

# ANCIENT ROME



EPIC INNOVATORS AND ENGINEERS



## Exhibition Walkthrough



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# ANCIENT ROME



EPIC INNOVATORS **AND** ENGINEERS

## Overview

The Roman Imperial period (27BC – 476AD) was an era of massive construction and large-scale technical innovation. You will be surprised to see how much we inherited from 2,000 years ago—many of the objects, concepts and machines are still part of our lives today.

Very few real pieces of ancient Roman technology and machinery have survived, however, through studying archaeological finds and ancient texts, the creators of this exhibition have reconstructed ancient Roman technology using the same materials and techniques used thousands of years ago.

This exhibition includes models, catapults, frescoes, armour, weapons, busts, and much more, and has four main sections:

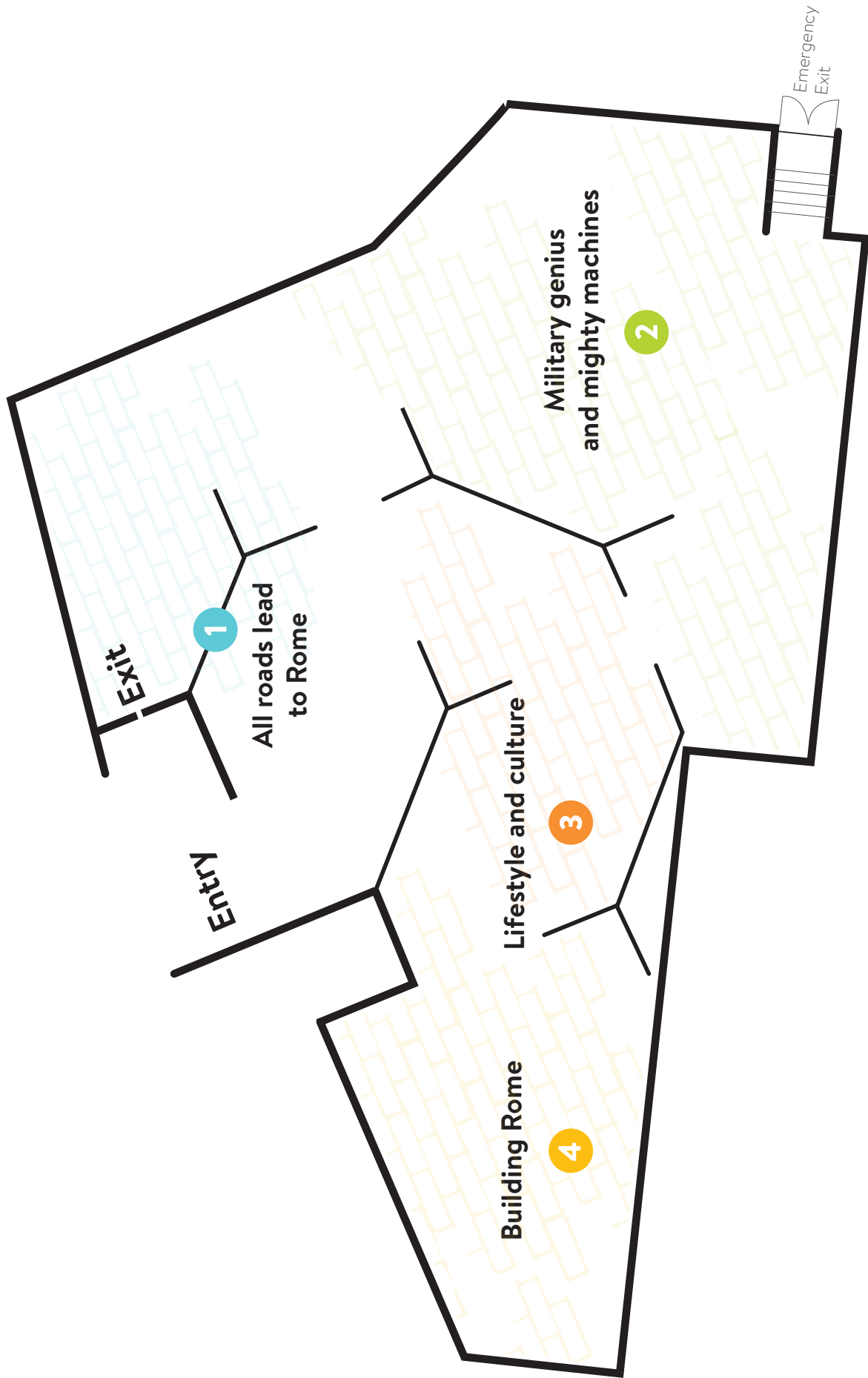
1. All roads lead to Rome (measurements, transportation by road and sea, communication)
2. Military genius and mighty machines (Caesar's army, discipline, tactics, war machines, armour, weapons)
3. Lifestyle and culture (games, art, clothes, timekeeping, Roman life and people)
4. Building Rome (engineering - roads, bridges, buildings, monuments, aqueducts, tools, machines, techniques)

## Welcome

This document is intended as a resource for an adult leader with children to spark discussion and guide exploration within the exhibition.

