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COUTURE_MODULE 3_WEAVING

CONCISE HISTORY



HISTORY OF WEAVING

Weaving is acknowledged as one of the oldest surviving crafts in the world.

- The art of weaving traces back to the Paleolithic era, about 30.000 to 20.000 years ago.
- Some theories state that the observation of bird nests suggested the idea of interlacing and, consequently, the invention of weaving.
- Early man developed the first string by twisting together plant fibers. Preparing thin bundles of plant material and stretching them out while twisting them together produced a fine string or thread.
- Even before the actual process of weaving was discovered, the basic principle of weaving was applied to interlace branches and twigs to create fences and shelters, and baskets for collecting goods and storing products.

<https://www.arch.cam.ac.uk/research/projects/archived-projects/origins-weaving-project>



HISTORY OF WEAVING

Initially, because of the difficult weather conditions, humans used animal skins and furs for their clothing and in their everyday lives' needs (tents, covers, etc.), which provided the best protection against the cold.

- The first evidence of a textile product is the carved bone figure of Venus wearing cloth in the form of a fringe of twisted strings of fibre, dating from about 20.000 B.C. (*Soffer, Adovasio, & Hyland, 2000*).
- The first proof of weaving is dated to around 7000 B.C. It comes from impressions of textiles stamped on two little clay balls found in Iraq.
- However, some theorists claim that it is impossible to tell with certainty the exact time that weaving started, mostly because of the fragile nature of the tools used and the easy deterioration of the products.

<https://www.arch.cam.ac.uk/research/projects/archived-projects/origins-weaving-project>



HISTORY OF WEAVING

- Research has identified the use of particular plants (sedges, nettles, birch and lime bast) in weaving, and the production of basketry, cords and nets. Gradually, the use of plant fibres within the native environment and the animals provided the main source of clothing.
- Moreover, archaeological evidence points to a general diffusion of weaving and spinning that suggests a knowledge of natural and vegetable fibers.
- Stone Age man's early experiments with string and thread led to the first woven textiles. Eventually, people developed great skill in weaving cloth.
- Every household produced cloth for their own needs. Weaving cloth remained an activity associated with the family unit for thousands of years.

http://www.smithsonianeducation.org/educators/lesson_plans/spinning_yarns/ATZ_SpinningYarns_Sep1980.pdf



HISTORY OF WEAVING

- Textile making involved:
 - a) the selection of an appropriate natural fibre (e.g., from plants or animals),
 - b) the harvesting and spinning of fibres into thread or yarn,
 - c) the weaving (or knitting) of clothes.



HISTORY OF WEAVING

- Stone Age people wove nets, baskets, mats, and belts out of reeds, grasses, and strips of animal skins. This led to the creation of textiles that served as clothing.
- Textiles were also used as rugs and blankets to line drafty dwellings and to cover dirt and stone floors.
- Later, textiles were also used in the form of flags, banners, and nonutilitarian items of clothing (e.g., ceremonial robes), bearing symbols of state or leadership.
- Ancient textiles were made mostly of linen, cotton, wool, and silk.
- As civilizations developed, the fibres and the different methods and patterns invented for weaving traveled to different parts of the world, resulting in various ideas and knowledge being exchanged among people and cultures.



HISTORY OF WEAVING

- In Jarmo, in northeast Iraq, there is evidence of woven cloth circa 7000 B.C., while in Nahal Hemar, in the Judean desert, there is proof of woven cloth circa 6500 B.C.
- Fragments of simple linen burial cloths prove that weaving with flax existed circa 6000 B.C. in Çatal Hüyük, a site of a Neolithic city in the Konya region of Anatolia. In the same ancient city, loom weights have been found, dated even earlier, around 7000 B.C.
- Other evidence from Mesolithic and Paleolithic eras are impressions recovered in sites in Eastern Europe. Sometimes microscopic amounts of fibre remains were found in the material containing the impressions.

Good, 2001



HISTORY OF WEAVING

- The development of weaving forms constitutes the '*human revolution*' in the Palaeolithic era.
- Clothing depicted on the so-called 'Venus' figurines found across Palaeolithic Eurasia, as well as clay fragments with the imprints of textiles, demonstrated the use of plant material in the production of items such as skirts, belts, hats, bandeau, bands, and necklaces.
- The presence of weaving tools used in textile production at particular locations in Palaeolithic sites on the Russian Plain indicated specific activity areas related to weaving.
- Imprints on clay, carvings on figurines and these tools constitute the first physical evidence of weaving.

(Demeshenko, 2006; Soffer et al., 2000)



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HISTORY OF WEAVING

Venus Figurine

Soffer et al., 2000





HISTORY OF WEAVING

- In ancient Mesopotamia, in Asia, women were very skilled spinners and weavers. Women weaved rectangle of clothes, large enough to cover the body.
- Men also participated in the weaving process, as they dyed the fibres and did the finishing of the fabrics.
- Wool was the most common fabric found in Mesopotamia.
- The woven clothes are depicted in statues of people found from that era.



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HISTORY OF WEAVING

Standing female worshiper
Sumerian, Early Dynastic IIIa
(ca. 2600-2500 B.C.)

Limestone, inlaid with shell and lapis lazuli

The Metropolitan Museum of Art, New York
Rogers Fund, 1962 (62.70.2)



<https://www.metmuseum.org/blogs/collection-insights/2020/art-for-resilience>



HISTORY OF WEAVING

- Some of the oldest textile finds are fragments found in the tombs of ancient Egypt. These textiles have been preserved thanks to the dry climate and the sand of the Sahara Desert.
- Textile production formed an important function in ancient Egypt, in both religion and commerce. Developments in agriculture contributed to the advancement of the textile production.
- The importance of the textile tradition in ancient Egypt is also confirmed by the discovery of the representation of a loom on a terracotta plate, dating back to 4400 B.C., and by a horizontal loom on the ground that first appeared around 3000 B.C.

