

## 1: Paper Facts for Kids | [www.enganchecubano.com](http://www.enganchecubano.com)

*Paper, a thin unwoven material made from milled plant fibers, is primarily used for writing, artwork, and packaging; it is commonly [www.enganchecubano.com](http://www.enganchecubano.com) first papermaking process was documented in China during the Eastern Han period ( CE), traditionally attributed to the court official Cai Lun.*

According to fairly recent archeological finds, paper were being made in China as early as the 1st century BC. Early Chinese paper was made from the bark of the mulberry tree. The bark fibers were broken and pounded into a sheet. Later, the Chinese discovered that one could make higher quality paper by adding hemp rags and old fish nets to the pulp. The history of Chinese writing is older than that of Chinese paper. Before the use of paper became widespread in the country, writers would write on bamboo or on pieces of silk. Silk was light weight and convenient, but extremely expensive. Bamboo was cheap and readily available, but heavy and cumbersome to store and transport. Paper on the other hand was both cheaper than silk and more practical than bamboo. Paper and the Silk Road One of the many things that spread along the Silk Road was the custom of making paper from natural fibers. We do for instance know that paper was introduced to Xinjiang in northwestern China very early through travellers on the Silk Road. China tried to keep the art of paper making a secret to prevent other countries from setting up their own paper production, but it was only partly effective. Paper making reached Tibet and India in the mid AD and local paper making centers were formed. Reports by the Chinese Buddhist monk Xuanzang dated to AD show that at in the s, paper was already in widespread use in the parts of India that he visited. Korea The earliest known instances of paper making in Korea is from the 6th century. In Korea, early paper was made from a pulp consistig of fibers from hemp, mulberry, rattan, bamboo, rice straw, and seaweed. Japan According to tradition, paper making was introduced to Japan by a Korean buddhist monk named Don-cho, who taught paper making at the Imperial Palace around the year AD. At this point, buddhism was still a fairly new religion in Japan, having been first introduced some 60 years earlier. Among the Chinese taken as prisoners of war were some that new how to make paper. When brought to Samarkand, they showed their Arab capturers the secrets of paper production, and by s AD, Samarkand was home to a flourishing paper industry. Egypt Just like the Chinese, the Arabs of Samarkand strived to keep the know-how of paper making a secret, but the practise did spread to Egypt during the early s. Of course, Egypt already had its own very long tradition of writing on something that was quite similar to paper – papyrus. Papyrus is made from the pith of the papyrus plant, a wetland sedge that is native to the Nile region. The earliest archeological evidence of papyrus are remains dated from circa BC, found during excavations of the ancient harbor at Wadi al-Jarf on the Red Sea coast. Spain By AD, paper were present in Spain, having been brought there as a result of the crusades. Soon, the first European paper industry had been established in Spain.

### 2: The Story of Paper | Owlcation

*A Brief History Of Paper. Neathery de Safita (Neathery Batsell Fuller) July What Is Paper? True paper is characterized as thin sheets made from fiber that has been macerated until each individual filament is a separate unit.*

Paper with legible Chinese writings on it has been dated to 8 BCE, [2]. The traditional inventor attribution is of Cai Lun , an official attached to the Imperial court during the Han Dynasty BCE CE , said to have invented paper about CE using mulberry and other bast fibres along with fishnets, old rags, and hemp waste. In the 8th century, papermaking spread to the Islamic world , where the process was refined, and machinery was designed for bulk manufacturing. Muslims invented a method to make a thicker sheet of paper. This innovation helped transform papermaking from an art into a major industry. This fiber is soaked, cooked, rinsed and traditionally hand-beaten to form the paper pulp. The long fibers are layered to form strong, translucent sheets of paper. In Eastern Asia, three traditional fibers are abaca , kozo and gampi. In the Himalayas, paper is made from the lokta plant. In Europe , papermaking moulds using metallic wire were developed, and features like the watermark were well established by CE, while hemp and linen rags were the main source of pulp, cotton eventually taking over after Southern plantations made that product in large quantities. This machine produces a continuous roll of paper rather than individual sheets. These machines are large. Some produce paper meters in length and 10 meters wide. Keller had invented the machine and associated process to make use of wood pulp in papermaking. Manual papermaking[ edit ] Five seminal steps in ancient Chinese papermaking outlined in a woodcut. Papermaking, regardless of the scale on which it is done, involves making a dilute suspension of fibres in water, called "furnish", and forcing this suspension to drain through a screen, to produce a mat of interwoven fibres. Water is removed from this mat of fibres using a press. The process of manufacturing handmade paper can be generalized into five steps: Separating the useful fibre from the rest of raw materials. Beating down the fibre into pulp Adjusting the colour, mechanical, chemical, biological, and other properties of the paper by adding special chemical premixes Screening the resulting solution Pressing and drying to get the actual paper Screening the fibre involves using a mesh made from non-corroding and inert material, such as brass, stainless steel or a synthetic fibre, which is stretched in a wooden frame similar to that of a window, this tool being known as a paper mould. The size of the paper is governed by the open area of the frame. The mould is then completely submerged in the furnish, then pulled, shaken and drained, forming a uniform coating on the screen. Excess water is then removed, the wet mat of fibre laid on top of a damp cloth or felt in a process called "couching". The process is repeated for the required number of sheets. This stack of wet mats is then pressed in a hydraulic press. The fairly damp fibre is then dried using a variety of methods, such as vacuum drying or simply air drying. Sometimes, the individual sheet is rolled to flatten, harden, and refine the surface. Finally, the paper is then cut to the desired shape or the standard shape A4, letter, legal, etc. The deckle leaves the edges of the paper slightly irregular and wavy, called "deckle edges", one of the indications that the paper was made by hand. Deckle-edged paper is occasionally mechanically imitated today to create the impression of old-fashioned luxury. The impressions in paper caused by the wires in the screen that run sideways are called "laid lines" and the impressions made, usually from top to bottom, by the wires holding the sideways wires together are called "chain lines". Watermarks are created by weaving a design into the wires in the mould. Handmade paper generally folds and tears more evenly along the laid lines. Handmade paper is also prepared in laboratories to study papermaking and in paper mills to check the quality of the production process.