We hope you enjoy your visit.





# 1 All roads lead to Rome

This section of the exhibition explores measurements, transportation by road and sea, and communication.

## Measurements

Ancient Romans had many innovations or tools to measure the world around them. Knowing how far you have travelled can be important to judge how long it might take you to travel between two locations, or how close you are to the next city.

**Can you find any examples of innovations that were used for measurements?**

**Why were these important?**

Ancient Romans were able to measure the distance travelled over land and sea. These innovations were called odometers (you might have heard of this from their use in cars today).



Part of a naval odometer – used to measure the distance travelled by sea.



## 2 Military genius and mighty machines

This section of the exhibition focuses on Caesar's army, discipline, tactics, war machines, armour, and weapons.

The superior technology of the Romans led to the reputation of the Empire as being “unbeatable” in battles on land and at sea. This section of the exhibition explores the machines, equipment and armour as well as the methods of communication (including secret codes) that made it possible to conquer lands far from the Empire's base in Rome.

Aside from superior weapons and training the Roman military had innovative ways to defend and protect their armies.

### What examples can you find of innovations that were used to protect Romans in battle?

- The assault (or siege) tower was a movable structure that protected soldiers from projectiles.
- Shield formations such as testudo (or tortoise formation) and tortoise rams allowed soldiers to advance on enemies while being protected.
- Armour was key in protecting Roman armies.



Assault (or siege) tower

### 3 Lifestyle and culture

This section of the exhibition explores games, art, clothes, timekeeping, Roman life and people.

#### What do you do for entertainment?

Entertainment was important to ancient Romans and the Colosseum was a centre for large events. In addition to larger events ancient Romans also enjoyed other activities such as board games and public baths.

#### Reading and writing

**Did you know** that the ancient Romans used wax tablets to write on, and are also credited as some of the first people to use books?

Latin was the language of ancient Rome, but there are still many Latin words around today.

#### Can you think of any Latin words still used today?

Many English words have their origins in Latin, e.g:

- Alibi – means ‘elsewhere’
- Bonus – means ‘good’
- E.g. stands for *exempli gratia* in Latin, which means ‘for example’

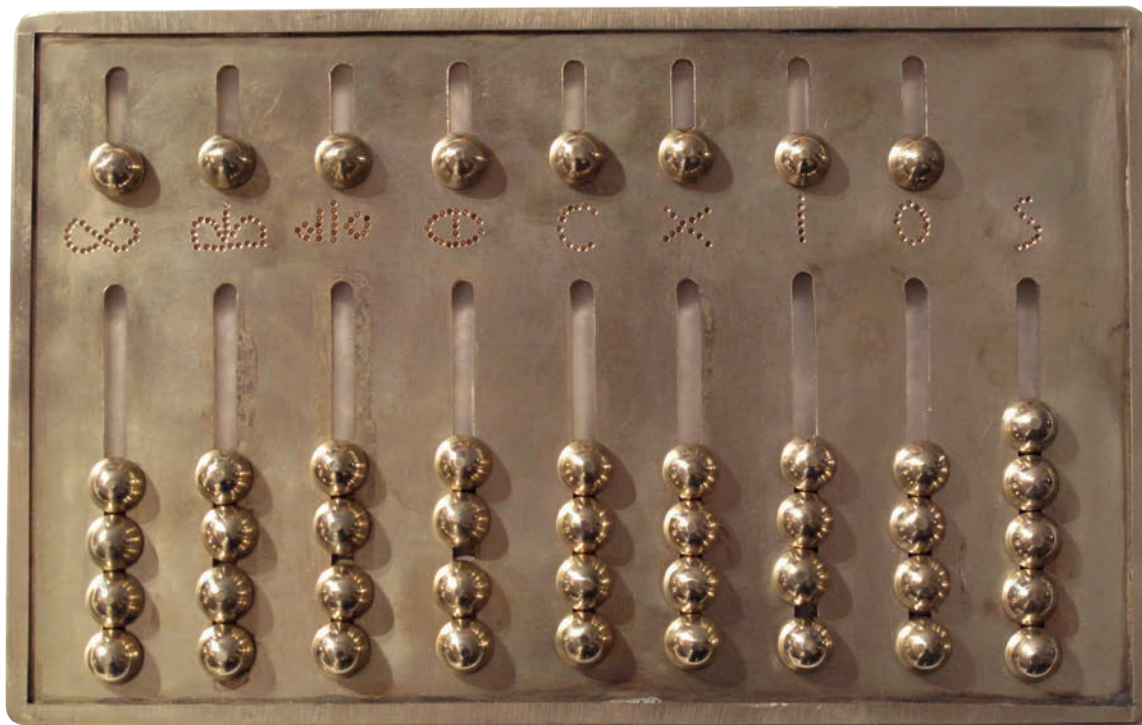
Latin is used in many religious ceremonies, as well as in a lot of academic or scientific words.