<https://www.arch.cam.ac.uk/research/projects/archived-projects/origins-weaving-project>



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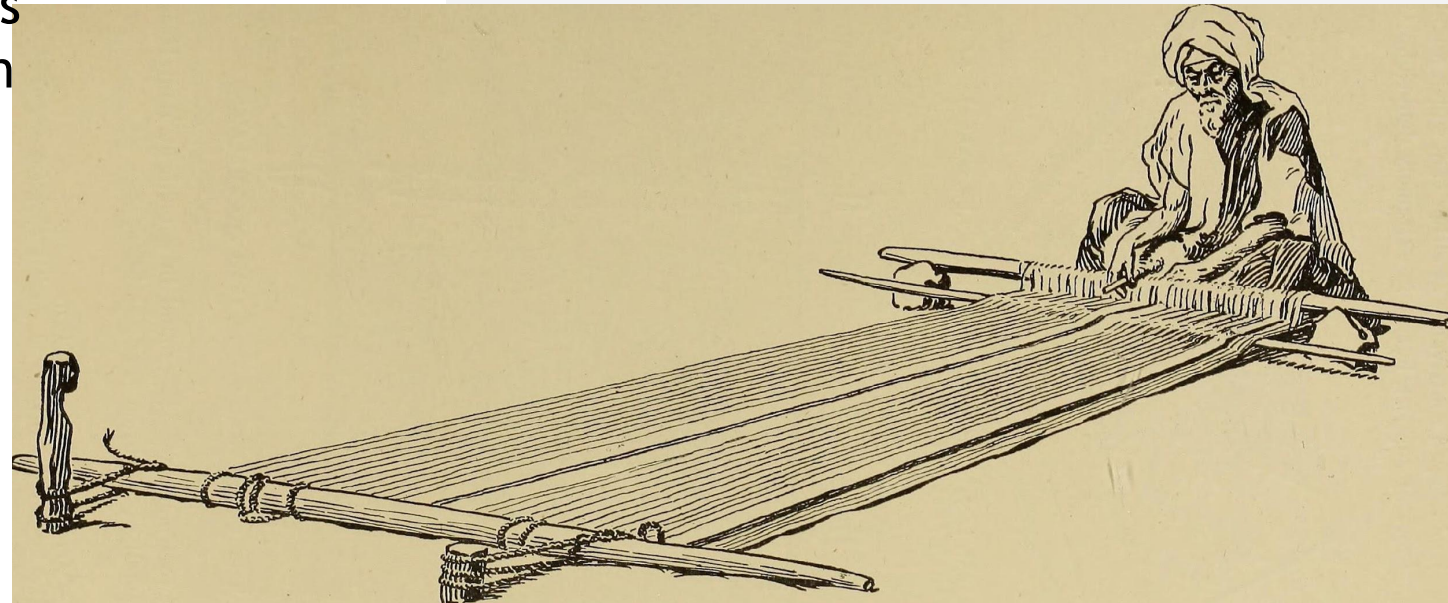


HISTORY OF WEAVING

The horizontal loom, known as early as the Neolithic period, is the oldest type of loom used in Egypt.

In this loom, the warp is mounted horizontally between two beams and is held in tension by pegs in the ground.

The weaver kneels and has to move forward as the fabric progresses, either sitting beside the tissue, or perhaps on it
(Mossakowska-Gaubert, 2020)



<https://www.artemorbida.com/brief-history-of-weaving/?lang=en>



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HISTORY OF WEAVING

Prehistoric Horizontal Loom

<https://www.youtube.com/watch?v=ZqffpRu3K-g>



HISTORY OF WEAVING

- The Egyptians were distinguished by their ability to spin and then weave linen.
- Flax weavings are found in Fayum, Egypt, dating from around 5000 B.C. First popular fiber in ancient Egypt was flax, which was replaced by wool around 2000 B.C.
- Dyeing techniques also improved.
- Batik, a wax-resistant dye on fabrics was used in Egypt in the 4th century B.C.
- Egyptians used the batik technique on textiles created to wrap mummies.
- Batik is a technique that uses hot dye-resistant wax to “draw” patterns and designs on cloth. When the wax cools, the cloth is immersed in the dye. Afterwards, the dyed piece of cloth is placed in boiling water to remove the wax. Irregular patterns of crackles are formed when the wax is cooling off, and these appear as part of the design. These irregular crackles are unique in design.

<https://www.arch.cam.ac.uk/research/projects/archived-projects/origins-weaving-project>



