developed lots of innovative graphs and charts which made statistics easy to understand for politicians. Before this time it was not common to represent statistics in this way. #13 Florence Nightingale What Dorothy did: Dorothy Johnson Vaughan was an African American mathematician and computer programmer who worked for the National Advisory Committee for Aeronautics (NACA), and NASA. She contributed greatly to the early stages of the American space programme. Dorothy's impact: She was considered a "human computer" as she performed complicated computations and analysed data for aerospace engineers. She was the first African American manager at NACA (which later became NASA). #14 Dorothy Johnson Vaughn Here's our complete list of topical maths investigations for year 5 and year 6. We've got more fun KS2 maths investigations, all free for UK primary schools based around the following key events in a primary school during Autumn, Spring and Summer Term. To get the complete set download the latest versions of our topical maths problems: Or follow any links below And if that's not enough we've even got maths activities for Year 5 and Year 6 for events you're likely to celebrate in primary school but their dates can change from year to year. We update these blog posts every year so sign up and look out for our emails. My Typical Day Battling ice dams produces very long days in below-freezing temperatures, all across the northern states of the country, so we're usual … Read More Maryjane Duquette, RN, BSN, LNC My name is Maryjane Duquette, RN, BSN, LNC. I am the Founder & CEO of MJD Legal Nurse Consulting. I became a legal nurse consultant after some fri … Read More Child Protective Specialist Will Kesselman I currently work as a Child Protective Specialist (CPS) for the City of New York. What this means, is that I investigate cases/investigations for NYC. … Read More My Responsibilities Creating an SEO strategy using best practices, and a roadmap based on resources available and the competitive advantages of the br … Read More I am a contracted Software Engineer who works on Army projects. I was always interested in computers and coding, but never thought it would be a job t … Read More coordinate activities of technical departments, such as taping, editing, engineering, and maintenance, to produce radio or television programs. directly supervise and coordinate activities of personal service workers, such as flight attendants, hairdressers, or caddies. perform any or all of the following functions in the manufacture of electronic semiconductors: load semiconductor material into furnace; saw formed ingots into segments; load individual segment into crystal growing chamber and monitor controls; locate crystal axis in ingot using x-ray equipment and saw ingots into wafers; and clean, polish, and load wafers into series of special purpose furnaces, chemical baths, and equipment used to form circuitry and change conductive properties. direct nursing staff in the provision of patient care in a clinical practice setting, such as a hospital, hospice, clinic, or home. Ensure adherence to established clinical policies, protocols, regulations, and standards. conduct recreation activities with groups in public, private, or volunteer agencies or recreation facilities. Organize and promote activities, such as arts and crafts, sports, games, music, dramatics, social recreation, camping, and hobbies, taking into account the needs and interests of individual members. plan, direct, or coordinate gambling operations in a casino. May formulate house rules. conduct economic analysis related to environmental protection and use of the natural environment, such as water, air, land, and renewable energy resources. Evaluate and quantify benefits, costs, incentives, and impacts of alternative options using economic principles and statistical techniques. Data Engineers design and maintain data infrastructures for organizations. They manage the databases, data centers, and data pipelines used to store and share data. Meteorologists observe weather formations and trends to predict the forecast in the coming days or weeks. They often use sophisticated software to help analyze weather patterns and make more accurate predictions. research and study the inheritance of traits at the molecular, organism or population level. May evaluate or treat patients with genetic disorders. conduct research, prepare reports, or formulate plans to address economic problems related to the production and distribution of goods and services or monetary and fiscal policy. May collect and process economic and statistical data using sampling techniques and econometric methods. create new dance routines. Rehearse performance of routines. May direct and stage presentations. Entomologists study how insects interact with their environment. They use their research to help manage pests in agriculture and residential, commercial, or industrial settings. prepare, season, and cook dishes such as soups, meats, vegetables, or desserts in restaurants. May order supplies, keep records and accounts, price items on menu, or plan menu. grind, sand, or polish, using hand tools or hand-held power tools, a variety of metal, wood, stone, clay, plastic, or glass objects. Includes chippers, buffers, and finishers. coordinate and document internal regulatory processes, such as internal audits, inspections, license renewals, or registrations. May compile and prepare materials for submission to regulatory agencies. develop instructional materials and products and assist in the technology-based redesign of courses. Assist faculty in learning about, becoming proficient in, and applying instructional technology. Prop Masters manage the props department on a film or television production. They find, create, or hire props based on the needs of the project. shape molten glass according to patterns. patrol assigned area to prevent fish and game law violations. Investigate reports of damage to crops or property by wildlife. Compile biological data. apply theory and principles of mechanical engineering to modify, develop, test, or adjust machinery and equipment under direction of engineering staff or physical scientists. research and study cellular molecules and organelles to understand cell function and organization. A Travel Nurse is a Registered Nurse (RN) who works on a contract basis to fulfill the staffing needs of hospitals and other healthcare facilities. They typically work short-term assignments for healthcare agencies. plan, direct, or coordinate the actual distribution or movement of a product or service to the customer. Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers. research the distribution, circulation, and physical properties of underground and surface waters; and study the form and intensity of precipitation and its rate of infiltration into the soil, movement through the earth, and return to the ocean and atmosphere. plan, direct, or coordinate activities of an organization to ensure compliance with ethical or regulatory standards. operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement. May repair and maintain equipment in addition to other duties. prepare and cook food in a fast food restaurant with a limited menu. Duties of these cooks are limited to preparation of a few basic items and normally involve operating large-volume single-purpose cooking equipment. monitor and control activities associated with hydropower generation. Operate plant equipment, such as turbines, pumps, valves, gates, fans, electric control boards, and battery banks. Monitor equipment operation and performance and make necessary adjustments to ensure optimal performance. Perform equipment maintenance and repair as necessary. Post-secondary certificate speak or read from scripted materials, such as news reports or commercial messages, on radio, television, or other communications media. May play and queue music, announce artist or title of performance, identify station, or interview guests. receive and transmit communications using radiotelephone equipment in accordance with government regulations. May repair equipment. apply hard tile, stone, and comparable materials to walls, floors, ceilings, countertops, and roof decks. recruit and hire seasonal or temporary agricultural laborers. May transport, house, and provide meals for workers. investigate, analyze, and determine the extent of insurance company's liability concerning personal, casualty, or property loss or damages, and attempt to effect settlement with claimants. Correspond with or interview medical specialists, agents, witnesses, or claimants to compile information. Calculate benefit payments and approve payment of claims within a certain monetary limit. develop tools, implement designs, or integrate machinery, equipment, or computer technologies to ensure effective manufacturing processes. command ships to steer them into and out of harbors, estuaries, straits, or sounds, or on rivers, lakes, or bays. Must be licensed by U.S. Coast Guard with limitations indicating class and tonnage of vessels for which license is valid and route and waters that may be piloted. assist biological and medical scientists. Set up, operate, and maintain laboratory instruments and equipment, monitor experiments, collect data and samples, make observations, and calculate and record results. May analyze organic substances, such as blood, food, and drugs. teach academic, social, and life skills to preschool-aged students with learning, emotional, or physical disabilities. Includes teachers who specialize and work with students who are blind or have visual impairments; students who are deaf or have hearing impairments; and students with intellectual disabilities. drive logging tractor or wheeled vehicle equipped with one or more accessories, such as bulldozer blade, frontal shear, grapple, logging arch, cable winches, hoisting rack, or crane boom, to fell tree; to skid, load, unload, or stack logs; or to pull stumps or clear brush. Includes operating stand-alone logging machines, such as log chippers. counsel and advise individuals with alcohol, tobacco, drug, or other problems, such as gambling and eating disorders. May counsel individuals, families, or groups or engage in prevention programs. operate mechanical boom and cable or tower and cable equipment to lift and move materials, machines, or products in many directions. Post-secondary certificate protect and police railroad and transit property, employees, or passengers. Dog Trainers use a variety of techniques to help owners teach their dogs new or improved behaviors. They may also work individually with dogs to train them for specialized activities such as herding sheep or assisting blind people. provide individualized physical education instruction or services to children, youth, or adults with exceptional physical needs due to gross motor developmental delays or other impairments. develop quantitative techniques to inform securities investing, equities investing, pricing, or valuation of financial instruments. Develop mathematical or statistical models for risk management, asset optimization, pricing, or relative value analysis. inspect and investigate sources of pollution to protect the public and environment and ensure conformance with Federal, State, and local regulations and ordinances. Systems Administrators install, configure, and maintain computer systems, local area networks (LANs), and wide area networks (WANs). They address server problems, reset employee passwords, and coordinate with other IT professionals. transport students or special clients, such as the elderly or persons with disabilities. Ensure adherence to safety rules. May assist passengers in boarding or exiting. Patriarchal by definition means the male head of the family, therefore emerging from a patriarchal and misogynistic society there are some brilliant female names that you haven't even heard of. It used to be much easier for a man to get the education and exposure during the olden days as women were not appreciated to pursue with their careers, hence it is important for us to respect and cherish these wondrous women