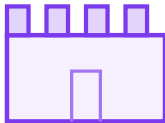


# Scientific, Philosophical, and Political Developments

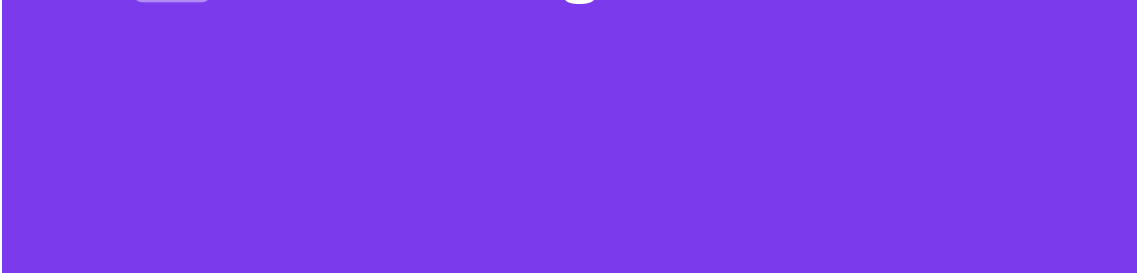
AP European History ■ Unit 4

AP European History



## What we will cover

- 1 Contextualizing the Scientific Revolution and the Enlightenment
- 2 The Scientific Revolution
- 3 The Enlightenment
- 4 18th-Century Society and Demographics
- 5 18th-Century Culture and Arts
- 6 Enlightened and Other Approaches to Power



## Contextualizing the Scientific Revolution and the Enlightenment

Unit 4 rests on one claim, and it is worth learning in the CED's own words: the spread of **Scientific Revolution** concepts and practices, and the **Enlightenment's application of those concepts and practices to political, social, and ethical issues** , fostered debate about the role of the individual in relation to the state and society.

A method developed for studying nature was turned on human institutions, and the result was a set of arguments about what a government owes the people it rules.



# The Scientific Revolution

New ideas and methods in astronomy led **Copernicus** , **Galileo** , and **Newton** to **question the authority of the ancients** and develop a heliocentric view of the cosmos.

- Anatomical and medical discoveries by physicians including **William Harvey** presented the body as an **integrated system** , challenging inherited medical theory.
- **Francis Bacon** and **René Descartes** defined **inductive and deductive reasoning** and promoted experimentation and the use of mathematics.

## The Scientific Revolution, continued

The CED then adds a point students find surprising and examiners like: **alchemy and astrology continued to appeal** to elites and to some natural philosophers, partly because they shared with the new science the assumption that the natural world is governed by discoverable rules.

The Scientific Revolution was not a clean break, and saying so demonstrates real understanding of continuity.

# Induction and deduction, in opposite directions

## BACON — induction

start from **observations**  
collect many, look for the pattern  
the general claim comes last

## DESCARTES — deduction

start from a **certainty** you cannot doubt  
reason forward, step by step  
the particular claim comes last

Opposite directions of travel. What they share is the target: both refuse to settle a question by citing **the authority of the ancients**



# A method built for nature, turned on society

## The Scientific Revolution *the method, built to study nature*

- observation and experiment
- mathematics as the language
- induction and deduction (Bacon, Descartes)
- authority of the ancients is questionable

↓ **applied to society**

## The Enlightenment *the same method, turned on society*

**Political** natural rights, the social contract (Locke, Rousseau)

**Economic** free trade, a limited state (Adam Smith)

**Religious** deism, scepticism, atheism; faith becomes private

**Social** salons, print, a literate public debating in the open

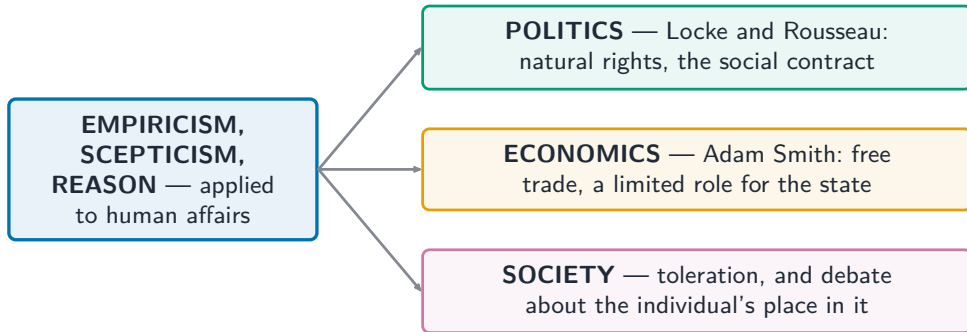
*The examinable limit: the same movement that argued for equality also produced contested arguments about women's proper role.*

The same method, turned on society: political (natural rights), economic (free trade), religious (deism), social (**salons** ).

