

Isaac Newton (Daniel Hautala)

Isaac Newton was a famous English physicist, mathematician, alchemist, philosopher and astronomer. Newton laid the foundations of classical mechanics with his book *Philosophiæ Naturalis Principia Mathematica* in 1687. In this piece of work, he introduced his laws of universal gravity and motion and the book is considered to be the highlight of the scientific revolution started by Kepler in the 17th century. Newton is also considered as one of the inventors of differential and integral mathematics and as the developer of modern optics.

Newton was born prematurely on the 25th of December 1642 in the hamlet of Woolsthorpe-by-Colsterworth, in the county of Lincolnshire. Newton's mother remarried and moved in with her new husband when Newton was three, leaving him in the care of his grandmother. Newton didn't have a happy childhood and was treated like an orphan. He disliked his stepfather and mother because they had abandoned him.

Newton studied at The King's School from the age of twelve until he was seventeen. He has told himself that he wasn't a hardworking person and that he didn't manage well at his studies. He was described as very shy and calm, but he was also involved in quarrels. One day when he was on his way to school, one of the school's students kicked him in the stomach. After school Newton challenged the bully, who was at the top of the class, to fight him. Isaac won the fight and thought to himself that if he can beat a bully in a fight, why couldn't he also be a better student. Soon after, he became a top-ranked student. In school, he preferred to study alone and enjoyed building mechanical things like sundials and models of windmills.

In 1661 Newton was admitted to Trinity College in Cambridge. There he got influenced by professors Henry More and Isaac Barrow who implanted the interest towards natural sciences and alchemy in him. Newton's interest towards mathematics sparked in 1663 when he bought a book about astrology from a fair in Cambridge. Because he didn't understand the math used in the book at all, he had to learn more of it. In 1665 Newton discovered the generalised binomial theorem and started to develop a mathematical theory that later became calculus. During the same year he graduated, the school closed temporarily because of the Great Plague. When the college reopened its doors in 1667, Newton was elected to the school's student body and two years later he became a professor. He mostly lectured about his research on maths, optics and mechanics. His lectures didn't attract a whole lot of people because his way of explaining things was very complex.

In 1672, Newton became a member of Royal Society, which is a British science academy, and during the same year he published his first scientific article. During his years in The Royal Society he had a few

meltdowns but also released his work Principia, after working on it for nine years. He became the President of Royal Society in 1703. Because of his status, he worked with a royal astronomer called John Flamsteed and was knighted in 1705 by Queen Anne, becoming the first knighted scientist.

Newton's last years were hard because he was in an argument with Leibniz over who had first invented calculus. He moved to South London in May of 1722 because he had pneumonitis. He died five years later and was buried in Westminster Abbey.

Newton was never married, but he got engaged once. Newton was an isolated and serious person. Some stories tell that he only laughed once in his lifetime. He was also very religious and thought that his research would eventually unveil God's ultimate thoughts.

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The periodic table of elements (Elsi Karjalainen)

The periodic table of elements was invented by Russian chemistry professor Dmitri Mendelejev in 1869. It has become one of the most important tools for scientists all over the world, underlying nearly all chemistry research. However, Mendelejev was not the first scientist to study the chemical elements, he just managed to come up with a logical and simple way of grouping them.

In the periodic table, the chemical elements are arranged by atomic number, electron configuration and repetitive chemical properties. Metals are on the left side of the table and non-metals on the right, between them are metalloids. The atomic number of the element is equal to the number of protons in an atom. The first element of the periodic table, hydrogen, has only one proton and the last one, oganesson, has 118. The periodic table allows chemists to predict chemical reactions since elements that belong to the same column have similar properties. Some elements are inert while others react easily.

For two hundred years, people have been trying to come up with the best way to group the elements. In 1829, German chemist Johann Wolfgang Döbereiner divided the elements into triads based on their atomic weight. For example, the atomic weight of strontium is roughly the average of the atomic weights of potassium and barium. Various other scientists attempted to arrange the elements in many ways, but Dmitri Mendelejev is known to this day as the father of the periodic table. He divided the chemical elements into rows, also known as periods, and columns, called groups. In his original chart the current horizontal rows were vertical and vice versa.