### 3: The unfolding history of paper - CBS News

*The history of paper dates back almost 2, years to when inventors in China first crafted cloth sheets to record their drawings and writings. Before then, people communicated through pictures and symbols etched on stone, bones, cave walls, or clay tablets.*

Paper making[ change change source ] Modern paper is normally made from wood pulp. Paper pulp can be bleached to make paper more white, and dyes can be added to make colored paper. This pulp is pressed into sheets of paper. Printing is often done on paper before the paper is cut into sheets. Newsprint paper newspaper comes in a huge roll, and goes through the printing process as one continuous sheet. It is cut by a machine-driven guillotine blade later. Folding comes last, then packing for distribution. Milling is done by squeezing the paper through a series of rollers. Sometimes paper is made from used or waste paper: Not all paper is made from wood. Other kinds of fiber can be used. People still make paper from cotton , linen and hemp for special purposes. History of paper[ change change source ] Writing started long before the invention of paper. People wrote on many kinds of material. They wrote on cloth, on the stone walls and on wood. In Mesopotamia the Sumerians wrote on clay tablets, many of which have survived today. In Europe, people wrote on vellum. The people of Greece and Rome learned to do this too. The Romans wrote on parchment made from animal skin , on waxed tablets and on wood see Vindolanda. They had previously used bamboo and silk. The oldest existing paper with writing on it was found in the ruins of a watchtower in the Great Wall of China. It dates to about AD. Spread of paper[ change change source ] People in Japan learned how to make paper with fibres of the mulberry tree, around AD. This is called Japanese paper or Washi. An opportunity occurred after The Battle of Talas in Then an Arab army captured soldiers of the Chinese. There were some paper makers among the captured soldiers. From them, paper-making spread throughout the Islamic world. In , a paper mill was built at Samarkand. People learned to use linen as paper raw material and to use starch made from flour as an additive. The Italians used hemp and linen rags. In the first Italian paper mill was built at Fabriano and, until the 14 century, Italy was a paper supplier in Europe. In the first watermark was introduced in Bologna. Machine-made paper[ change change source ] Paper was hard to make. It was cheaper than the old writing materials, but still expensive. A mechanical paper maker was conceived in France , but invented in England. At least one paper mill was using them by In Friedrich Gottlob Keller Invented a machine that could make pulp for paper out of wood fibres instead of the expensive rag paper. Paper became cheap enough for everyone to buy. Around the same time, other inventions were made, like the pencil , the fountain pen , and a printing press that used steam power. With this new information technology , people wrote more letters, made more books and newspapers , and kept more records of what they did. Paper is produced in large factories called paper mills. They produce hundreds of thousands of tons of paper each year. Uses of paper[ change change source ] Making Chinese paper Paper is used for writing and printing. Books, magazines and newspapers are printed on paper. Paper is often used for money. Paper used for money is made in special ways. It does not use wood fiber. It is mostly cotton with additives to make it hard for people to print their own money. A piece of paper money is called a banknote , a bill or a note. Paper can be used for cleaning. Special forms of paper are used, such as paper towels , facial tissues or toilet paper. Pretty paper can be used as decoration. It can be pasted onto the walls of a room; this is called wallpaper. Paper can be used to wrap gifts. This is called wrapping paper or gift wrap. Some kinds of paper are strong and can be used in boxes and other packaging material. Sometimes several layers of paper are held together with glue , to make cardboard.