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HISTORY OF WEAVING

The story of Batik

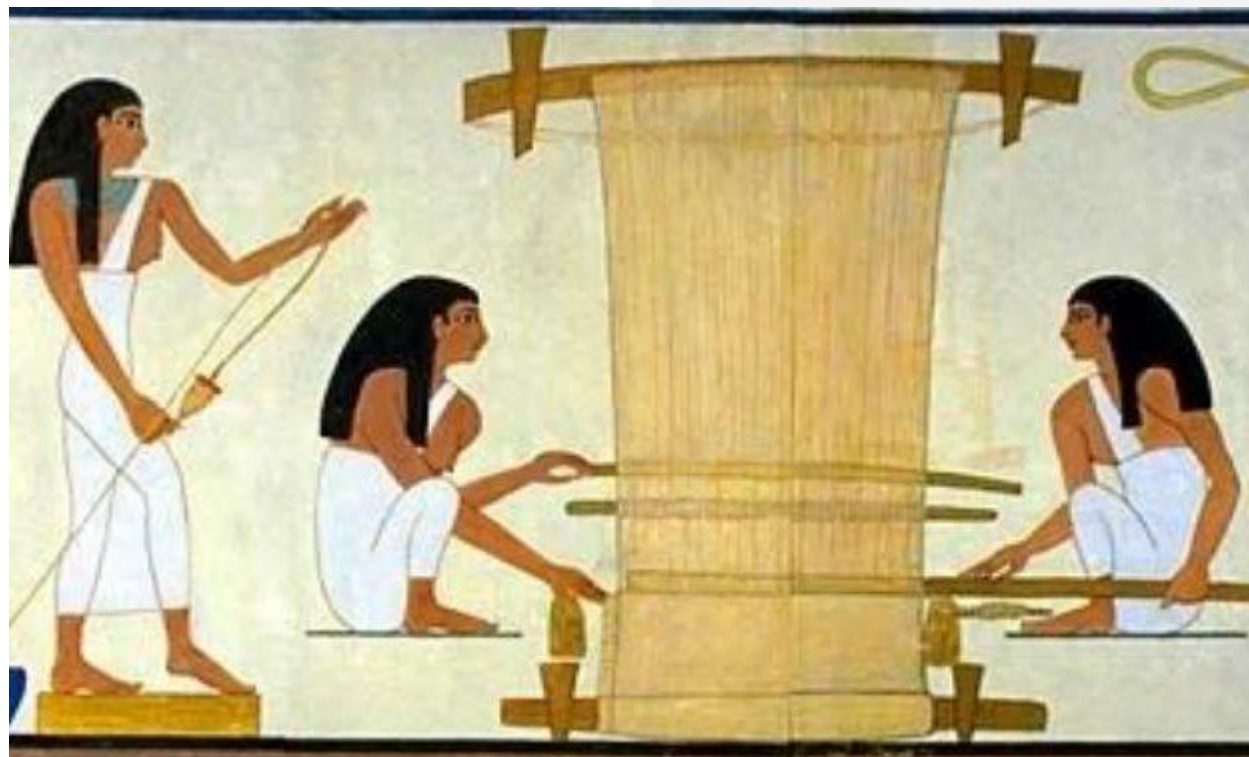
<https://www.facebook.com/magicalartbyhumanhand/videos/379948893151169/>



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HISTORY OF WEAVING



<https://www.egypttoday.com/Article/4/89664/What-you-may-not-know-about-types-of-Linen-Fabrics>



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HISTORY OF WEAVING

Demonstration of the Ancient Weaving Loom

<https://www.youtube.com/watch?v=KPqnA-bxk2I>



HISTORY OF WEAVING

- Early looms need one or two persons to work on them.
- By 700 A.D., horizontal and vertical looms could be found in Asia, Africa and Europe.
- At that time also appeared pit-treadle loom with pedals for operating heddles. That kind of loom first appeared in Syria, Iran and Islamic parts of East Africa.
- Many religions acknowledge the importance of weaving.
- Bible refers to loom and weaving in many places.
- Faithful were required by Islam to be covered from neck to ankle which increased the demand for cloth.
- Finally, in Africa, the rich wore cotton clothing while the poorer had to wear wool.



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HISTORY OF WEAVING

The “campstool fresco”
Partially restored fresco
from Knossos

<https://giacobbegiusti9.wordpress.com/category/national-archaeological-museum-athens/>





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HISTORY OF WEAVING

The “Prince of Lilies”, fresco,
Minoan civilisation, Knossos
(1550-1450 B.C.)
Reconstruction with the original
pieces – Heraklion
Archaeological Museum

<https://giacobbegiusti9.wordpress.com/category/national-archaeological-museum-athens/>





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HISTORY OF WEAVING

Boxing Boys (possibly girls) and
Gazelles
Frescos from Akrotiri, Thera Island
(Santorini)

National Archaeological Museum of Athens

https://en.wikipedia.org/wiki/Wall_Paintings_of_Thera





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HISTORY OF WEAVING

Shaffron gatherer
Fresco from Akrotiri, Thera Island
(Santorini)

https://en.wikipedia.org/wiki/Wall_Paintings_of_Thera

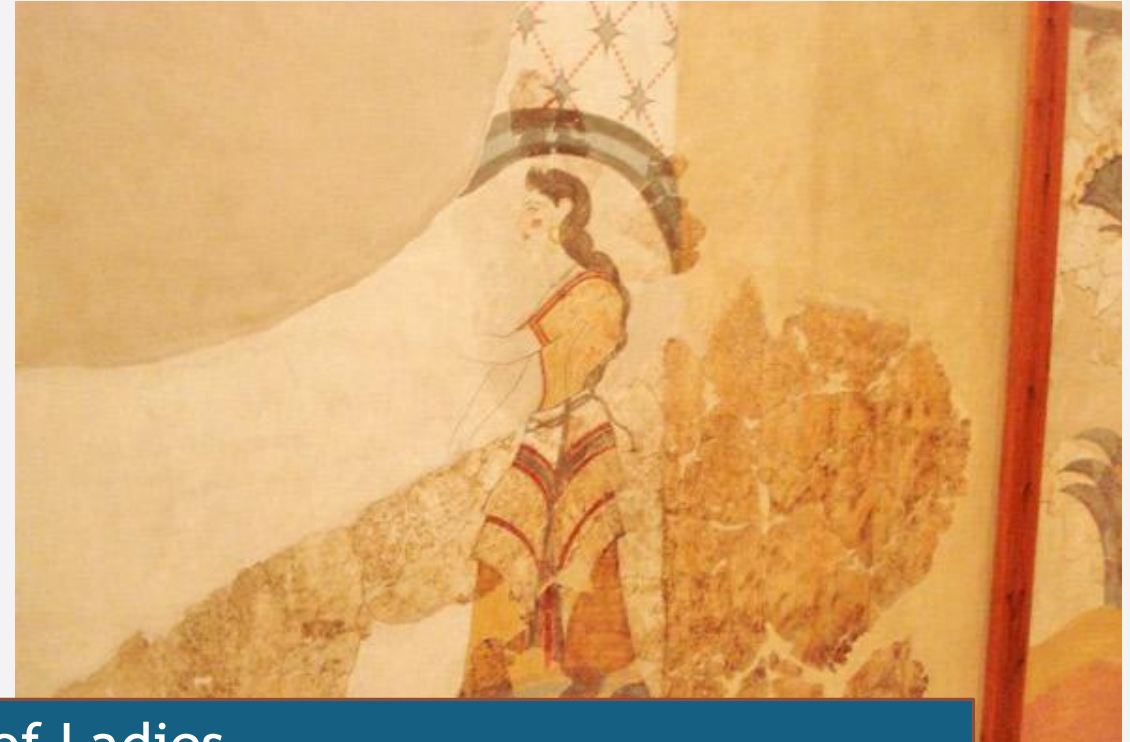




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HISTORY OF WEAVING



House of Ladies
Fresco from Akrotiri, Thera Island (Santorini)
Circa 1700 B.C.