What distinguished Mendelejev from other scientists was that with the help of the periodic table, he was able to predict the properties of three chemical elements which had not yet been discovered. He left empty places on his version of the periodic table which were soon filled by gallium (1875), scandium (1879) and germanium (1886).

New variations of the periodic table have been made since Mendelejev's famous idea. It has been expanded and refined. Mendelejev's first periodic table included 60 chemical elements, whereas the current periodic table contains as much as 94 natural elements and 24 artificial ones. These days, the most commonly used version of the periodic table is the IUPAC (International Union of Pure and Applied Chemistry) Periodic Table of Elements, although many other options exist, too. According to Eric Scerri, a philosopher of science from the University of California, Los Angeles, there are over a thousand different proposals concerning how the chemical elements should be grouped.

One of the biggest disagreements regarding the periodic table is the placement of helium. Some scientists think that helium and the other inert gases belong to the left side of the table, and helium should be above neon, others would place helium above beryllium, and others would keep it where it is. The order of the elements in the periodic table depends on whether they are arranged based on physical or chemical properties. Dmitri Mendelejev concentrated more on the chemical properties, such as when he placed tellurium before iodine even though according to atomic weight iodine should come first. This was because at the time the physical properties of the elements were unknown, and scientists were even arguing about whether atoms existed.

2019 is the International Year of the Periodic Table and IUPAC is contemplating updating it. 150 years after Dmitri Mendelejev published the first version of the periodic table, it is still an indispensable means of research and understanding the world around us. Chemistry as we know it would not exist without the periodic table.

Group→1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
 ↓Period

1	1 H																	2 He
2	3 Li	4 Be										5 B	6 C	7 N	8 O	9 F	10 Ne	
3	11 Na	12 Mg										13 Al	14 Si	15 P	16 S	17 Cl	18 Ar	
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
6	55 Cs	56 Ba		72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra		104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Nh	114 Fl	115 Mc	116 Lv	117 Ts	118 Og

Lanthanides	57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
Actinides	89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

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Nikola Tesla (Lyydia Pyykkönen)

Nikola Tesla was a Serbian-American inventor and engineer who contributed to the development of the alternating current (AC) electrical system. He discovered the rotating magnetic field which is the basis of most AC machinery.

Tesla was born on July 10, 1856, in Smiljan, Croatia which was a part of the Austrian Empire. He was from a family of Serbian origin. Nikola Tesla's mother was unschooled and his father was an Orthodox priest who pushed his son to become a priest too but Nikola Tesla was only interested in the sciences. Their family consisted of four other children besides him.

He attended the Technical University at Graz, Austria and also the University of Prague during the 1870s. After finishing his studies, he moved to Budapest and worked at the Central Telephone Exchange for about a year. In 1882 Tesla also worked in Paris for the Continental Edison Company and a year later he had successfully constructed his first induction motor. At the age of 28, Nikola Tesla left Europe and immigrated to the United States.

Thomas Edison, who was an inventor and a business mogul, decided to hire Tesla and they started to improve some of Edison's inventions. Edison's direct current (DC) electrical works were becoming the standard in the US. Six months later Tesla left the Edison company and received funding to develop arc lightning and the Tesla Electric Company was born. However, the investors soon abandoned him and formed a new company without Tesla. That led to Nikola Tesla losing control to the patents he had assigned to the company and he had to work as a manual laborer in order to make his living.