## 4: Paper History - Origins, Techniques and Uses

*All About Paper Paper Origins & History. Paper has a rich, colourful history which has spanned the world's geography and its cultures. To trace its development offers us insight into humanity's relentless imagination, creativity and sometimes folly.*

Paper pulp can be bleached to make paper more white, and dyes can be added to make colored paper. This pulp is pressed into sheets of paper. When the sheets are dry, they are cut into pieces of paper. Milling is done by squeezing the paper through a series of rollers. Sometimes paper is made from used or waste paper: Not all paper is made from wood. Other kinds of fiber can be used also. People make paper from cotton, linen, and hemp. History of paper Ruins of a watchtower on the Great Wall of China Writing started long before the invention of paper. People wrote on many kinds of material. They wrote on cloth, on stone walls, on wood. In Mesopotamia the Sumerians wrote on clay tablets, many of which have survived today. In Europe, people wrote on vellum. The people of Greece and Rome learned to do this too. The Romans wrote on parchment made from animal skin, on waxed tablets and on wood see Vindolanda. They had previously used bamboo and silk. The oldest existing paper with writing on it was found in the ruins of a watchtower in the Great Wall of China. It dates to about AD. Spread of paper People in Japan learned how to make paper with fibers of the mulberry tree, around AD. This is called Japanese paper or Washi. An opportunity occurred after The Battle of Talas in Then an Arab army captured soldiers of the Chinese. There were some paper makers among the captured soldiers. From them, paper-making spread throughout the Islamic world. In , a paper mill was built at Samarkand. People learned to use linen as paper raw material and to use starch made from flour as an additive. The Italians used hemp and linen rags. In the first Italian paper mill was built at Fabriano and, until the 14 century, Italy was a paper supplier in Europe. In the first watermark was introduced in Bologna. Machine-made paper Paper was hard to make, and it cost a lot of money. In the 19th century, new machines were made that could make paper out of wood fibres instead of the hand-made rag paper. This was conceived in France, but the machines were invented in England. The first one was in use by Around the same time, other inventions were made, like the pencil, the fountain pen, and a printing press that used steam power. Because of these new things, it was easy for people to write letters, to buy books and newspapers, and to keep records of what they did. Paper is produced in large factories called paper mills. They produce hundreds of thousands of tons of paper each year. Uses of paper Paper is used for writing and printing. Books, magazines and newspapers are printed on paper. Paper is often used for money. Paper used for money is often made in very special ways, to make it hard for people to print their own money. A piece of paper money is called a banknote, a bill, or a note. Paper can be used for cleaning. Special forms of paper are used, such as paper towels, facial tissues, or toilet paper. Pretty paper can be used as decoration. It can be pasted onto the walls of a room; this is called wallpaper. Paper can be used to wrap gifts. This is called wrapping paper or gift wrap. Some kinds of paper are strong and can be used in boxes and other packaging material. Sometimes several layers of paper are held together with glue, to make cardboard. Idris Bell and T. The invention of printing in China and its spread westward. Encyclopedia Britannica, from Encyclopedia Britannica Online. The genius of China: Simon and Schuster, New York. A chronology of paper and paper-making.

### 5: The History of Paper

*Then There Was Paper. A courtier named Ts'ai-Lun, from Lei-yang in China, was the first recorded inventor of paper circa A.D. Ts'ai-Lun presented paper and a papermaking process to the Chinese Emperor and that was noted in the imperial court records.*

History of Paper – A Chinese Invention? Article by Heather History of Paper: The Ancient Sumerians used stone tablets to write letters and tell their history. The Ancient Egyptians learned how to make paper from papyrus, which allowed for easier transport of books and important documents, but was difficult and time consuming to make. The Ancient Chinese, prior to the first century CE, used stones, animal bones and hides, and wood to document laws and grain production, and to write letters to loved ones. The production of paper, as we still know it today, began about years ago in Ancient China. This form of making paper was truly a labor, time, and cost intensive process. The person, historically given as a de facto father of papermaking, is Cai Lun. His role and work in Ancient China is debatable. Regardless of his duties, he is credited with developing a better way to make paper. Using plant fibers from pieces of rope, old fishing nets, cotton rags, bamboo and tree bark, Cai Lun shortened the time to produce the raw material necessary to begin making the paper by several months. Next, he mixed wood ashes and water with the plant fibers and boiled it for about five weeks. Wood ashes are alkaline, which cooks or breakdowns the more acidic plant fibers. After the mixture had sufficiently boiled, a gluing agent, such as the juice from boiled birch leaves, was added. The plant pulp, cleaned with water and strained, was spread into sheets to dry. History of Paper Continues: Today, paper is made from trees grown and harvested specifically for making paper, wood leftover from other projects such as flooring lumber , and from recycled paper. Interesting to note is that we continue to use Ancient Chinese ideas for making paper, such as using non-wood products to make paper. Original content here is published under these license terms: X Read Only License Summary: You may read the original content in the context in which it is published at this web address. No other copying or use is permitted without written agreement from the author. You might also like:

### 6: History Of Paper Airplanes - Paper Plane Mafia

*More and more of us may read their newspaper online. But many kinds of paper are "on a roll." Martha Teichner this morning offers us a crash course on paper. You might want to take notes: They.*

Thanks to the wonderful creation of paper many descriptions of our world have been stored so that we may share and learn from them. Paper has been used for many purposes, not just literature, but for war plans, the creation of the dollar bill, and of course, to give the ability to people at home of producing their own writing in physical form for hundreds of years. We have prepared the following history of paper, along with a description of how paper is made, what it is used for and some words that are useful to know when talking about paper. We hope that this is an informative, useful and enjoyable document which inspires you, in the same way that we have been, about paper. We welcome your comments and contributions. Please contact us at anytime.

The Origins of Paper Egypt 3, BC When we think of the origins of paper, our minds might wander back over years ago to the Nile river valley in Egypt. It was there that a marsh grass called Cyperous Papyrus flourished. These strips were then layered in right angles to form a kind of mat. The mat was then pounded into a thin sheet and left in the sun to dry. The resulting sheets were ideal for writing on. Since they were also lightweight and portable they became the writing medium of choice of Egyptians, Greeks and Romans for record keeping, spiritual texts and works of art. It is from papyrus that the word paper comes from. Although papyrus sheets were similar to paper in terms of function, being laminated sheets they were technically more like a mat and therefore not the same as the papers of today. Similar processes were developed in other lands - in Central America during the 2nd Century AD the Mayans fashioned a similar product for bookmaking. In the Pacific Islands, a paper was made by beating a fine bark over specially shaped logs to make clothes and ritual objects. However, none of these sheets would qualify as true paper today. The individual fibres were mixed with water in a large vat. Next, a screen was submerged in the vat and lifted up through the water, catching the fibers on its surface. When dried, this thin layer of intertwined fiber became what today we call paper. It was introduced in Korea in the 4th century and spread to Japan in 6th. There, during the 8th century, the Empress Shotuka undertook a massive project consisting of printing a million prayers - dharani - on individual sheets of paper, with each mounted in its own pagoda. With such a profound inception, it is not surprising that the fine art of papermaking has continued in Japan to this day, garnering deep appreciation and ever increasing sophistication. During a battle on the banks of the Tarus river, Islamic warriors captured a Chinese caravan which happened to include several papermakers. They spirited them away to Samarkand, which soon became a great centre for paper production. Gradually papermakers made their way further west through the Muslim world - to Baghdad, Damascus and Cairo. Finally, when the Moors from North Africa invaded Spain and Portugal they brought the technology with them and so it was that papermaking entered Europe in the 12th century. Spreading the Word In Europe, the use of papyrus had dropped out in the 9th century. The preferred medium for the artists and literati of the time was the smooth and lustrous parchment. However, parchment - made from animal skin - was extremely expensive. In fact, it has been estimated that a single bible hand written on parchment required the skins of sheep. The notion of paper being used as a practical everyday item did not occur until the 15th Century. When Johann Gutenberg perfected movable type and printed his famous bible in , he not only spread the word of Christianity, but also sparked a revolution in mass communication. The birth of the modern paper and printing industry is commonly marked from this date. Paper Becomes an Industry The Age of Experimentation Printing technology rapidly developed and created an ever increasing demand for paper. The early European papers were made from recycled cotton and linen - and a huge trade quickly developed around the trading of old rags. It is said that the black plague entered England from Europe on these old rags. Yet soon this source became insufficient and some curious attempts were made to source new materials - the most macabre of which was the recycling of Egyptian mummies to create wrapping paper! Others experimented with fibres such as straw, cabbage, wasp nests and finally wood, resulted in inexpensive - and replaceable - materials for paper making. Today, the long soft fibres of softwoods such as spruce have become the most suitable source of pulp for mass production. Mass Production The demand for paper also