# The Enlightenment

- **Political:** **Locke** and **Rousseau** developed new political models based on **natural rights** and the **social contract**. Locke's theory conceived society as composed of individuals driven by self-interest, and argued the state's role was to protect their rights.
- **Economic:** mercantilist theory and practice were challenged by new ideas, including **Adam Smith's**, which espoused **free trade** and a **limited role for the state** in the economy.
- **Religious:** intellectuals including **Voltaire** and **Diderot** developed **deism, scepticism, and atheism**, and religion came to be seen increasingly as a **private rather than a public concern**.
- **Social:** a variety of institutions, notably **salons**, explored and disseminated Enlightenment culture.

## One method, three domains



The method is the continuity; the **conclusions** are what differ by domain, and a source is always arguing in one of them

# The Enlightenment's method, and Prussia's rise

## empiricism

knowledge from observation and experiment

## rationalism

knowledge from reasoning, from first principles

## scepticism

withholding assent from what cannot be shown – turned on tradition and on the church

## human reason

applied to nature, then to society, then to government – one method, three domains

## alongside it

demographic, environmental, medical and technological changes reshaped everyday experience

## Prussia rose to power

as the Holy Roman Empire's sovereignty was limited at Westphalia, leaving space for a militarised state to expand

The Enlightenment's claim is about **method**, not conclusions – which is why thinkers using it disagreed so sharply about what it implied.



## 18th-Century Society and Demographics

The demographic story has a clear before and after:

- In the seventeenth century, **small landholdings, low-productivity agriculture, poor transportation, and adverse weather** limited population growth and caused periodic subsistence crises.
- Although the rate of illegitimate births rose in the eighteenth century, growth was still limited by the **European marriage pattern** – late marriage and a significant proportion never marrying.
- As **infant and child mortality decreased** and commercial wealth increased, families dedicated more space and resources to **children** and their education.
- **Cities offered economic opportunities**, which attracted migration from rural areas, transforming urban life and creating new social problems.



## 18th-Century Culture and Arts

- Despite **censorship**, increasingly numerous and varied printed materials served a growing **literate public** and produced a **public sphere** in which opinion could form outside the state.
- Natural sciences, literature, and popular culture increasingly exposed Europeans to **representations of peoples outside Europe**.
- The arts moved **from the celebration of religious themes and royal power to an emphasis on private life and the public good** – a shift in subject that tracks the shift in authority.
- The **consumer revolution** of the eighteenth century was shaped by a new concern for **privacy** and encouraged the purchase of new goods for the home.



## Enlightened and Other Approaches to Power

In the eighteenth century a number of states in eastern and central Europe experimented with **enlightened absolutism** – rulers adopting Enlightenment-inspired reforms in law, education, and administration **while retaining absolute authority**. The tension in that phrase is the examinable point.

By 1800 most governments in western and central Europe had **extended toleration to Christian minorities**, and in some states civil rights as well.

# Adopted, and never given up

## ADOPTED

legal and administrative reform  
toleration extended to Christian minorities  
the vocabulary of reason and improvement

## NOT GIVEN UP

absolute authority over the decision itself  
no representative body with a claim on it  
the reform is a *grant*, and can be withdrawn

Reform **from** absolute power is not a step away from it. Prussia's rise is the case to test that on



## Causation in the Age of the Enlightenment

The unit's reasoning skill is **causation**, applied to how these movements **challenged the existing European worldview**.

## Worked example – an idea that undermines an authority

*“Explain one way in which Enlightenment thought challenged existing political authority in the eighteenth century.”*

- **Full marks:** *“Locke’s theory of natural rights and the social contract held that government exists to protect individuals’ rights and derives its authority from their consent – which directly undermined the claim that a monarch’s authority came from God, because it made legitimacy conditional on performance.”*
- Identify the challenge, then trace what it displaced.

An idea challenges an authority only by contradicting the specific claim that authority rests on. Name that claim.

## Exam tips

- Learn the CED's own sentence: the Enlightenment **applied Scientific Revolution methods to political, social, and ethical issues**. Many questions are answered by unpacking it.
- The Scientific Revolution was **not a clean break** – alchemy and astrology persisted. Continuity points score.
- Group Enlightenment outputs as **political, economic, religious, social**. Four labelled kinds beat a list of names.

## Exam tips, continued

- Always note the **limits on equality**, especially regarding women. The CED names them explicitly.
- **Enlightened absolutism** is a tension, not a contradiction: reform without surrendering authority.
- The **public sphere** – print, literacy, salons – is the mechanism by which ideas became political. Use it to explain, not just to describe.



## Period 4 – key takeaways

1

### Method

Scientific Revolution methods  
applied to society

2

### Outputs

political, economic, religious,  
social – four kinds

3

### Limits

equality was limited, especially for  
women

4

### Public sphere

print, literacy, salons made ideas  
political

## Check yourself

- 1 What sentence unpacks the Enlightenment?
- 2 Name the four kinds of Enlightenment output.
- 3 What limit must you always note?
- 4 What is the public sphere for?

**Answers:** SR methods on political/social/ethical issues ■ political, economic, religious, social  
■ women / equality ■ turning ideas into politics