Two years later he started a company along with Alfred S. Brown, who was Western Union's superintendent, and Charles F. Peck, who was an attorney. The new company was named after Nikola Tesla himself: Tesla Electric Company. Tesla improved and developed electric motors and generators. Around that time there was a rivalry between Edison and Tesla and more specifically the "war of currents" between the AC and DC. One year prior to that, George Westinghouse from the Westinghouse Electric Company had actually bought the patent rights to Nikola Tesla's AC dynamos, transformers, and motors. The war of currents was basically a propaganda campaign where Edison Electric tried to claim that their DC system is safer than the Westinghouse's AC. To prove their point to the public, Edison's company, for example, did many animal electrocutions but despite that, they lost the battle. Westinghouse's AC was lower in cost than the DC for the transmission of energy from power plants into homes. Tesla and the Westinghouse Electric Company won a contract to install the first power machinery in at Niagara Falls.

Around 1900 Tesla planned to build a global and wireless communication system for sharing information and providing free energy. Nikola Tesla began designing and building a laboratory with a power plant and a huge transmission tower on a site on Long Island, New York, which became known as Wardenclyffe. He had to abandon his project due to his investors and in 1917 Tesla declared bankruptcy and the tower was dismantled. Nikola Tesla died at the age of 83 on January 7, 1943.

Although Nikola Tesla's name may be unknown to some, we can still see the result of his work in today's society. He produced the first AC motor, laid the foundation for wireless technologies, was a pioneer in the discovery of radar, x-ray technology, and remote control. He built the world's first large-scale AC power plant with George Westinghouse. The magnetic field strength of MRI scanners is measured in Teslas and his surname is the name of a leading maker of electric cars. These are just a few of his accomplishments but it's safe to say that he was one of the most visionary engineers of all time.

661 words

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Stephen Hawking (Eeli Anisimaa)

Stephen Hawking was an English theoretical physicist, cosmologist and author. Professor Stephen William Hawking was born on 8th January 1942 in Oxford, England. When Stephen was eight his family moved to St. Albans close to London. At the age of eleven, Stephen went to St. Albans school. Stephen went later to study in University College, Oxford in 1952, his father's old college. Stephen wanted to study mathematics, but it was not available at the time in University College, so he studied physics instead. After three years he was awarded a first class honours degree in natural science.

In 1962 at 20 years of age, Hawking started his research in cosmology at the Department of Applied Mathematics and Theoretical Physics (DAMPT) at the University of Cambridge. He was the only one working on that area at the time. His supervisor was Dennis Schiama. Hawking would have preferred Fred Hoyle, who was working in Cambridge. Stephen got his PhD in 1965 with thesis "Properties of Expanding universes". In 1966 Stephen won the Adams Prize for his essay "Singularities and the Geometry of Space-Time". Stephen moved to Institute of Astronomy in 1968 and in 1973 moving back to DAMPT, where he worked as a research assistant, and published his first academic book, "The Large Scale Structure of Space-Time, George Ellis. He became a Reader in Gravitational Physics at DAMPT in 1975, and progressing to Professor of Gravitational Physics in 1977. Stephen held the position of Lucasian Professor of Mathematics from 1979 until 2009. Great names like Isaac Newton have held the same position. In 2009 Stephen started working as the Director of Research at DAMPT.

Professor Stephen Hawking worked on basic laws of physics which govern the universe. In 1970 with Roger Penrose he showed that Einstein's general theory of relativity implied space and time would have beginning in the Big Bang and an end in black holes. In 1974 Hawking also discovered that black holes should not be completely black, but rather emit "Hawking" radiation and eventually evaporate and disappear. Last years of his life, he was working with colleagues on a possible resolution on the black hole information paradox, where debate centres around the conservation of information.

Stephen Hawking has received 13 honorary degrees. In 1982 he was awarded CBE (Commander of the British Empire), In 1989 Companion of Honour and the Presidential Medal of Freedom in 2009. He was also a fellow of the Royal Society and a member of the US National Academy of Sciences. He was a recipient for many awards, medals and prizes.

In 1963 Stephen was diagnosed with rare early-onset slow-progressing form of motor neurone disease also known as ALS, a terminal illness that affects and causes the deaths of neurones that control the brain and the spinal cord. The illness gradually paralysed him over the years. On the final year at the Oxford

Hawking experienced clumsiness. His state got even worse when his speech started to slur. Stephen's family noticed the symptoms and they started medical investigations. He got diagnosed with ALS at the age of 21, in 1963. Doctors gave him two years to live.