**Did you know** that our modern calendar is based on the Julian Calendar – with the months being named after Roman gods, festivals and emperors?



## Arithmetic

In order to count and calculate large sums the ancient Romans used something called an abacus. While the Romans did not invent the abacus, it played a large role in their society.



Abacus

### How does something like an abacus impact daily life?

Being able keep track of numbers and calculate larger sums had a big impact for trade and business, as well as a general mathematic literacy for the Roman society. Many Romans often carried a pocket abacus to help them with daily calculations.

## Clothing

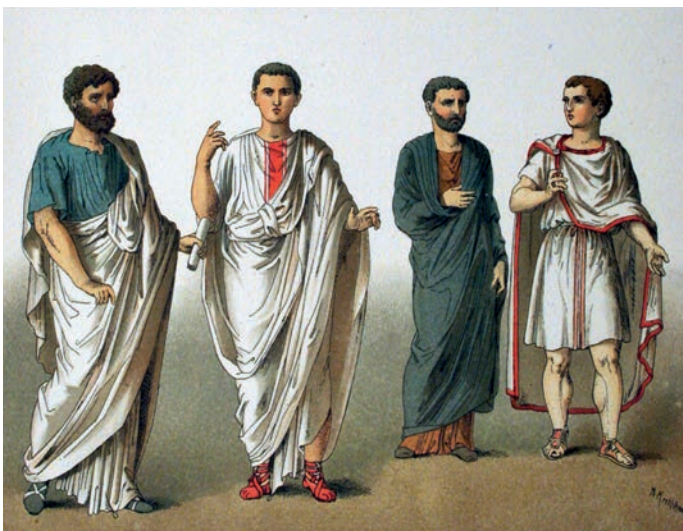
In ancient Rome the kinds of clothes that you wore represented your gender, profession and your status.

### What did ancient Romans wear and where did their clothing come from?

Ancient Roman clothing was often made from wool spun by the women in the family, or in the case of wealthier Romans, their slaves. Materials such as silk were also imported from China and India for those that could afford it.

**Did you know** that Togas were only worn by free men? Women wore a long, pleated dress called a Stola. The colours that you could wear were determined by your status in society.

### Where do your clothes come from?



Images by Albert Kretschmer, painters and costumer to the Royal Court Theatre, Berin, and Dr. Carl Rohrbach. [Public domain]



## 4 Building Rome

This section of the exhibition explores engineering and the construction of roads, bridges, buildings, monuments, and aqueducts through a variety of tools, machines, and techniques.

Many great engineering principles were used in the construction of Rome. From building the roads, bridges and archways, to considering important environmental factors such as water flow.

The machines that helped move materials around, as well as the materials themselves (such as concrete) made it possible to build many of the great structures in Rome.

While many of these ideas may seem common to us now, Romans were either the first to implement them, or played a key role in influencing the spread of these innovations and engineering principles.

### If you were to plan your own city, what would you need to consider?

#### Water flow

How water flows into, around and out of a city can be very important. We might take our taps and toilets for granted but imagine if you didn't have access to water at your house. It is also important to consider how a city can handle potential floods or how agricultural water needs might be met.

#### Can you find any examples of ways that the ancient Romans considered or used water?

- **Aqueducts** - an engineering masterpiece, Roman aqueducts transported water into cities to be used for public baths, fountains, in households, latrines and for gardens and agriculture.
- **Road construction** - roads were built above ground level and often included drainage ditches, or layers of material to allow for water flow.
- **Energy** - the Romans utilised the flow of water to produce energy or help them do work (often connected to a mill to grind grain).

- **Keeping time** - the water clock utilised a consistent flow of water to measure the passing of time. This device had advantages over the sundial as it could be used inside or at night.



Noria- or ancient Roman water wheel

## Road construction

Being able to get from one place to another is important for migration, trade, or even when sending your armies out into battle.

### Who do you think built the roads in ancient Rome?

While slaves were often used for labour, many of the roads were built by Roman soldiers. Romans were proud of their road construction and used many innovative machines to help them build their large network of roads.

### What did the ancient Romans have to consider when building their roads?

- Ancient Romans used surveying tools such as the groma to ensure that the roads were built straight and even.
- Engineering principles such as road layers meant resources could be used efficiently, and the roads would last longer.

## Arches

Take a look at the famous buildings such as the Colosseum, and it is clear that arches were a widely utilised form in the buildings in Rome. The arch is often represented as one of the greatest architectural innovations ever designed.



Colosseum

Arches of brick first appeared in Mesopotamia around 200 BCE; however, the widespread use of arches started with the ancient Romans.

### **Why was the arch such an important innovation?**

The Romans were the first to apply the technique using a wide range of building materials such as bricks, volcanic rocks, stones, masonry, and the newly invented concrete which allowed them to recycle material that would previously have been discarded.

By using arches in constructions such as aqueducts, the Romans were able to conserve huge amounts of material.