Museum of Prehistoric Thera, Santorini

<http://www.fira-santorini.com/prehistoric-thera-museum-photos.html>



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HISTORY OF WEAVING

Marble funerary statues of
a maiden and a little girl
(Athens)
(ca. 320 B.C.)

The Metropolitan Museum of Art
New York

<https://www.metmuseum.org/art/collection/search/254508>





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HISTORY OF WEAVING

Statue of Peplos Kore
Athens (circa 530 B.C.)
Acropolis Museum

<https://theacropolismuseum.gr/en/statue-kore-peplos-kore>





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HISTORY OF WEAVING



Left: One of the six original Caryatids, stolen by Lord Elgin (early 19th century) from the Erechtheion Athens, displayed at the British Museum

Right: Copies of Caryatids displayed at the Acropolis Museum, Athens and at the Erechtheion, Athens

<https://en.wikipedia.org/wiki/Caryatid>





THE EVOLUTION OF WEAVING

- Weaving was an important tradition for women in every part and civilisation of Ancient Greece. Textiles were extremely valuable and spinning and weaving of wool and flax were not only necessary skills for a woman to possess, but also highly respected skills.
- In the Mycenaean Culture weaving produced one of the major exports and women who could weave were in high demand. Weaving was also an occupation of the ladies of the highest status.
- Generally, in Ancient Greece, the art of weaving and the creation of textiles related to women and their home, called 'oikos', as it is often presented in iconography. Thus, there are several scenes depicting women spinning and weaving on the loom.
- In his book *Oeconomicus*, the historian Xenophon has his character, Isomakhos, explain the running of the ideal household to his young wife. The ideal wife is likened to a queen bee. She is to teach slave women how to spin and how to weave by standing in front of the loom herself.



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THE EVOLUTION OF WEAVING

A blackfigure Attic plaque dated to the 6th century BC depicts a woman weaving at a horizontal loom while a girl sits and plays behind her

National Archaeological Museum,
Athens





THE EVOLUTION OF WEAVING

- For an Athenian citizen woman, weaving was simultaneously the mark of a good wife, a religious duty, a domestic responsibility, her traditional role, and, of course, a contribution to the oikos.
- However, relatively recent studies suggest that professional men in commerce also participated in the manufacture of textiles.
- Based on written sources from the 5th and 4th centuries B.C., it could be suggested that there were two different “spheres” of activity: at home and in the workshops.
- At home, only women, both free and slaves, were involved in every stage of textile production, from the preparation of the raw materials to the tailoring of garments, while in the workshops, men were responsible for the textile production.

Spantidaki, 2016



THE EVOLUTION OF WEAVING

- Textile production was a vital part of the Roman economy. Textiles were professionally manufactured and exported throughout the Mediterranean world.
- Women in Rome were involved in the last phases of the textile process, while the men were responsible for the more physically demanding jobs.
- The carding, combing, spinning and weaving of wool were part of daily housekeeping for most women.
- Women of middle or low income could supplement their personal or family income by spinning and selling yarn, or by weaving fabric for sale.

Wilson & Flohr, 2016



THE EVOLUTION OF WEAVING

- Iconographic and epigraphic inscriptions mention that spinners were mainly women. They could also be involved in the sales of the textiles.
- Men were usually the wool-weighers in charge of weighing the daily amount of wool given out.
- This is demonstrated on a wall painting at the entrance of a shop in Pompeii. The wall painting depicts a woman selling textiles to a customer and managing the shop on the left side of the entrance, and men working with textiles on the right side

Wilson & Flohr, 2016



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THE EVOLUTION OF WEAVING



Pompeii, workshop IX 7, 7, painting on left side of the entrance showing women selling textiles (Soprintendenza Archeologica di Pompei)



Pompeii workshop IX 7, 7, painting on right side of the showing men in the production of textiles (Soprintendenza Archeologica di Pompei)



THE EVOLUTION OF WEAVING

- Clothing in ancient Rome generally comprised a short-sleeved or sleeveless, knee-length tunic for men and boys, and a longer, usually sleeved tunic for women and girls.
- Most clothing was simple in form and its production required minimal cutting and tailoring, but all was produced by hand and every process required skill, knowledge and time.
- Spinning and weaving were thought virtuous occupations for Roman women of all classes. Wealthy matrons, including Augustus' wife Livia, might show their traditionalist values by producing home-spun clothing, but most men and women who could afford to buy their clothing from specialist artisans.
- High-caste brides were expected to make their own wedding garments, using a traditional vertical loom.

Gleba & Pásztoókai-Szeőke, 2013; Sebesta & Bonfante, 1994



THE EVOLUTION OF WEAVING

- The manufacture and trade of clothing and the supply of its raw materials made an important contribution to Rome's economy.
- Relative to the overall basic cost of living, even simple clothing was expensive, and was recycled many times down the social scale.
- Quite often, laws were passed designed to limit public displays of personal wealth. However, they were not particularly successful, as the wealthy elite loved luxurious and fashionable clothing.
- Exotic fabrics were available, at a price; silk damasks, translucent gauzes, cloth of gold, and intricate embroideries. Vivid, expensive dyes, such as saffron yellow or Tyrian purple were used.
- Not all dyes were costly, and most Romans wore colourful clothing. Clean, bright clothing was a mark of respectability and status among all social classes.
- The fastenings and brooches used to secure garments, such as cloaks, provided further opportunities for personal embellishment and display.