Hawking lost his ability to write so he developed compensatory visual methods. He could see equations in terms of geometry. Hawking was independent and unwilling to accept help or make concessions for his disabilities. His speech deteriorated in the 1970s. He communicated by raising his eyebrows to choose letters on a spelling card. In 1968, he received a computer program called the "Equalizer" that helped him communicate. Hawking died at his home in Cambridge, England on 14th March 2018, at the age of 76.

RIP Stephen Hawking

Carolyn Porco (Annika Marttila)

Carolyn Porco is born in March 6th, 1953 (age 66) in Bronx, New York, U.S.

Porco is an American scientist who explores the outer solar system and led the imaging science team on the Cassini mission in orbit around Saturn from 2004 to 2017.

Imaging science is a multidisciplinary field concerned with for example generation, analysis and visualization of images, including imaging things that are the human eye cannot detect.

Carolyn Porco is an expert on planetary rings and the Saturnian moon, Enceladus, to which she has turned primarily her attention to the study for the past decade. The south polar of the small moon called Enceladus was found in images taken by Porco's Cassini team, to be the site of over hundred tall geysers of icy particles erupting from four district, deep fractures crossing the region.

Porco has also co-authored more than 110 scientific papers on subjects ranging from the spectroscopy of Uranus and Neptune, the interstellar medium, the photometry of planetary rings and the list continues.

Porco's research over the past forty years has ranged across the outer solar system to the interstellar medium. Especially, she was responsible for the discovery of one of the Neptune ring arcs; for elucidating the behaviour of the rings and ring edges of Saturn, Uranus and Neptune.

Porco was founder of The Day the Earth Smiled which was in July 19th, 2013 when NASA's Cassini spacecraft has captured Saturn's rings and our planet Earth and its moon in the same frame.

Porco is also a frequent speaker; she has given two popular lectures at TED and as well as the opening speech for Pangea Day, a May 2008 global broadcast coordinated from six cities around the world. In which she described the cosmic content for human existence. Also, Porco is the creator/editor of the Cassini imaging team's CICLOPS (Cassini Imaging Central Laboratory for Operations) website, where Cassini images are posted, and she writes the site's homepage "Captain's Log" greetings to the public. CICLOPS is also part of the Space science Institute in Boulder, Colorado.

For education Porco has accomplished Cardinal Spellman High School in Bronx, New York city and she graduated from high school in 1970. In 1974 Porco earned a Bachelor of Science degree from the State University of New York at Stony Brook.

In 1983 Porco received her Doctor of Philosophy from the California Institute of Technology in the Division of Geological and Planetary sciences and supervised by Peter Goldreich Porco wrote her dissertation focused on Voyager discoveries in the rings of Saturn.

A bit more about Carolyn Porco's career; in the fall of 1983 Dr. Porco joined the faculty of the Department of Planetary Sciences at the University of Arizona and she served there until 2001 achieving tenured professorship in 1991. Nowadays Porco is a Senior Research Scientist at the Space Science Institute in Boulder, Colorado and she is an Adjunct Professor at the University of Colorado at Boulder.

In 1983 Porco was also made a member of the Voyager Imaging team and she was a co-originator the idea to take a 'portrait of planets' with the Voyager 1 spacecraft and participated in the planning, design and execution of those images in 1990, including the famous Pale Blue Dot image of Earth and it was taken on February 14th,1990.

Porco was selected as the leader of the Imaging Team for the Cassini-Huygens mission in November 1990. The mission was international, and they successfully placed a spacecraft in orbit around Saturn and they also found the seven moons of Saturn.

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Stephen Hawking (Antti kemppainen)

Stephen Hawking is one of the most intelligent and influential scientists in world history. He was the first scientist to devise a cosmology that married the general theory of relativity and quantum mechanics, and he made huge contributions to our understanding of black holes, the big bang and space in general.