created the need for greater efficiency in production. In the late 18th century the labours of Nicholas Luis Robert resulted in the creation of a machine that could produce a seamless length of paper on a endless wire mesh with squeeze rollers at one end. Perfected and marketed by the Fourdrinier brothers, the new machine made papers soon replaced traditional single sheets made by hand. Today, the increasing volume of paper consumption has become a complex environmental matter - and the need for new materials increasingly urgent. While recycling has done some good, much paper is still wasted. The Future of Paper Looking Ahead Owing to the ceaseless imagination of humanity, the words you are reading at this moment are digitally arranged and sent across the world via a new technology - signaling a new revolution in mass communication. As these new technologies develop where does the future of papermaking lay? At HQ PaperMaker we believe it lies in the past, when paper was valued for its innate sensual qualities - an appreciation which deeply respects the materials used, the skill of the artisan and the unique quality of the finished product. Return to Tradition In the west, as industrial paper production boomed the art of hand paper-making has been driven nearly to extinction - being practiced only by a few fine artists and crafts people. However, in small areas throughout Asia, the tradition has lived on. Incidentally, the traditional Asian paper which is often referred to as "rice paper" is not made from rice fibres at all. More commonly it is made from the versatile mulberry tree - varieties of which are also used for feeding silkworms and in medicine. In contrast to the cold precision and standardisation which industrial production demands, the soft, subtle textures and natural feeling of handmade paper is said to echo the warm heart of the papermaker who makes each sheet with devotion. Papermaking in Thailand In Thailand there are records of papermaking going back seven hundred years. Traditional uses of paper have been for Buddhist texts, temple writings and ritual purposes. It used to be that paper was made from the inner bark of the Khoi tree *Streblus Asper* L. Earlier in the 20th century paper production from Khoi began to die out because of a shortage of Khoi trees. It was not until the Japanese occupied the kingdom during the second world war that paper making again flourished in Thailand. For centuries the Japanese had been making paper called "Kozo" from the inner bark of the mulberry tree *Broussonetia Papyrifera* L. In Thailand the mulberry tree - known as "sa" - grew in abundance and the Japanese demand for maps, banknotes and other documents caused sa paper production to flourish. The mulberry tree is still abundant in Thailand - growing wild all over the Northern forest and lowland areas - and Thai artisans continue to produce handmade paper using the same technique that they have done for centuries. Yet, as international demand for these products is increasing, new speciality papers are being developed which incorporate colour dyes, flower petals and other materials into their design. HQ Group were among the first people in Thailand to produce sa papers incorporating petals and leaves nearly ten years ago and our original paper sheet designs using bougainvillea petals and tamarind leaves, for example, are still hugely popular internationally. Making Paper The Process Although there are many subtleties which affect the quality of a paper, papermaking in essence is a simple process. Whether using recycled materials or fresh organic matter, the process starts by shredding the material into small strips and soaking them overnight to loosen the fibres. Next, the fibres are boiled for hours, being turned every so often. When finished, the fibres are washed with fresh water to remove impurities and then small particles or specks are removed by hand. The fibres are beaten in a blender or by hand to a creamy pulp. At this stage, dyes can be added to create coloured papers. The pulp is poured into a large tub and the fibres are suspended in the water. The artisan dips a framed screen into the water and with great skill, lifts it to the surface catching the fibres onto the screen. The screens can either be left in the sun to dry, or be transferred to boards, pressed, smoothed and then dried. The Possibilities Papers made in this tradition are durable, flexible and extremely versatile. They can be used by anyone for gift-wrapping, writing, drawing and painting. They are also used by craft-makers to produce books and binding, stationery and greeting cards, boxes, picture frames and so on. Paper also has many applications in architecture and interior design, such as wallpaper, screens, blinds and lampshades. By using techniques such as moulding and papier-mache one can make almost anything - vases, trays, jewellery, furniture and utilitarian products such as cartons and packaging. In fact, paper is such a versatile medium, its uses are only limited to the imagination Would you like to learn a few helpful words for talking about paper?

### 7: Papermaking/History of paper - Wikibooks, open books for an open world

*The History Of Paper Airplanes. It is widely believed and accepted that the history of paper airplanes finds its roots in ancient China, where paper was used to create the first flying kites.*

The history of paper started just after the start of the Gregorian calendar. This plant grows only on the shore lines of streams in the Middle East, like the river Nile a river in Africa which flows into the Mediterranean Sea in Egypt. The "paper" from the papyrus plant was first used by the Babylonians and thereafter by the Egyptians around B. Also the Greeks and Romans used papyrus, amongst others for contractual obligations. The "paper" from the papyrus plant was made from the stem of the plant. The outer rind is first stripped off, and the sticky fibrous inner pith is cut lengthwise into thin strips. The strips are then placed side by side on a hard surface with their edges slightly overlapping, and then another layer of strips is laid on top at a right angle. While still moist, the two layers are hammered together, mashing the layers into a single sheet. The moisture or juice from the strips function as adhesive between the layers. The sheet is then dried under pressure.