Gleba & Pásztkai-Szeőke, 2013; Sebesta & Bonfante, 1994



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THE EVOLUTION OF WEAVING

A maenad wearing a silk gown.
A Roman fresco from the Casa del
Naviglio in Pompeii, 1st century AD

Sebesta & Bonfante, 1994





THE EVOLUTION OF WEAVING

- As the Roman empire dissolved around the 4th century A.D., emperor Constantine the Great consolidated power in Byzantium, creating the Byzantine Empire, with Constantinople as its capital. For centuries, Constantinople was famous for its power, its wealth, and especially its clothing.
- Constantinople was located on the eastern edge of the Mediterranean region, situated at the crossroads of Europe, Asia, and the Middle East. As a result, it controlled some of the most important trade networks in the world and became extraordinarily wealthy.
- Visitors to Constantinople often remarked on the finery of everyone's clothes that were made from the finest silks and coloured with purples and golds, colors traditionally reserved for royalty.

<https://study.com/academy/lesson/byzantine-textiles-characteristics-history.html>



THE EVOLUTION OF WEAVING

- Textiles were highly deemed by the Byzantines. Thus, large amounts of money was invested in the textile industry.
- Byzantines considered textiles to be a form of high art, such as painting, architecture, and sculpture.
- Textiles were used by the wealthy to display their status. Many textiles followed the conventions of Byzantine paintings and mosaics as well, characterized by flat gold backgrounds and bold lines.
- Amongst the greatest patrons of textiles was the Church. The Byzantine Church, later called the Greek Orthodox Church, was incredibly rich and powerful. Priests and churches were often decorated by elaborate textiles with religious images. Most of the Byzantine textiles that have survived to the present are liturgical garments used in Church rituals.

<https://study.com/academy/lesson/byzantine-textiles-characteristics-history.html>



THE EVOLUTION OF WEAVING

- Byzantine textiles were woven, created on specialized looms that were adopted from Asia.
- The most luxurious textiles, and those that really defined Byzantine wealth, were woven with silk.
- For a long time, the Chinese controlled the secrets to silk production, and the Byzantines had to purchase the raw silk from China. Around the 6th century, Byzantine monks sent by the emperor Justinian managed to smuggle silk-worm eggs out of China.
- By the 7th century, the Byzantines could produce their own silk and refined the technique to match their own needs.
- From the paintings, we can see that Byzantine textiles had vibrant colours, such as red, blue, orange and purple. This shows a highly developed control of the dye processes and procedures, that used only plant dyes.

<https://nazmiyalantiquerugs.com/blog/antique-byzantine-art-textiles/#:~:text=Antique%20Artistic%20Byzantine%20Textiles%20It%20is%20easy%20to,developed%20control%20of%20the%20dye%20processes%20and%20procedures.>



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THE EVOLUTION OF WEAVING

The mosaic of Emperor
Justinian and his
retinue. 526-547.
Mosaic, Ravenna, Italy:
San Vitale Basilica.



<https://fashionhistory.fitnyc.edu/tablion/>



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THE EVOLUTION OF WEAVING

A 14th-century icon.
The martyr wears four
layers, all patterned and
richly trimmed: a cloak
with tablion over a short
dalmatic, another layer,
and a tunic

https://en.wikipedia.org/wiki/Byzantine_dress





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THE EVOLUTION OF WEAVING

Archibishop's Garment
Red silk (exterior surface) and
linen (interior surface) -
Embroidered figures of saints,
prophets, Virgin Mary, and Christ

Byzantine and Christian
Museum, Athens

<https://www.ebyzantinemuseum.gr/?i=bxm.el.exhibit&id=201>





THE EVOLUTION OF WEAVING

- In the early Middle Ages, most weaving was done at home for the family's own use.
- In the late Middle Ages, most weaving was commercial, carried out as a full-time craft by professionals.
- The loom, mostly used across Europe, until the 12th century, was the vertical frame loom. It could weave a piece of cloth as large as the frame.
- Textiles for clothing and other necessities, as well as cultural tradition, varied across the centuries of the Middle Ages and the countries of Europe.

<https://www.thoughtco.com/medieval-clothing-and-fabrics-1788613>



THE EVOLUTION OF WEAVING

- Various fabrics, such as taffeta, velvet, and damask were made from textiles like silk, cotton, and linen using specific weaving techniques.
- There are exceedingly few garments surviving from the Middle Ages. Statues, paintings, manuscripts, tomb effigies, and tapestries depict the medieval clothing.
- Clothing was the easiest way to identify someone's status and station in life. Throughout the medieval era, but especially in the later Middle Ages, laws were passed to regulate what could and could not be worn by members of different social classes.

<https://www.thoughtco.com/medieval-clothing-and-fabrics-1788613>



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THE EVOLUTION OF WEAVING

A loom with four pedals, from the 15th century

Mendel Foundation Housebook,
Nuremberg

<https://medievalshroud.com/the-medieval-weave/>





THE EVOLUTION OF WEAVING

- Dyes came from a lot of different natural sources, such as plants, roots, lichen, tree bark, nuts, mollusks, iron oxide, etc. Some of them were very expensive, raising the price of the textiles. Thus, clothing made from an undyed fabric in various shades of beige and off-white was not uncommon among the poorest folk.
- A dyed fabric would fade fairly quickly if it wasn't mixed with a mordant, and bolder shades required either longer dyeing times or more expensive dyes. Thus, the fabrics with the brightest and richest colors cost more and were, therefore, most often found on the nobility and the very rich.
- One natural dye that did not require a mordant was *woad*, a flowering plant that yielded a dark blue dye. Woad was used so extensively in both professional and home dyeing that it became known as "Dyer's Woad," and garments of a variety of blue shades could be found on people of virtually every level of society.