Stephen Hawking was born in Oxford, England 8.1.1942 (also the 300th anniversary of famous scientist Galileo). He was born in highly educated family, both of his parents working at the university of Oxford. Stephens's father, Frank Hawking, studied at Oxford University as a medical researcher - while mother, Isobel Hawking, was one of the first women to attend the university in the 1930's (a time period when not many women considered college). Stephen had three siblings and he was the oldest. Stephen wasn't that good of a student as many would think. It was said that he had average grades and that he was lazy, but he still was deeply interested in science. His friends saw potential genius in him, and he got a nickname from them, Einstein. He enjoyed being a member of the school's boat club as well as classical music. Stephen won a scholarship in Natural sciences at age of 17, he graduated at age 20 with a first-class honors degree in Physics from University College, Oxford. Thereafter, Hawking carried out research at Trinity Hall, University of Cambridge, for a PhD in Astronomy and Cosmology.

At the age of 21, Stephen started to have health issues. His speech started to slur, and he started dropping items from his hands without any control. After going through series of tests he was diagnosed with Amyotrophic lateral sclerosis (ALS), a motor neuron disease in which the nerves controlling the muscles become inactive while the sensory nerves function normally. At first his doctors expected him to die within two years. These news were truly devastating for Stephen. He wanted to make up his pending life for science. He wanted to earn his PHD before he died, so he started to study even harder, than before. Around the same time, he met a girl named Jane Wilde at the party who he fell in love with and got married with. Jane and his work gave him a reason to keep fighting against ALS. Hawking's state got so bad in time, that he had to use wheelchair and his speaking got very difficult and eventually, he lost his ability to speak. Despite the initial diagnosis from doctors, Stephen lived a full and very productive life with the help of modern science and medicine. Although he was confined to a wheelchair and couldn't talk, he communicated using a touch pad computer and a voice synthesizer.

Stephen put much of his time researching black holes and different kind of space-time theories. He wrote many important subjects about them. His most famous one was his theory about black holes: At one time it was thought, that absolutely nothing could escape from a black hole. Hawking's equations produced an amazing result, that over time black holes can lose energy. Now known as Hawking radiation, hence they

can shrink and 'evaporate,' disappearing from the universe. Hawking also liked writing books. His most famous was 1988 published A brief history of time. This book covered modern subjects on cosmology such as the big bang and black holes in terms that could be understood by the average reader. With millions of copies sold, the book was a huge success and it was a best seller few years.

Stephen Hawking died peacefully at the age of 76, at home, 14.3.2018, in Cambridge, UK.

His computer synthesized voice, his sense of humor, and the concept a genius mind trapped within a powerless body captured the public imagination all over the world. Arguably, Hawking became the most famous scientist of the late 20th and early 21st centuries. Truly inspiring man.

Nikola Tesla - The Wizard Of The West (Arttu Siekkinen)

Nikola Tesla was born in the small village of Smiljan, Croatia on July 10, 1856. His father Milutin Tesla, was an orthodox priest and a writer. Milutin tried to encourage his son to join the priesthood, but Nikola's interests were only in sciences. Nikola's mother, Djuka Mandic, was the one that sparked Nikola's interest in sciences and electrical inventions. Tesla always credited his mother and her influence for his eidetic memory and creative abilities.

Nikola was second youngest in his family of five children. He had three sisters Angelina, Milka and Marica. His oldest brother, Daniel, died at age twelve in a tragic horse accident.

As a child Nikola loved to write poetry and read. In 1861, Tesla attended primary school in Smiljan where he studied German, arithmetic, and religion. After completing primary school, followed middle school. In 1870, Tesla moved to Karlovac where he attended high school at the Higher real gymnasium.

Tesla had written, that he became interested in demonstrations of electricity by his physics professor. He saw those demonstrations as a "wonderful force" so he wanted to study more about them. Tesla finished a four-year term in three years, graduating in 1873.

When he was 17, he contracted cholera and was bedridden for nine months and nearly lost his life. Tesla's father made a promise to send him to the best engineering school if he survived.