Other early information carriers[ edit ] The oldest known information carriers are cave paintings. The paintings tell us about ordinary life in those days. The Sumer wrote with cuneiform script on soft clay tablets around B. This is about the same time when the Egyptians used soapstone. Other organic information carriers, besides papyrus, were leather, parchment, wood and bark. The Romans also used wax for texts which did not need to last for a long time. Especially for buildings the texts were inscribed into the stone of the building. The early Chinese also used materials like shells, bones and ivory. The early Indians uses leaves of palms. Also used as information carrier were jade, iron, gold, silver, tin, bronze, bamboo and silk. Early paper production by the Chinese Invention of paper[ edit ] Paper made out of plant like fibres was invented by the Chinese Cai Lun , who in AD mixed textile fibres and fibres from the bark of the mulberry in water and produced sheets of paper from that. The invention of paper was one of the reasons of the successes of early China, through easier governing of the country. Archeological findings have shown that paper made from plantlike fibres, were already used from to 87 BC. Papermaking knowledge moves out of China[ edit ] The art of papermaking was first exported from China to Korea and Japan around AD. Arabic people have learned the papermaking technique in the 8th century from Chinese, as is being told, from Chinese people skilled in papermaking who were captured. The Arabic people spread the knowledge during their military campaigns in the North of Africa and the South of Europe. The first paper manufacturing in Europe started in in Xativa near Valencia in Spain. The first papermaking in countries in Europe, which were not controlled by the Arabians, was in the 13th century in Italy and Spain, although the usage of paper was already known in Europe since about A paper mill in Fabriano near Ascona in Italy existed in and still exists nowadays. Around this time sizing paper with animal glue was invented in Italy. The Germans had their first paper mill in , followed by the rest of Europe at the end of the 15th century. In Belgium the first paper production was in Huy Hoei in and in Holland in in Dordrecht in Papierproduction before the mechanisation of papermaking Where was the paper production located[ edit ] The ideal location for paper production was determined by two factors: The presence of raw materials The accessibility to power and energy The presence of raw materials was, before the invention which made the use of fibres from trees possible, depending on availability of rags. The rags, used clothes, were more available in urban areas. The fibres, which were used for producing paper, were cotton. The presence of power was necessary for the milling process needed to make fibres fit for papermaking. Wind mills or water mills were used as power sources. So paper mills in the old days were located at urban areas with access to wind or water power. Nowadays the energy source is not important, so that you can see a trend of concentration of paper industry to the areas where raw materials old paper and trees are. Further mechanisation and development of the paper production[ edit ] An important invention was made around and was called the "Hollander". This machine improved the milling process of the fibre much, and made it therefore also possible to use other fibres than cotton from rags. Now also old ropes and fishing nets could be used. This increased the availability of raw materials much. In the bleaching characteristics of chlorine was discovered and at the end of the 18th century this knowledge was used to bleach cotton, the raw material for

paper. The invention of the paper machine at the end of the 19th century increased mechanisation of papermaking further and therefore increased production capacity. Donkin in England and Robert in France developed the first paper machines. Mongolfier and Fourdrinier developed the concept further; a machine with a forming section wet end, press section and dryer section was developed. The paper machines used nowadays still have a similar build, so that those machines are still often called Fourdrinier machines. In another important invention was the sizing of the paper. In order to improve the writing characteristics of a paper you need sizing of paper. Until this was done with animal gelatine. This process was replaced with aluminium sulphate and rosin size. Around it became possible to use fibres from wood. The German Friedrich Gottlob developed a process to free the fibres out of wood with a grinding wheel. The development of alternative raw material sources was strengthened by the short supply of rags and at the same time increased demand for paper. Paper made from stone groundwood pulp had more yellowing due to the presence of lignin, so that quality paper was still produced from rags. At the end of the 19th century a bleaching process was developed in Scandinavia, which made it possible to remove lignin out of stone groundwood. The yellowing of paper decreased much due to this process, so that cotton fibres from rags lost its importance as raw material for paper. During the 20th century the technology behind the paper machine developed further, so that the production speed and the quality of the produced paper increased. The use of process control and measurement which started in the sixties made even further improvements possible. Around a further important development was made in the bleaching technology for fibres.

### 8: Formal Analysis Paper Examples - Department of Art and Design

*The history of Chinese writing is older than that of Chinese paper. Before the use of paper became widespread in the country, writers would write on bamboo or on pieces of silk. Silk was light weight and convenient, but extremely expensive.*