<https://www.thoughtco.com/medieval-clothing-and-fabrics-1788613>



THE EVOLUTION OF WEAVING

- In the Middle Ages, the thriving textile and weaving trade resulted in the creation of more jobs and the development of corresponding guilds.
- Workers in the cloth trade were:
 - ✓ Dyers - who dyed threads and textiles
 - ✓ Spinners - who spun (e.g., the woolen fleece into yarn)
 - ✓ Weavers - who wove the threads into lengths of cloth
 - ✓ Fullers - who washed and stretched the finished fabric
 - ✓ Drapers - who sold woven fabrics
 - ✓ Tailors - who made the fabric into clothes
- Workers would take the name of their trade. Thus, in the United Kingdom, Weaver, Fuller, Taylor, and Draper are typical surnames that have survived into modern times, even though people no longer work in the old trades.



THE EVOLUTION OF WEAVING

- **Tapestries** were always present in the castles and churches of the late medieval and Renaissance eras. They provided a form of insulation and decoration that could be easily transported.
- The process of tapestry weaving enabled the creation of complex figurative images. While much production was relatively coarse, intended for decorative purposes, wealthy patrons could commission specific designs, enriched with silk and gilt metallic threads.
- From the early fourteenth century, workshops producing simple, small-scale figurative tapestries flourished.
- However, in the towns of northern France and in the Low Countries, bigger workshops, with skilled weavers and dyers, produced large amounts of high-quality tapestries and exported them throughout Europe.



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THE EVOLUTION OF WEAVING

Tapestry with the Annunciation
ca. 1410-20

South Netherlandish
Wool warp, wool with a few metallic wefts



<https://www.metmuseum.org/art/collection/search/468106>



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THE EVOLUTION OF WEAVING

Fragment of a Tapestry or Wall
Hanging ca. 1420-1430
The Cloisters Collection, 1990

Made in Basel, Switzerland
Tapestry weave: wool on linen



<https://www.metmuseum.org/art/collection/search/466178>



THE EVOLUTION OF WEAVING

- During the 17th century, the trade increased between different countries, resulting in the exchange of different textiles and patterns between cultures.
- For example, the textile industry in the United Kingdom, was influenced by the Asian traditions (e.g., the coloured patterns from India).
- In France, woven silk and velvet textiles were in high demand by the nobility. Lyon in France became the centre of luxurious silk textile production.
- In 1685, after the religious truce, called *the Edict of Nantes*, many French Protestants left France for England, Germany, and the Netherlands, taking the knowledge of weaving silk textiles with them.
- Along with the weaving tradition, European textiles were recognised for their lace and embroidery. Slippers, purses, handkerchiefs, and chemises were a few of the embroidered goods made popular throughout Europe. Sometimes, weavers cut slashes in cloth and sewed in buttons as decoration.



THE EVOLUTION OF WEAVING

- Before the Industrial Revolution, textile merchants contracted out work to local workshops or women who weaved at home. Textiles and clothing were produced on a relatively small-scale and then sold to the public through merchants. As a result, every piece of clothing was different and unique.
- As the industrial revolution approached, the production and use of manufactured goods changed. Weaving was forced to respond to large-scale production demands. Thus, there was a need for a speeding-up of weaving process by trying to mechanize the action of the loom.



THE EVOLUTION OF WEAVING

- Throughout the 18th century, certain inventions made textile production more efficient.
- In 1733, an Englishman from Bury, John Kay, patented the *Flying Shuttle*, a device used for weaving yarn together to make wider fabric. A fly shuttle is a long, narrow canoe-shaped instrument, usually made of wood, which holds the bobbin. Its invention significantly increased the output of textiles from yarn, especially once it was converted into an automatic, mechanized loom.
- In 1764 James Hargreaves invented the *Spinning Jenny*, a machine used to produce yarn from fibers. The Spinning Jenny was the first practical spinning device containing multiple spindles.
- By the 1780s, power looms were remarkably advanced. They could produce more fabric than a single individual could just a few decades before. At that time, looms were powered by water and steam. High quality, durable clothing could be mass produced, and was made increasingly affordable to the middle class.



THE EVOLUTION OF WEAVING

John Kay and his invention, the Flying Shuttle.

A fly shuttle is a long, narrow canoe-shaped instrument, usually made of wood, which holds the bobbin.

<https://www.historycrunch.com/flying-shuttle-invention-in-the-industrial-revolution.html#/>



John Kay



Flying Shuttle



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THE EVOLUTION OF WEAVING

James Hargreaves
invented the
Spinning Jenny.

The Spinning Jenny
was a spinning
device containing
multiple spindles.



<https://www.gettyimages.it/immagine/james-hargreaves-spinning-jenny>



THE EVOLUTION OF WEAVING

- The first factories for weaving were built in 1785. **Industrial revolution switched weaving from hand to machine.**
- Jacquard loom was invented in about 1803. It could be programmed with punch cards which enabled faster weaving of complicated patterns. Jacquard built a weaving machine to be applied to the loom, which allowed the automatic movement of the single warp threads by means of a perforated card.
- The Jacquard loom is the most important invention in the textile sector, because it allows the production of very complex fabrics; it reduces the need for manpower because it replaces the heddles, originally the weaver had to be assisted by a helper, who had to manually move the heddles.



THE EVOLUTION OF WEAVING

- Despite being innovative, the new Jacquard loom was not well received. Its spread was long opposed by the weavers themselves for fear of losing their jobs, and even the Council of the City of Lyon ordered its destruction.
- However, by 1812 there were already 11,000 Jacquard looms in operation in France; ten years later, it was widespread in most of the world: England, Italy, Germany, America, and even China.
- White fabrics were printed mechanically with natural dyes at first with synthetic dyes coming in the second half of the 19th century.

