The development of
MEDIEVAL ARMOR
over time

WORCESTER ART MUSEUM
ARMS & ARMOR PRESENTATION
In 2014, the Worcester Art Museum acquired the John Woodman Higgins Collection of Arms and Armor, the second largest collection of its kind in the United States. John Woodman Higgins was a Worcester-born industrialist who owned Worcester Pressed Steel. He purchased objects for the collection between the 1920s and 1950s.
Introduction to Armor

This German engraving on paper from the 1500s shows the classic image of a knight fully dressed in a suit of armor. Literature from the Middle Ages (or “Medieval,” i.e., the 5th through 15th centuries) was full of stories featuring knights—like those of King Arthur and his Knights of the Round Table, or the popular tale of Saint George who slayed a dragon to rescue a princess.
However, knights of the early Middle Ages did not wear full suits of armor. Those suits, along with romantic ideas and images of knights, developed over time.

The image on the left, painted in the mid 1300s, shows Saint George the dragon slayer wearing only some pieces of armor. The carving on the right, created around 1485, shows Saint George wearing a full suit of armor.
The first type of armor worn to protect soldiers was mail armor, commonly known as *chainmail*. Mail was made by hand, weaving interlocking rings of iron into a pattern of protective mesh. Artisans weaved the mail into a variety of attire: shirts, leggings, and hoods.
Based on archaeological evidence, scholars believe mail was invented before 300 BCE by the Celts. At this time, much of Europe was culturally Celtic and the Roman Republic (seen here in red) was still small. Over time, the Romans would adopt mail for their own soldiers. By the beginning of the 1st century CE, the Roman Empire had gained control over most of Europe, and the use of mail spread throughout the Mediterranean world.
By the 11th century, mail outfits had developed in length to protect more of the body. Like this one from the Sudan in Africa, the armor included extended sleeves and a knee-length skirt suitable for riding a horse. This type of suit is called a hauberk, and it weighs just over 33 pounds.

With the 13th century addition of mail leggings, a full suit would weigh around 40 pounds. Mail armor was expensive to make and was therefore owned by wealthy soldiers.
An early knight would have additional equipment to protect himself. Under his mail, a knight would wear a light, padded garment, which goes by different names: a gambeson, aketon, wambais or panzeri. The purpose was twofold: to prevent chaffing of the mail against the body, and to provide further protection.

A shield was also used. While shapes varied, the triangular type is popularly associated with knights. (Our shield here is upside down so it can stand!) Helmets were worn to prevent head injuries.
The 5th through 12th centuries saw round or conical, open-faced helmets. Sometimes a nose guard or a mail curtain was included to protect the face from slashes. Helmets that covered the whole head developed between the late 12th and 14th centuries. These helmets, often worn while riding horses, offered limited vision and were removed when fighting on foot to see better. Helmets with brims were popular for foot soldiers, or *infantry*, as they added extra protection without covering the face.
• By the 14th century, the *basinet*, a helmet with a moveable visor, developed. The visor pictured here was called “Dog-faced!”

• By the 15th century, the *sallet* became the most popular helmet for combat. Note that it has a projection to protect the neck.

• In the 16th century, the *close helmet* developed. The close helmet covered the entire head and had a visor that lifted. This helmet is often associated with knights today.
The weapons used and faced on the battlefield by knights came in different forms. As it could thrust and cut, the spear was the most common weapon of the 5th-13th centuries and was wielded by infantry and knights alike.

*Battle axes* were popular weapons that could both cut and provide a strong, concussive force. Its ends could also hook an opponent.
Maces provided a focused, concussive blow that could crush both armor and people.

Crossbows and war bows could send piercing arrows toward an opponent from a distance.

Swords could both cut and thrust. A symbol for knightly power and justice, they were expensive and few outside the knightly class could afford them.
This outfit is a combination of mail, helmet and shield together, similar to that worn by early knights. It shows the armor worn in the Sudanese area of Africa by cavalrymen—soldiers on horses—between the 16th and 19th centuries.

Mail armor’s main strength was its resistance to cuts from the edges of spears, axes and swords. However, mail was vulnerable to the hard force of impacts from weapons like maces and axes. Sharp, pointed weapons, such as spears, swords, and arrows could also pierce through mail.
During the 13th and 14th centuries, armor began to transition from mail to plate armor. Initially, plates were added to reinforce mail and used as spot protection for knees, elbows, and shoulders. Also, small plates were added to the tunic or surcoat that was worn over mail. This was called a coat-of-plates (by the 16th century called brigandine armor). The image on the left is a fragment of brigandine with overlapping plates riveted to fabric and was part of an armored jacket.

By the late 14th century, the plates became larger and protection expanded to protect almost all of the body: feet, calves, hands, forearms, upper arms, and chest. Look carefully at this suit of armor on the right, and note the mail shirt and neck protection—mail was still used to fill gaps in plates of armor. This suit weighs 54 pounds and 5 ounces.
The primary purpose of armor was to protect soldiers in battle. Plate armor was like wearing a shield or helmet all over the body. The knight was covered in a smooth, curved surface. The plates were jointed so they would move freely with the soldier’s joints. This combination of flexibility and protection made an armored knight very difficult to hit directly with a weapon.

Plate armor suits weighed an average of 55 pounds, similar to mail suits, but the weight of the plates was more evenly distributed over the body. A trained man-at-arms could do cartwheels in his armor! The biggest drawbacks of plate armor were that it was expensive and hot to wear.
Not all armor was practical. Some suits were purely decorative and made to be worn for show on parade. The armor above was heavily decorated with fancy etchings and engravings on its metal plates. Softer and thinner metal was easier to decorate. This created armor that had virtually no protective value. This armor, weighing only 30 to 45 pounds, was light enough to dance in!
In the 14th century primitive firearms were introduced, which became more common in the 1500s. Some armor could be reinforced to protect against firearms. By 1660, as firearms such as muskets and pistols dominated the battlefield, armor no longer provided protection and was not worn. Slowly, new types of armor developed to keep soldiers protected. Think of some modern types of armor and protection used by soldiers.
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Enter it and hit search.

The photo with following data will appear:
Composite “Black-and-White” Half Armor, German Object Number: 2014.1144

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