

Chapter 1

Ancient Roman Inventions

Introduction:

In the years 753 BC – 476 AD the Romans invented many things in the categories of **medicine, engineering, communication, and law**. Many of these Roman inventions are still used today. During this time the Romans conquered many cities and countries. A large portion of Roman inventions were invented outside Rome by Romans occupying conquered places, as well as by non-Romans from these regions. In this chapter you will improve your knowledge about Roman law and the twelve tables. You will also learn about how the first Roman medics were captured Greeks or Greeks moving to Rome to live a better life. Find out which Roman inventions are still used today and how Roman concrete revolutionized the earth. See how the Julian calendar put a stop to the 5 years of mass confusion before it was made. Learn the history of the acta diurna and what it talked about.



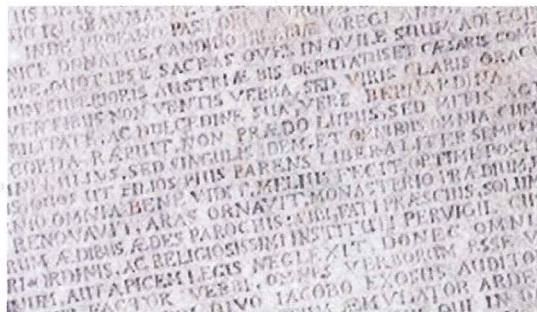
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Roman concrete:

Roman concrete was used for a lot of construction during the Roman Republic. It was used frequently in the middle of the first century BC. It is made out of **aggregate** and hydraulic mortar mixed into water. It was used to make roads and the Pantheon Dome. Romans used it for under water building. After a fire in 64 AD, the new Roman building code required most of a building to consist of brick faced concrete. **Gypsum** and lime were used as binders for the concrete. The Romans also had **pozzolana** cement which was made out of a lot of aluminum and **silica**. Rheological cement is the most common Roman cement.

Acta Diurna:

Acta Diurna was the Roman's official daily notices. They were imbedded into stone or metal, and put up in a populated area so people could read them. They were first used in 131 BC during the Roman Republic. They started off describing legal and military events, but later they also described events happening such as deaths, marriages and births.



Text of Acta Diurna

Roman Roads:

Romans started building roads around 500 BC. When Rome was at the peak of its power there were at least 29 different military highways. The romans built their



Roman Road

roads out of stones, and broken stones mixed with cement and sand, as well as cement mixed with broken tiles. In 450 BC the law of the Twelve Tables said that roman roads must be 8 feet wide when the road is strait and 16 feet wide when there is a curve in the road. The table also says that the roads must not need frequent repair and that the roads need to be as straight as possible.

The Julian calendar:

The Julian calendar was made in 46 BC by Julius Caesar. The Julian calendar was a remake of the Roman calendar. It was used in 45 BC closely after the conquest in Egypt. Five years before the Julian calendar was made there was mass confusion.

Aggregate: a material or structure formed from a loosely compacted mass of fragments or particles.

Gypsum: sulfate mineral composed of calcium sulfate dehydrate.

Pozzolana: fine sandy volcanic ash.

Silica: hard, unreactive, colorless compound that occurs as the mineral quartz and as a principal constituent of sandstone and other rocks

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Roman Arches:

Roman arches were different from arches before it because Roman arches were meant to carry larger weights. They lifted larger weights because they were the first arches made out of lime and volcanic sand concrete. The arches were used to make the Roman Coliseum and the Pantheon Dome. Byzantine

architects from Eastern Europe and Romanesque architects used the Roman arch constantly.



Roman Arch

The Twelve Tables:

In 450 BC the twelve tables were invented. It started off only having 10 laws, but soon got two more for a total of 12. The original Twelve Tables was inscribed on bronze, and was believed to have been destroyed in the invasion of 387 BC. The Twelve Tables was the earliest attempt of the Romans making a code of law.

Patricians opposed the idea of the Twelve Tables, but in 251 the **decemviri** made the first ten tables of law. In 249 BC the last two tables of law were made in the second decemviri.

Patricians:

a person of noble or high rank aristocrat.

Decemviri:

a member of a permanent board or a special commission of ten members in ancient Rome

Roman Battle surgery:

The Romans got their knowledge of battle surgery from the Greeks. The first Roman doctors in Rome were captured Greeks. The Romans had three different kinds of doctors which were internists, ophthalmologists, and urologists. All of the Roman surgeons knew how to use tourniquets, arterial clamps, and ligatures to stem blood flow. The most common Roman battle surgery was removing a projectile that has pierced the skin of a Roman soldier. There were two ranks of doctors which were **medicus** and **medici**.

Medicus: A fully trained medical officer.

Medici: A non-trained medical officer.

Hypocaust:



Hypocaust

Hypocaust is the ancient Romans underground heating. It was used to heat hot baths or buildings. They made the central heating by making their floors by having pillars with gaps in between them then a layer of tiles then a layer of cement then a final layer of tiles and having spaces inside the wall.

The heat came from a giant furnace. The rooms that used the most heating were built closer to the furnace. The rooms that didn't use that much heating were built farther away from the furnace.

Summary:

Many of the Roman inventions described in this chapter are still used today. While the Romans were credited with these inventions, many were developed outside of Rome and by non-Romans.

Roman Concrete

- Roman concrete is a concrete made out of hydraulic mortar and aggregate mixed into water.

Acta Diurna

- Acta Diurna was an early newspaper imprinted on stone or metal.

Roman Roads

- Roman roads were an early road or highway at least 8 feet wide.

Roman Arches

- Roman arches were an early arch made out of concrete.

Julian Calendar

- The Julian calendar was an early calendar that was very close to the solar year.

The Twelve Tables

- The Twelve Tables was the first Roman code of law.

Roman Battle Surgery

- Roman battle surgery was some of the first ever battle surgery.

Hypocaust

- Hypocaust was some of the first heating systems.

Questions/Activities:

1. What is the third layer in a Roman floor in a Roman building that has central heating?
2. List three kinds of Roman doctors.
3. List three things the Romans used Roman concrete to build.
4. Who opposed the twelve tables?

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