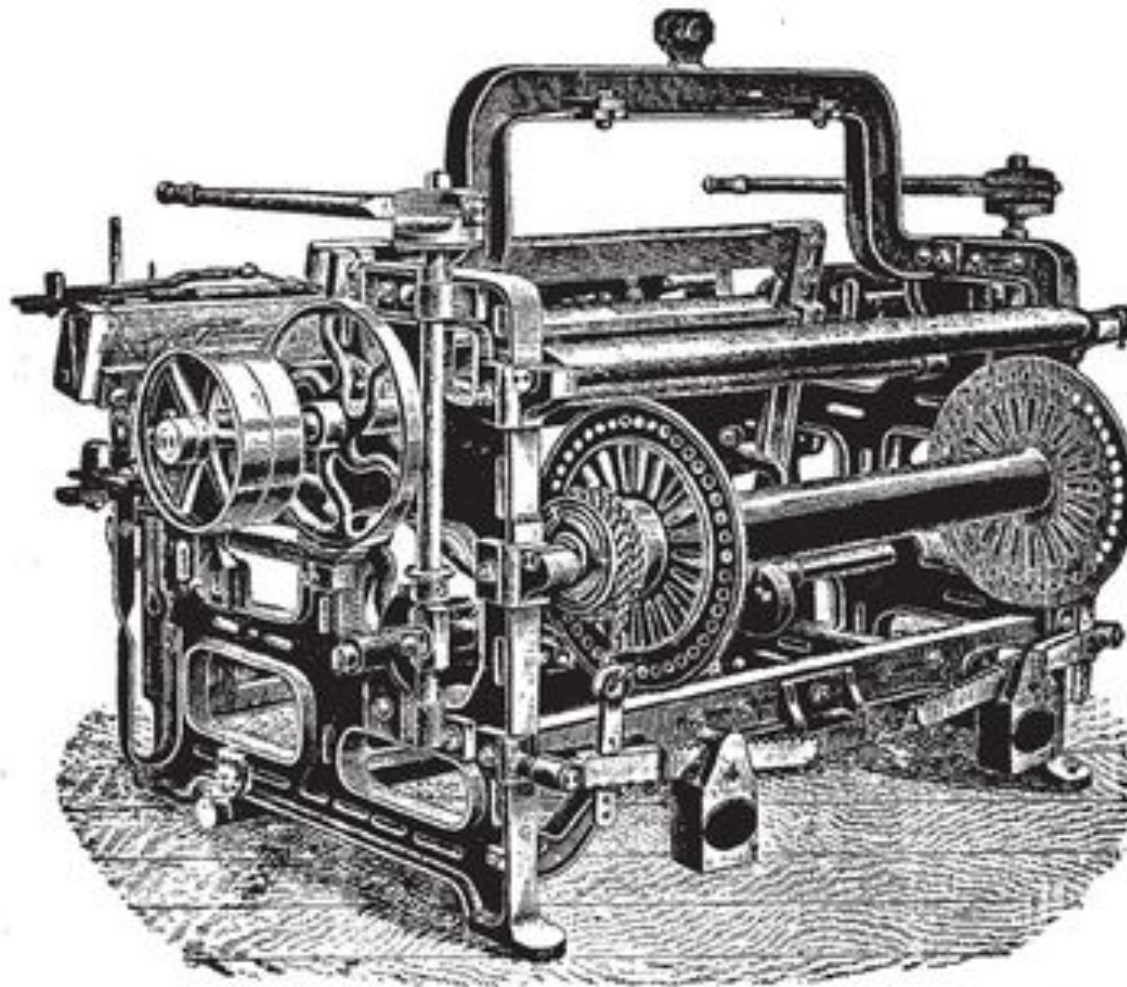


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THE EVOLUTION OF WEAVING

Power Loom -
Industrial
Revolution



<https://industrialrevolutioninventions7.weebly.com/power-loom.html>



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THE EVOLUTION OF WEAVING



<https://www.artemorbida.com/brief-history-of-weaving/?lang=en>



THE EVOLUTION OF WEAVING

- Early textile innovations quickly spread to North America. The man that played a particularly significant role in this transmission was Samuel Slater (1768-1835), known as the 'Father of the American Industrial Revolution', because he brought British textile technology to the United States. As there were laws forbidding the exportation of British textile machines, British-born Slater memorized the designs and workings of textile machines and immigrated to the United States where he replicated these technologies. Because of this, he was regarded by the British as 'Slater the Traitor.'



THE EVOLUTION OF WEAVING

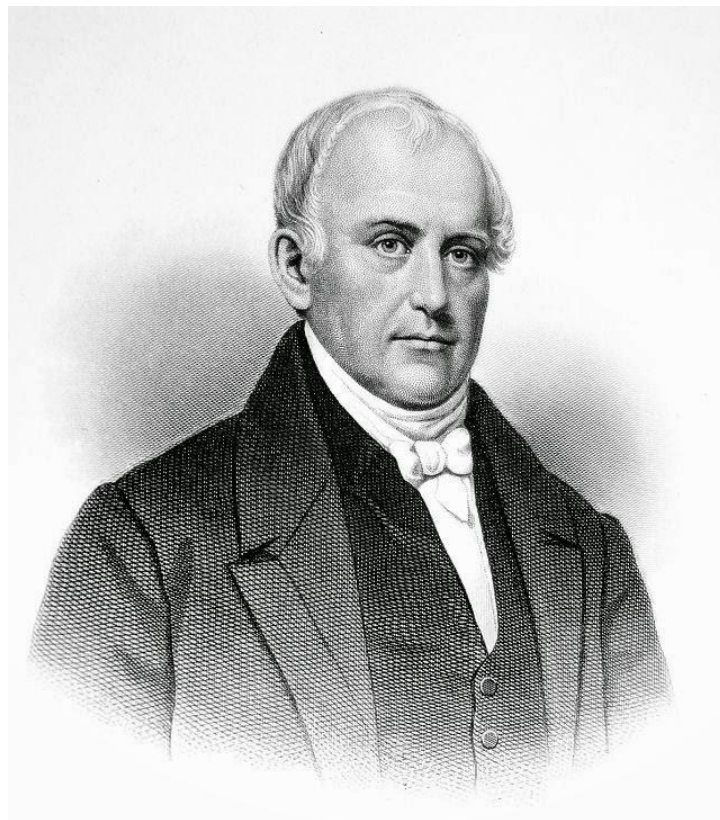
- Slater set up a mill in Rhode Island in the 1790s, creating what has come to be known as the 'Rhode Island System.' This system was modeled on traditional New England family life, and whole families worked together at the mill.
- In the early 1800s, New England was the center of American textile manufacturing. Many mills were located along waterways. In many cases, textile mills developed into full-fledged towns as schools and other social institutions were built nearby.



