Wie is Marie Curie?

Marya Salomea Sklodowska Curie is haar voledige naam. Maar na een tijdje liet Marya zich Marie noemen.

*Who is Marie Curie?*

*Marya Salomea Sklodowska Curie is her fullname. But a little time later let Marya het Marie call.*

Geboorte?

Op 7 november 1867 werd er in het gezin Sklodowska, in Warschau, een meisje geboren, Maria Salomee, maar haar familie noemde haar Manja. Haar ouders waren beiden leraar in Warschau. Ze hadden al vier kinderen: Sofia, Bronislawa (Bronia), Helena en zoon Jozef. In die tijd werd Polen geregeerd door Rusland. De beste opleidingen en banen waren voor de Russen. De meeste Polen waren arm en het leven was zwaar voor ze. Met twee leraren als ouders was de familie beter af dan de meeste anderen. maria’s zus Sofia stierf in 1876 aan vlektyfus en Maria’s moeder stierf 2 jaar later nadat ze twee jaar aan tuberculose had geleden.

*Born?*

*On seven November eightteen sixty-seven was there in the family Sklodowska in Warsaw, a girl born, Maria Salomee, but her family called her Manja. Her parents were both teacher in Warsaw. They had four children: Sofia, Bronislawa (Bronia), Helena and their son Joseph. At that time Poland was ruled by Russia. The best training and jobs were for the Russians. Most Poland were poor and life were hard for them. With two teachers and parents was the family better off than most others. Mary's sister Sofia died in 1876 of typhus and Maria's mother died two years later after of tuberculosis she had two years ago.*

Kindertijd?

haar vader gaf natuurkunde en wiskunde en haar moeder was schoolhoofd op een meisjes school.

Als 15-jarige haalde ze cum laude het examen van de middelbare school, maar kort daarna kreeg ze last van neerslachtigheid en werd ze door haar vader naar familie op het platteland gestuurd waar ze een jaar met plezier verbleef. In 1883 voltooide Maria haar schoolopleiding. Ze had bewezen dat ze hard kon werken, slim was, een goed geheugen bezat en zich uitstekend kon concentreren. Haar school, het Russisch Lyceum, beloonde haar dan ook met een gouden medaille. Kort daarna werd ze getroffen door een zware vermoeidheid. Ze is toen door haar vader een jaar naar familie in het platteland gestuurd.  
Na haar terugkeer in Warschau begonnen Maria en haar zus Bronia geheime bijeenkomsten van de Vliegende Universiteit bij te wonen. De leden hiervan lazen wetenschappelijke boeken en deden andere werken die door de Russen verboden waren, omdat deze vonden dat ze een verkeerde invloed hadden. In 1885 werd Maria gouvernante om haar familie financieel bij te staan. Ze werkte in verschillende gezinnen, waar ze voor de kinderen zorgde en ze les gaf. In haar vrije tijd verdiepte ze zich in wis- en natuurkunde. Een deel van haar loon stuurde ze naar haar zus Bronia, die in Parijs medicijnen studeerde.  
In 1890 kreeg haar vader een betere baan en de geldzorgen van het gezin namen af. Maria bleef een tijdje bij haar vader wonen en gaf ook les in natuurwetenschappen. In 1891 besloot Maria om, net als Bronia, naar Parijs te gaan om wis- en natuurkunde te gaan studeren.