In 1875, Tesla enrolled at Austrian polytechnic in Graz, Austria. Tesla worked incredibly hard in his first year. The second year wasn't so good for him, because he got into a conflict with his professor. Tesla also lost his military frontier scholarship in the second year. Tesla never graduated from the university.

In 1881, Tesla moved to Budapest, Hungary, to work at the Telephone exchange. Tesla noticed he could make the company more functional, and so he did. After a few months Tesla was allocated the chief electrician position. Tesla made several improvements to the company's equipment.

After that job, Tesla got another one in Paris at Continental Edison Company. There he learned a great deal about electrical engineering. Management noticed his potential and had him soon designing and creating better versions of dynamos and motors.

In 1884 Tesla moved to the United States to work for Thomas Edison. Tesla helped Edison to improve many of Edison's inventions. After Edison lied and did not give Tesla his reward on finishing a project, Tesla left and went to start his own company, the Tesla Electric Light Company.

Tesla had some trouble receiving funding for his projects and inventions, but still he managed to invent amazing inventions that are still used today. For example, Tesla developed an induction motor that ran on alternating current, which was invented by him too. Tesla has hundreds of patents, and he didn't even try to get many of his inventions patented.

After financial problems, Tesla had to declare bankruptcy and abandon some of his biggest projects ever, as the Wardencllyffe. Wardencllyffe was tower, that would have created free energy, at least according to Tesla. Wardencllyffe was dismantled and sold for scrap to help pay the debts he had accrued.

Tesla suffered a nervous breakdown followed by the closure of his free energy project. Tesla eventually returned to work, primarily as a consultant. Tesla didn't quite recover from the breakdown, and his ideas became progressively more impractical.

Tesla grew more eccentric, and he used a great portion of his time to take care of the wild pigeons in the parks on New York City. Tesla died poor and with unpaid debts to coronary thrombosis on a January 7, 1943, at the age of 86, in New York City.

Tesla (Erik Koskelo)

Nikola Tesla was a Serbian-American inventor, engineer and a futurist. He is best known for his advances in the field of alternating current (AC). He was born around the mid-1850s and died about 90 years later. His remains to this day remain in the Nikola Tesla Museum in Serbia in his favourite geometrical object, a sphere. He, like many other men of reason are rumored to be, was indeed a college dropout. During his years among us, he worked in both Continental Edison and Edison Machine works prior to starting to work on his own. He ended up having more than 300 patents to his name.

Tesla possessed an eidetic memory, very similar to photographic memory and never slept more than two hours per night. He considered women superior to men in every way and that he could never be worthy of one. That and him being a bit introverted led to him never marrying. He was also an extremely systematic man, working from 9am to 6pm every day. He had his dinner, usually alone in the same restaurant exactly ten minutes past eight every day. Afterwards, he would go and continue his work for hours. He also walked around 15km daily and would wiggle his toes a hundred times before bed. Even though having been described as a humanist, his beliefs include that not everyone should be able to get married nor to breed. His solution to this was to sterilize the unfit and to increase the difficulty to getting married. On a different note, he predicted that women would be the dominant sex in the future, and whilst one can't know the future, I believe him to be correct.

There are many conspiracy theories relating to Tesla's life and death. In fact, it is arguable that he is the most conspiracied person of all time. He claimed to have invented, among many other things, a motor that could run on