But in fact, paper has been made from wood only since the mids; up until the s, paper was made from recycled linen and cotton rags. When the paper industry was established in the United States, it was a recycling industry. As social needs have changed over the years, the composition of paper has also changed and has in turn fueled powerful social changes and development. In fact, some argue that the social, technical and economic progress of nations is inextricably linked to the production and use of paper. The invention of paper solved a pressing problem of the time. Back then, scrolls of silk were being used as books. But the development of calligraphy and the animal hair brush, and the resulting proliferation of literature, created the need for a writing material that was cheaper and more practical than pure silk. In fact, part of the Chinese ideogram character for "paper" means "silk. The Arabs got papermaking years later as one of the spoils of war. The Central Asian city of Samarkand was fighting the Chinese and captured a number of prisoners, two of whom were papermakers who were released in exchange for teaching the Arabs how to make paper. The Arabs wasted no time in improving papermaking techniques - they were probably the first to make paper from linen - and they spread the techniques throughout the Middle East and into Spain. The Christians who took over the Arab paper mills after driving the Moors from Spain were far less skillful and made inferior papers. And although trading cities such as Venice imported paper from the East and some mills in Italy produced outstanding rag papers, the rest of Europe was slow to embrace the new technology. Gutenberg printed several copies of his Bible on parchment; to print just one, he had to use the skins of sheep. So here was this grand new technology - the printing press - and no way to realize its potential, until entrepreneurs saved the day by improving and expanding the technology of making paper from linen rags. At first, paper was called "cloth parchment. A bookseller in the Middle Ages seldom had many ready-made books in his shop. If you were one of the fortunate few who could read, you most likely would go in and order a book to be copied down for you and pick it up several months later; or, if you were very ambitious, you would simply borrow the first few pages of the book, take them home and copy them down yourself. Imagine the confusion and disbelief when someone appeared with many copies of the same book. People were certain that the only explanation for this bizarre occurrence was that he was in league with the Devil. The lower cost of printing books on paper, and their subsequent availability, stimulated the foundation of new schools and universities. Because books were now more numerous, educational opportunities that were once restricted to the nobility and upper classes became more available to other classes in society, with dramatic increases in levels of education and literacy. When you change from an oral culture, where everything is communicated in stories and the spoken word, to a literate culture, where people get their information by reading, you change even such fundamentals as the process of thinking. The art world was also transformed by improvements in papermaking. Previously, artists had to practice their techniques and develop their drawing abilities on canvasses that they painted over and over again, so most paintings were actually lost - hidden under layers and layers of new paint. When paper became available as a cheap type of "canvas," artists could go wild practicing their sketching, and now these sketches could be saved. For the first time, drawing became an important art form in itself. As time went on, paper came into wider and wider use. The first paper mill in the United States was established in Philadelphia, and it was a recycled paper mill using rags to manufacture paper. Newspapers started appearing in the late s and early s. Newspapers, and the increased communication they offered, began to affect the conduct of government and commerce. Increased demand stretched the supply of rags to the limit until the shortage became so acute that there were actually "rag wars" during the mids. Nations passed laws forbidding rags to be taken out of the country - so, of course, rag smuggling became a lucrative profession. England even decreed that the dead could be buried only in wool; this was probably a move on the part of the wool manufacturers to protect their weakening industry, but it also served to save cotton and linen rags for

papermaking. Throughout the eighteenth century, there was an intense search in Europe and the U. Contests were held, universities offered prizes, and inventors and laboratories worked feverishly to come up with a new source for paper. Inventors would often print a book on their newly-invented paper that described how the paper was made. And so we ended up with books printed on paper made from asbestos, straw, swamp grass, marsh mallow, and esparto dune grass from certain beaches in Spain. The first patent for a paper using deinked waste paper as part of its fiber source was issued in London. It was not until the 1840s that the initial development of the papermaking machine in England and experiments in groundwood pulping in Germany and Nova Scotia enabled the commercial production of paper. The first groundwood pulp mill in the United States was established in Massachusetts. Experiments in chemical processes for preparing wood for papermaking took place during the 1790s and 1800s in Europe and America; commercial production of wood pulp by the sulphite process was achieved by 1847 in Ontario. Seemingly endless forests stretched forever. Trees grew everywhere, so a mill could be located just about anywhere as long as it was near a water source. Trees could be cut as they were needed, unlike fibers like straw which had to be stored in large volumes and which could then spoil. This breakthrough in papermaking technology fueled a huge expansion in business that eventually led to the development of the modern corporation, which was unable to function without tremendous supplies of paper. The paper industry in the 1800s created changes so far-reaching that it was one of the transformative factors in the development of the United States. Not the least revolutionary change was the astounding drop in newsprint prices that advances in papermaking technology afforded - newsprint prices that were 28 cents per pound in 1800 had plunged to two cents or less per pound by 1840. Companies were granted tax credits for resource depletion, and virgin resource industries were granted favorable freight rates. These incentives were successful in influencing the types and structure of investments and industries that were established; many of these incentives are still in effect. We live in a very different world today. Today we have water shortages - especially in the West. We suffer from air pollution, energy crises, depletion of natural resources. Perhaps the profligate use of natural resources made sense at the dawn of the 20th century, when developing the nation was a national goal. Perhaps it was reasonable in the 1800s to see trees as an unlimited fiber source, when the population was much smaller, there were fewer businesses, and paper was relatively limited in use. But those conditions clearly do not apply now. Fortunately, we have an alternative. Recycled paper saves enormous amounts of water and energy over virgin papermaking processes. It produces far less pollution. It cuts down on our solid waste. And it allows us to stop trashing resources and start treating our trash as a valuable resource. There are also increasing numbers of papers being made from annual crops or agricultural residues, bypassing the need to cut forests for paper altogether. We are again at a point of crisis. This time it is environmental. And again, it is paper that can lead us out of it. Papermaking technology has changed the development of society many times in the past. It can - and should - do it again now. This article, adapted from a speech given by Susan Kinsella at an environmental paper seminar at the National Press Building in Washington, DC, was first published in *Resource Recycling*, June 1990. Thomas Kinsella, Associate Professor of British Literature at The Richard Stockton College of New Jersey and a specialist in antique bookbindings, provided invaluable assistance with historical references and perspectives.