In de herfst van 1891 kon ze verhuizen naar Frakrijk om scheikunde, natuurkunde en wiskunde te studeren. Eerst logeerde ze bij haar zus en haar zwager. Al gauw verhuisde ze naar een kleine zolderkamer in een studentenwijk. Ze had weinig geld, at slecht, moest betalen voor haar colleges en was van vroeg tot laat in de bibliotheek te vinden. Om te kunnen studeren maakt ze flessen schoon en let ze op de branders in de laboratoria, net zoals de grote Faraday had gedaan. Twee jaar lang werkt Maria Sklodowska op deze manier. Ze brengt hele nachten door met studeren aan een tafeltje op haar zolderkamertje. Wekenlang eet ze niets anders dan brood en chocolade. Maar toch is ze gelukkig omdat ze zich aan de natuurkundestudie kan wijden. In 1984 leert Maria bij vrienden de jonge Pierre Curie kennen. Hij is een knappe Franse geleerde die samen met zijn broer natuurkundige onderzoekingen doet. De twee jonge mensen voelen zich tot elkaar aangetrokken. Maria ontmoette Pierre Curie op 27-jarige leeftijd, in het huis van een Poolse natuurkundige. Pierre was 35 en had een leidinggevende functie in een natuurkundelaboratorium. Ze hadden veel gemeen, maar de grootste overeenkomst was hun passie voor natuurkundig onderzoek. In 1893 studeerde ze af in natuurkunde en ging ze in het laboratorium van Lippman werken. Het jaar daarop behaalde ze haar graad in wiskunde. Vanaf dat moment hield ze zich bezig met puur wetenschappelijk onderzoek, niet om het geld dat ze ermee zou kunnen verdienen, maar omdat ze van haar werk hield en genoot van kennis. In 1895 trouwden Marie en Piere in Sceaux, Pierre’s geboorteplaats vlakbij Parijs. Ze heette nu Marie Curie. Later op 12 september 1897 in Parijs kregen ze hun eerste dochter Irène Joliot-Curie. Zij kreeg ook nog twee kinderen en schreef boeken en heeft ook 1 nobelprijs gewonnen zij stierf op 17 maart 1956 in Parijs. Marie en Pierre hadden ook nog een tweede dochter zij was geboren op 6 december 1904 in Parijs met de naam Ève Curie. Zij had geen kinderen maar schreef wel boeken.

*Childhood?*

*her father taught sience and mathematics and her mother was a school principal on a girls ' school.*

*As 15-year-old she took with distinction the examination of high school, but soon after she got last of dejection and she was sent by her father to family in the countryside where they stayed a year with pleasure. Maria completed her school education in 1883. She had proved that they could work hard, was smart, a good memory and outstanding possessed could focus. Her school, the Russian Lyceum, rewarded her with a gold medal. Shortly after, she suffered a severe fatigue. After her return in Warsaw started Maria and her sister Bronia secret meetings of the flying University to attend. The members of this read scientific books and did other works that were banned by the Russians, because they felt they had the wrong influence. In 1885, Maria was governess to her family financially. She worked in different families, where they made and for the children they taught. In her spare time she is in mathematics and physics. A part of her pay sent them to her sister Bronia, who studied medicine in Paris. In 1890 her father got a better job and the money worries of the family names. Mary stayed a while at her father live and also taught in natural sciences. In 1891, Maria decided to like Bronia, to go to Paris to study mathematics and physics. In the fall of 1891 she could move to France in order to study chemistry, physics and mathematics. First was staying with her sister and her brother-in-law. Soon she moved to a small attic room in a student quarter. They had little money, at bad, had to pay for her lectures and was from early until late in the library. To be able to study makes them bottles clean and watch them on the burners in the laboratories, as well as the large Faraday had done. Works for two years, Maria Sklodowska on this way. She brings entire nights by studying at a table on her small attic room. For weeks they eat nothing but bread and chocolate. Yet she is happy because they can devote themselves to the physics study. In 1984 Maria at the young friends Pierre Curie. He is a handsome French scholar who along with his brother physicist investigates. The two young people feel attracted to each other. Maria met Pierre Curie on 27-year-old age, at the home of a Polish physicist. Pierre was 35 and had a management position in a physics laboratory. They had a lot in common, but the biggest deal was their passion for physics research. In 1893 she graduated in physics and she went to work in the laboratory of Lippman. The following year she obtained her degree in mathematics. From then on, she kept herself busy with pure scientific research, not about the money they could earn, but because they loved and enjoyed her work's knowledge. In 1895 married Marie and Piere in Sceaux, Pierre's birthplace near Paris. Now she was Marie Curie. Later on 12 september 1897 in Paris they got their first daughter Irène Joliot-Curie. They also got two children and wrote books and also has 1 nobel prize she died on 17 March 1956 in Paris. Marie and Pierre also had a second daughter she was born on 6 december 1904 in Paris named Ève Curie. They had no children but wrote called books.*

Radioactiviteit?

Gewoonlijk is een atoomkern stabiel. Ze blijft zichzelf. In sommige stoffen echter hebben de atoomkernen de neiging om spontaan een aantal veranderingen te ondergaan. Dat gebeurt wanneer het evenwicht tussen de deeltjes in de kern zoek is of verstoord. Men zegt in dat geval dat de atoomkern onstabiel is.  
De onstabiele kern gaat spontaan op zoek naar een nieuw en beter evenwicht. Daarbij zendt ze overtollige energie uit (straling). Dat kan in de vorm van deeltjes of golven. Het verschijnsel noemt men radioactiviteit. Het proces waarbij de samenstelling van het atoom verandert en er zich een nieuwe atoomvariant of een nieuw atoom vormt, noemen we radioactief verval.