who fought against society and the chauvinistic men that discouraged them at every step. Yet, they managed to become the most famous mathematicians of all time. The female mathematicians are discussed in order according to timeline: 1. Hypatia (AD 315-415) Hypaitia of Alexandria was the daughter of a mathematician and took her father as an inspiration to become a mathematician herself. Not only was she a mathematician but a philosopher as well. She taught as the head at a school, her subject was the knowledge of Plato and Aristotle. She is the first woman to make valuable contributions in the field of mathematics. Hypaitia was the first woman to take the bold step to pursue with her dreams and became an inspiration to many young women who became the world's most famous geniuses ever. 2. Emilie du Chatelet (1706-1749) The French mathematician, author and physicist during the age of reason, or simply, Age of Enlightenment became well known for her work for her translation on Isaac Newton. She had vast knowledge over Newtonian physics and mechanics and gave an elaborate commentary on the Newton mechanics. 3. Maria Gaetana Agnesi (1718-1799) The Italian mathematician, philosopher, humanitarian, theologian was an honorable lady with command over a wide variety of subjects. She was the first woman who not only became the first math professor but wrote the mathematical handbook as well. Her book comes under discussion in both integral and differential mathematics. 4. Sophie Germain (1766-1831) A French mathematician, philosopher and author, Sophie Germain, was a dedicated and motivated woman. The young rebellious Sophie fought against her parents to get education, secretly reading her father's books to gain knowledge. She was one of the pioneers of the theory of elasticity. 5. Ada Lovelace (1815-1852) The world's first computer programmer can to acknowledgement when she was translating the memoir of Charles Babbage. She did an analytical review and revised the memoir by adding her own method of calculating a sequence of Bernoulli numbers, the first computer program ever. 6. Sofia Kovalevskaya (1850-1891) She was the first Russian mathematician, responsible for many contributions and evaluations. She made important contributions to analysis, partial differential equations and mechanics. She was the first woman to get appointed as a full professorship, as well as the first woman as editor of a scientific journal. 7. Mary Everest Boole (1832-1916) She was the inventor of cooperative learning and creating activities that would make learning math more children friendly. Boole was self taught and progressed to become a mathematician and author of the book 'Philosophy and Fun of Algebra'. 8. Emmy Noether (1882-1935) A German and Jewish originated Emmy became the leading mathematician of her time. She developed theories of rings, fields and algebra. She was notified by history's famous scientists and mathematicians as the most important in the history of mathematics! 9. Euphemia Haynes (1890-1980) An African-American based woman who progressed to gain her PhD in mathematics. She contributed to the educational system in Washington DC, which was her place of residence. She taught at public schools and eventually became the first woman to chair the DC school board. 10. Mary Cartwright (1900-1998) Mary Cartwright was a British mathematician who was the first woman to get a first class degree in mathematics. She went on further to gain her PhD and spent the rest of her life working on her thesis on zeros of entire functions. She contributed to simplifying elementary proof of the irrationality of pi. Henceforth, she became the first female mathematician to be elected Fellow of royal society. The list of accomplishments are immense and of great importance in the historical mathematical events. 11. Marjorie Lee Browne (1914-1979) Marjorie was an African-American mathematician famous for her work, education and contributions to the world of numbers and equations. She was the first black woman who achieved her doctorate in math. She made many contributions to the African-American society the most notable being the introduction of computers in academics. She was a generous woman who spent her life focusing on social work. She encouraged and promoted math education for minorities and women. 12. Julia Robinson (1919-1985) Robinson was the first woman elected by the National Academy of Sciences and president of American Academy of Arts and Sciences. Despite that fact that she remained un-well due to her health problems she never compromised on her mathematical education. She is most famously known for her work on Hilbert's tenth problems and decision problems. 13. Katherine Johnson (1918-present) Katherine Johnson was an American mathematician, physicist and space scientist most prominently known for the introduction of digital electronic computers at NASA. She spread her wisdom with her calculations in the trajectory for Project Mercury and Apollo 11 flight to the moon. She was an extraordinary woman with incredible talents. 14. Shafi Goldwasser (1958-Date) The modern day mathematician, Goldwasser, is an American professor teaching mathematics and computer science at the well renowned universities, MIT and Weizmann Institute of science. She gained the Golden globe award for her work on theoretical computer science. She contributed with her profound research on zero-knowledge proof, complexity theory, computation number theory and cryptography. 15. Maryam Mirazakhani (1977-Date) Mirazakhani is an Iranian mathematician and the first of the Iranian women to have multiple accomplishments starting from a very young age. She gathered a gold medal in the international mathematical Olympaid. She was also the first of to be honored with a Fields Medal, one of the most valuable and prestigious award in mathematics, she achieved the award for her work in understanding the symmetry of curved surfaces. Mirazakhani is currently working as a professor of mathematics at Stanford University. She's an outstanding, inspirational and admirable woman.