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THE EVOLUTION OF WEAVING



Samuel Slater
Father of the American Industrial Revolution

<https://searchinginhistory.blogspot.com/2015/01/samuel-slater-father-of-american.html>





THE EVOLUTION OF WEAVING

- The technological innovations in cloth production made during the Industrial Revolution dramatically changed the role of the weaver. Large volumes of inexpensive cloth were now readily available. Weaving had been changed to a manufacturing industry. Textile workers were among the founders of the modern labour movements.
- Today most of our textile needs are supplied by commercially woven cloth. A large and complex cloth making industry uses automated machines to produce our textiles.
- Although nowadays weaving has become a mechanized process, there are still people who practice hand weaving. There are artisans making cloth on hand looms, in home studios or small weaving businesses, who keep alive the skills and traditions of the early weavers.
- Textile weaving is almost as old as civilization itself, and it is still practiced around the globe.



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THE EVOLUTION OF WEAVING

From wool to woven textile - video

<http://eprl.korinthos.uop.gr/openwebquest/view/resources.php?wq=1295>



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THE EVOLUTION OF WEAVING

Loom tradition in Crete – video
<https://www.youtube.com/watch?v=3KgTh8Vs6IA>



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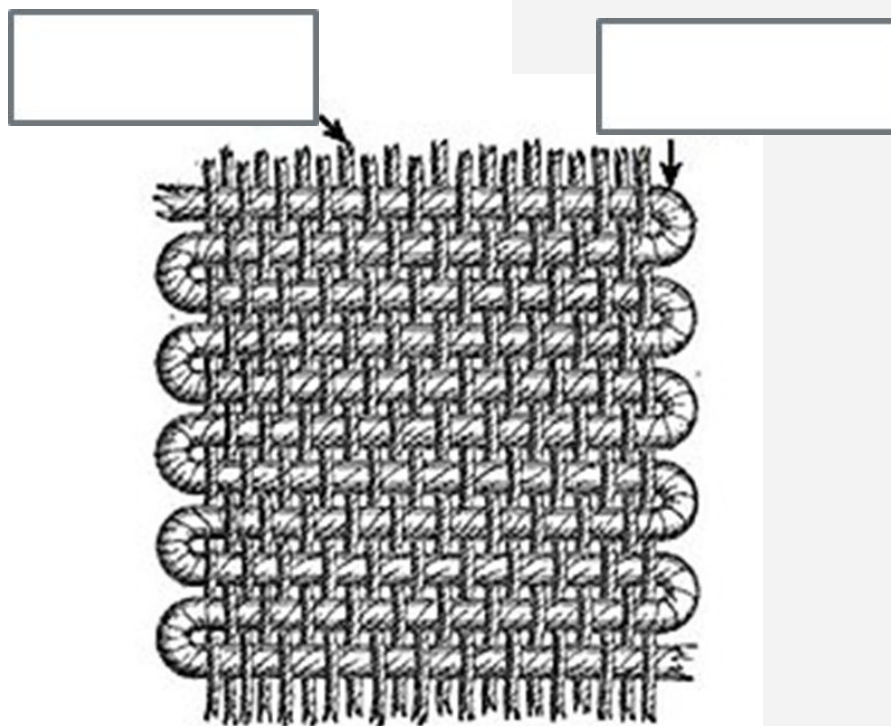


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Time for questions... (EXAMPLES TO BE MODIFIED SOON...)

1. Can you identify the warp and the weft in the following picture?





2. Write the missing words and complete the following sentences:

- ✓ Observation of _____ gave early man the idea of weaving, as weaving is essentially interweaving fibers to create fabric.
- ✓ But even before the actual process of weaving was discovered, the basic principle of weaving was applied to interlace branches and twigs to create _____ for protection, and _____ for collecting goods and storing products.
- ✓ Some theorists claim that it is not possible to tell with certainty the exact time that weaving started, mostly because of the fragile nature of the _____ used and the easy deterioration of the _____.



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3. Could you name some of the uses of the weaved textiles from the antiquity to the most recent years?



<https://www.britannica.com/technology/loom>



- ☉ Why are there few archaeological finds regarding textiles and weaving tools?
- ☉ Which are the two most common forms of archaeological textile preservation?
- ☉ As there are few finds in the archaeological excavations, where do we get the information regarding the textiles and the clothes used in past eras?
- ☉ Could you name some weaving tools?



- 🌀 Could you name the stages of the textile production? Can you name some tools according to each stage?
- 🌀 Could you describe the woven textiles and the clothing in the Roman and the Byzantine Empire?
- 🌀 What do you remember about the tapestry?
- 🌀 Can you name some European countries that are known for their textile production?
- 🌀 Can you name some of the inventions that made textile manufacturing more efficient?