*Radioactivity?*

*Usually a stable atomic nucleus. She keeps herself. In some substances, however, the atomic nuclei tend to spontaneously to undergo a number of changes. That happens when the balance between the particles in the core search is or disturbed. It is said in that case that the atomic nucleus is unstable.*

*The unstable nuclear spontaneously goes looking for a new and better balance. In doing so, they shall send excess energy (radiation). That may be in the form of particles or waves. The phenomenon is called radioactivity. The process by which the composition of the atom changes and a new variant or a new atom, Atom is called radioactive decay.*

Hun werk zorgt voor meer?

Atoombommen: Het werk van Marie Curie, Ernest Rutherford, Albert Einstein, Otto Hahn en veel andere natuurwetenschappers heeft geleid tot meer inzicht in de eigenschappen van atomen en in de manier waarop ze gesplitst of samengevoegd kunnen worden om energie vrij te maken. Bij kernfusie worden atoomkernen samengevoegd. Onder de juiste omstandigheden komen er bij kernsplitsing en kernfusie enorme hoeveelheden hitte, licht, straling en andere vormen van energie vrij.

Kernenergie: Voortbouwend op het werk van de Curies en vele andere wetenschappers ontwierp de natuurkundige Enrico Fermi in 1942 de eerste experimentele kernreactor, aan de Universiteit van Chicago. De eerste kernenergiecentrale volgde snel. Uranium wordt gebruikt als brandstof om enorme hoeveelheden hitte te produceren, waarmee water verhit wordt. De stoom van het water drijft turbines aan die stroom opwekken. Als een uraniumkern wordt gesplitst komt er energie vrij en de deeltjes die vrijkomen splitsen weer andere kernen in een steeds sneller wordende kettingreactie. Een stukje uranium geeft 2 miljoen keer zoveel warmte af als een stukje steenkool van dezelfde grootte.  
De kettingreactie van uranium in een kerncentrale moet zorgvuldig gereguleerd worden, zodat de energie in een regelmatig tempo vrij komt. Technisch is dit mogelijk, maar kernenergie is absoluut geen probleemloze vorm van energie: kernafval blijft duizenden jaren actief en niemand weet hoe het op een veilige manier kan worden opgeborgen. Uit de verschrikkelijke explosie in de kerncentrale van Tsjernobyl, in de Oekraïne in 1986, bleek nog eens dat radioactiviteit een van de grootste gevaren is die de wereld bedreigt. Door het werk van Marie Curie en anderen weten we meer van atoomprocessen en de gevaren die deze processen met zich meebrengen.

*Their work allows for more?*

*Atomic bombs: the work of Marie Curie, Ernest Rutherford, Albert Einstein, Otto Hahn and many other scientists has led to a better understanding of the properties of atoms and in the way they can be split or merged to energy. Nuclear fusion are atomic nuclei merged. Under the right conditions in nuclear fission and nuclear fusion huge amounts of heat, light, radiation and other forms of energy is released.*

*Nuclear energy: building on the work of the Curies and many other scientists designed the physicist Enrico Fermi in 1942 the first experimental nuclear reactor, at the University of Chicago. The first nuclear power plant soon followed. Uranium is used as fuel to produce vast amounts of heat, with which water is heated. The steam drives turbines to those of the water flow. As a uranium nucleus is split some energy is released and the particles released split again other cores in an ever faster becoming chain reaction. A piece of uranium gives 2 million times as much heat as a piece of coal of the same size. The chain reaction of uranium in a nuclear power plant should be carefully regulated, so that the energy in a steady pace. Technically this is possible, but nuclear power is absolutely no hassle-free form of energy: nuclear waste remains active for thousands of years and no one knows how it can be safely stored away. From the terrible explosion at the Chernobyl nuclear power-station, in the Ukraine in 1986, showed that radioactivity is one of the greatest dangers that threatens the world. By the work of Marie Curie and others we know more of atomic processes and the dangers that these processes.*

Hoogtepunt:

In 1900 verhuisde de Curies naar de Boulevard Kellerman in Parijs. Eugène, de vader van Pierre, kwam bij ze wonen en zorgde overdag voor Irène. Pierre staakte zijn onderzoek naar kristallen en ging zich bezighouden met de eigenschappen van radioactieve emissies.  
Om het gezinsinkomen te vergroten en geld bij elkaar te krijgen voor onderzoek, moesten Pierre en Marie er extra banen bijnemen. Ondanks de groeiende reputatie van de Curies in de wetenschappelijke wereld en de wetenschappelijke resultaten die ze al behaald hadden, werd hun werk door de Sorbonne nauwelijks erkend. De universiteit stelde nog steeds geen geld beschikbaar voor verder onderzoek.  
In de eerste jaren van de 20e eeuw stuurden de Curies monsters van gezuiverd radioactief materiaal naar laboratoria in andere landen. Dit had tot gevolg dat het onderzoek naar radioactiviteit met sprongen vooruit ging en vele andere wetenschappers bij het werk betrokken raakten.  
Uiteindelijk maakte Marie in 1902 een pure vorm van radiumzout. Het was maar 0,1 gram. Voor 1 gram radium is 7000 kilo pekblende nodig. Toch was de hoeveelheid radium voldoende om enkele natuurkundige en chemische eigenschappen van het element op te sporen. Marie gaf het resultaat van haar werk door aan haar collega’s. Het was het hoogtepunt van haar wetenschappelijke carrière.

*Highlight?*

*The Curies in 1900 moved to the Boulevard Kellerman in Paris. Eugène, the father of Pierre, came to they live and made during the day for Irène. Pierre stopped research into crystals and did deal with the properties of radioactive emissions. In order to increase the family income and money get together for research, Pierre and Marie had to take additional courses. Despite the growing reputation of the Curies in the scientific world and the scientific results that they had already achieved, their work was hardly recognized by the Sorbonne. The University suggested still no money available for further research. In the first years of the 20th century the Curies sent samples of treated radioactive material to laboratories in other countries. As a result, the search for radioactivity with jumps went ahead and many other scientists at the work involved. Eventually made Marie in 1902 a pure form of radium salt. It was only 0.1 grams. For 1 gram of radium is pitchblende, 7000 km. Yet it was the amount of radium sufficient to some physical and chemical properties of the element. Marie gave the result of her work to her colleagues. It was the highlight of her scientific career.*

Prijzen en medailles?

Ze won 2 nobelprijzen en ze heeft 15 gouden medailles ontvangen.

*Prices and medals?*

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Dood?

Piere: donderdag 19 april 1906. Tegen halfdrie steekt Pierre Curie, in gedachten verzonken, de rue Dauphine over. Hij komt vanachter een rijtuig tevoorschijn en staat opeens voor een grote wagen die door paarden wordt getrokken. Pierre is volkomen verrast en probeert zich vast te grijpen aan de borst van een paard. Maar hij glijdt uit op de natte stenen en valt op de grond. De wagen rijdt over hem heen. Pierre Curie is op slag dood.

Marie: Marie bleef het werk in haar eigen laboratoria in Parijs leiden. Ze reisde veel om fondsen te werven voor jongere wetenschappers. Zo bezocht ze België, Brazilië en het toenmalige Tsjecho-Slowakije. Bij een bezoek aan de VS in 1928, kreeg ze een auto aangeboden door de autofabrikant Henry Ford en ontmoette ze de Amerikaanse president Herbert Hoover in het Witte Huis.  
Marie werd geopereerd aan grauwe staar, een oogziekte die waas voor het aangetaste oog veroorzaakt. Haar dochter Eve verzorgde haar. Ze werd steeds vaker ziek en in 1934 op 4 juli overleed ze in Sancellemoz, Zwitserland aan overmatige blootstelling aan straling, uit haar experimenten zowel van haar werken met X-ray machines. Als eerste vrouwelijke wetenschapper die echt beroemd werd had ze langer dan de helft van haar leven geleden aan stralingsziekten.

*Dead?*

*Piere: Thursday 19 april 1906. At half past two lights Pierre Curie, lost in thought, the rue Dauphine. He comes forth and is suddenly from behind a carriage for a big car that is pulled by horses. Pierre is completely surprised and tries to grab at the breast of a horse. But he slips on the wet stones and falls to the ground. Wagon rides over him. Pierre Curie is killed instantly.*

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Zij is mijn held?

Ze is mijn held omdat ze vecht voor wat ze wil doen en ze werd zo bekend.

*She is my hero because she fights for what she wants and so she’s famous.*

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