cosmic rays. Or a more famous one: the Tesla death ray. At an age of 77 the man claimed to have designed a superweapon capable of ending all wars. He liked to call it a teleforce, but I guess people enjoyed the sound of death ray more, so it was, and still is referred to as that. In certain circles it is believed that many of his failed projects and Tesla's death was ordered and orchestrated by "the inventor of the light bulb", Thomas Edison. The AC Tesla supported battled against Edison's Direct Current, DC for short. Since AC was and is far better than DC, it is both possible and probable that Edison was frightened of Tesla. So why not sabotage his work, why not kill him. With AC and his brilliant mind, Tesla had engineered a **free** and **wireless** way to transfer energy. While nowadays's best wireless charging works just for a few meters and is also by other measures at its infancy, Tesla could, with his Tesla coil and some dark wizardry, transfer electricity wirelessly to hundreds of meters of distance. The plan was to transmit energy to everywhere around the globe. For it was both free and wireless, the energy was a huge threat to big electricity- and wiring companies. The biggest sponsor for the project, J.P. Morgan, who was a giant in the copper industry, realized this and was bound to shut the project down. So Tesla never got to prove this on a big scale, and no other scientist/engineer was able to pick up his work, since all his work and belongings were confiscated by the Federal Bureau of Investigation only two days after he had passed away. The information is still to this day, not public.

Stephen William Hawking

(Janika Vuorma)

Stephen William Hawking was an English theoretical physicist and mathematician and he was known for his contributions to the fields of cosmology, general relativity and quantum gravity, especially in the context of black holes. Stephen was born on January 8, 1942 in Oxford, England. He has also two sisters and a brother. Hawking was an atheist and he believed that the universe is governed by the laws of science.

In 1950 when Hawking was eight years old, he moved with his family to St. Albans, where he attended St. Albans High School for Girls till he was ten. After that he attended St. Albans School. At the age of 17 he attended University College, Oxford, where he studied physics, despite his father's urging to focus on medicine. After graduating he spent a short time studying sunspots at Oxford University's observatory. Hawking moved to Cambridge in 1962. In Cambridge he decided to choose cosmology of the subject of his dissertation.

In 1963 Stephen was diagnosed with ALS (Amyotrophic lateral sclerosis), shortly after his 21st birthday. He was not expected to live more than two years. Despite of that Stephen graduated Doctor of Philosophy from Cambridge. He worked five years in Institute of Astronomy and after that he became the Lucasian Professor of Mathematics at the University of Cambridge between 1979 and he retired on 1 October 2009.

Because of ALS he could not move or talk very well and over the years he was almost completely paralyzed. As the disease spread, Hawking began using a wheelchair to move, and a Intel computer to talk for him. Regardless on ALS Stephen continued to combine family life with Jane Wilde and he has three children. Stephen and Jane divorced in 1991. Hawking married his nurse Elaine Mason four years after, but they divorced in 2006.

Hawking died on 14 March 2018 in Cambridge, Cambridgeshire at the age of 76. His ashes are buried in Westminster Abbey near Isaac Newton and Charles Darwin.

Hawking and Jacob Bekenstein demonstrated that Albert Einstein's Theory of General Relativity suggests that space and time began at the birth of the universe and ends within black holes (1970). These results indicated that it was necessary to unify general relativity with quantum theory. This was other great scientific development of the first half of the 20th century.

Using the two theories together, in 1974 Hawking also showed that black holes are not actually completely black, but instead emit 'hawking' radiation until they eventually exhaust their energy and evaporate. Hawking has also proposed that the universe has no edge or boundary in imaginary time.

Stephen Hawking received thirteen honorary degrees. He was the recipient of many awards, medals and prizes, most notably the Fundamental Physics prize (2013). He was also a Fellow of the Royal Society and a member of the US National Academy of Sciences and the Pontifical Academy of Sciences. Stephen published many books tackling the fundamental questions about the universe and our existence. He has also published many scientific papers. His most popular books are:

- A Brief History of Time (1988)
- Black Holes and Baby Universes and Other Essays (1993)
- The Universe in a Nutshell (2001)
- On the Shoulders of Giants (2002)
- God Created the Integers: The Mathematical Breakthroughs That Changed History (2005)
- The Dreams That Stuff Is Made of: The Most Astounding Papers of Quantum Physics and How They Shook the Scientific World (2011)
- My Brief History (2013)
- Brief Answers to the Big Questions (2018)

Hawking has also created a fictional series of books for middle school children with his daughter, Lucy Hawking. For example, "George and the Big Bang" (Simon & Schuster, 2012).