### 9: History of Paper - A Chinese Invention? | Learn Chinese History

*History of paper in Europe. Europeans were still using parchment, or buying paper at high prices from [www.enganchecubano.com](http://www.enganchecubano.com) that soon changed. By AD, Egyptian paper-making technology reached Italy, and the Italians made good paper and sold it all over Europe.*

We mostly take paper for granted but what would life be like without it? The origins of the word give us a clue to the origins of paper itself. Papyrus was made of reeds - which grew readily along the river Nile. Egyptian Papyrus Ancient Egyptian Papyrus was an early form of paper made from reeds that grew along the banks of the Nile. You can imagine that it was a very long and difficult process. The tablets were heavy and got broken easily, too. Sumerian Cuneiform Tablet A fragment of a Sumerian clay tablet with cuneiform script embedded into it. Before the invention of paper writing was difficult and not easy to transport. From the earliest times people have sort easier and more effective ways of writing things down and sharing information. Imagine what it was like before paper! So who invented paper and when? Ogham Stone An ancient Druid stone from Ireland, showing Ogham, an early form of writing composed of groups of straight lines. Before paper was invented, sending a letter would have been quite difficult! Source The Invention of Paper Archaeologists have discovered the earliest paper known to be used. It was made of cloth rags left over from the textile industry in early China and dates back to the first or second century AD. Nobody knows the name of the person who first invented it but it soon became very popular. It was light, smooth and could be written on in flowing ink. It could also be folded and rolled up. Suddenly it was possible not only to write quickly but to transport writing easily over long distances - never truly possible with large stones and clay tablets! The impact of paper was wide-reaching. The earliest known paper comes from the 2nd Century AD. Source The Spread of Paper By the fifth century AD, paper was being widely used in Japan - not only as a material for writing on, but also to make the inner walls of houses and works of art such as paintings and paper flowers. The art of origami which is the art of folding paper to make the shapes of animals, flowers and people, was invented in Japan at about this time. The use of paper spread rapidly throughout the rest of the world. In Asia and the Middle East, the quality of paper-making was improved by coating the rags in starch. This gave the finished paper a much smoother surface which was easier to write on. Japanese Paper Roses In Japan, paper has been used for centuries not just for writing on but for making things, such as these beautiful artificial roses. Source The Development of Paper The techniques for the manufacture and production of paper where developed significantly in Europe from the thirteenth century onwards. One very important development was the use of water wheels to power the paper-making process. In Spain and Italy, the paper mills were able to produce a lot of high quality paper very quickly. This made paper more readily available and cheaper to buy. Very soon after this, parchment and papyrus - which had still been in use - became a thing of the past. Johannes Gutenberg The first printing press was invented by Johannes Gutenberg. With the invention of printing, paper had finally come of age. He was a German goldsmith. The spread of the printed word led to the Renaissance in Europe - a period of history in which there was a flowering of learning, sciences and the arts. In , the first paper bank notes were printed - even money, once made of silver, gold or copper, was now made of paper! Paper Factory A modern Swedish paper factory. Source Modern Paper Making Paper was made out of textile fabric right up until the nineteenth century when there was a shortage of cotton. Everyone had become dependent on paper for almost everything from the bank to the bathroom and so the search was on for a new material to make paper from. One of the first experiments was with straw but it made a very poor quality product. Eventually, it was discovered that wood pulp could be used to make excellent paper. Modern paper is made in highly mechanized factories from wood pulp. Sustainable Paper Forest Most modern paper is made from sustainably managed forests and recycled materials. Source Paper and the Environment Given that paper uses up so much energy, water and of course, trees, new methods have been developed to help safeguard the environment. Paper can be recycled up to seven times before the fibres become too fragile. Modern paper-making also uses cereal straw in the mix to reduce the overall amount of cellulose from wood that is needed. This means that for every tree that is cut down, two or more are planted to replace them. The sorts of

trees that make the best paper, such as spruce and larch, are also very fast growing. In more and more forests the trees are never cut down at all.

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