GCSE History – Revision Guide

AQA History: Paper 2

- Britain: Health and the people: c1000 to the present day
- Elizabethan England, 1568-1603

Name –

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NAME:

GCSE History AQA 2016-18
PLC Paper 2: Section A
Option 2A – Britain: Health and the People: c1000 to the present day

TOPIC	I can explain...	Red	Amber	Green
Part 1: Medicine stands still				
1. **Medieval Medicine**	• Approaches including natural, supernatural, ideas of Hippocratic and Galenic methods and treatments			
	• The medieval doctor			
	• Training, beliefs about the cause of illness			
2. **Medical progress**	• The contribution of Christianity to medical progress and treatment			
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1. **The impact of the Renaissance on Britain**	• Challenge to medical authority in anatomy, physiology and surgery			
	• The work of Vesalius, Pare, Harvey			
	• Opposition to change			
2. **Dealing with disease**	• Traditional and new methods of treatments			
	• Quackery			
	• Methods of treating disease			
	• The plague			
	• The growth of hospitals			
	• Changes to the status and training of surgeons and physicians			
	• The work of John Hunter			
3. **Prevention of disease**	• Inoculation			
	• Edward Jenner			
	• Vaccination and opposition to change			

NAME:

TOPIC	I can explain...	Red	Amber	Green
Part 3: a revolution in medicine				
1. **The development of germ theory**	• The importance of Pasteur, Robert Koch and microbe hunting			
	• Pasteur and vaccination			
	• Paul Ehrlich and magic bullets			
	• Everyday medical treatments and remedies			
2. **A revolution in surgery**	• Anaesthetics, including Simpson and chloroform			
	• Antiseptics, including Lister and carbolic acid			
	• Surgical procedures			
	• Aseptic surgery			
3. **Improvements in public health**	• Public health problems in industrial Britain			
	• Cholera epidemics			
	• The role of public health reformers			
	• Local and national government involvement in public health improvement, including 1848 and 1875 Public Health Acts			
Part 4: Modern medicine				
1. **Modern treatment of disease**	• The development of the pharmaceutical industry			
	• Penicillin, its discovery by Fleming, its development			
	• New diseases and treatments			
	• antibiotic resistance			
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2. **the impact of war and technology on surgery**	• plastic surgery			
	• Blood transfusions			
	• X-rays			
	• Transplant surgery			
	• Modern surgical methods, including lasers, radiation theory and keyhole surgery			
3. **Modern public health**	• The importance of Booth, Rowntree and the Boer War			
	• The Liberal Social Reforms			
	• The impact of two world wars on public health, poverty and housing			
	• The Beveridge Report and the Welfare State			
	• Creation and development of the National Health Service			
	• Costs, choices and the issue of healthcare in the 21st century			

Health and the People c1000–Present Day Timeline

The symbols represent different types of event as follows:

 Red: surgery

 Black: public health

 Yellow: disease

c1230  *Compendium Medicine* is written by Gilbert Eagle – a comprehensive English medical textbook blending European and Arab knowledge of medicine

1348  Black Death arrives in England

1628  William Harvey proves the circulation of the blood

1724  Guy's Hospital is founded in London

1798  Edward Jenner develops cowpox as a protection against smallpox

1847  James Simpson uses chloroform as an anaesthetic

1848  First Public Health Act is introduced

1858  Joseph Bazalgette begins building a network of sewers under London's streets

1867  Joseph Lister publishes a description of carbolic antiseptic in surgery

1882  Robert Koch's work on the identification of tuberculosis is publicised in Britain

1906  First of the Liberal social reforms – including free school meals for the poorest children, free medical checks and free treatment – is introduced

1928  Alexander Fleming discovers that penicillin kills bacteria

1948  NHS comes into operation

1953  Francis Crick and James Watson publish their research on the structure of DNA

1963  First liver transplant is carried out in America

2003  Human Genome Project is declared complete with the final sequencing of the entire human genome; this is a huge breakthrough in understanding how genes help determine who a person is

Medieval medicine

RECAP

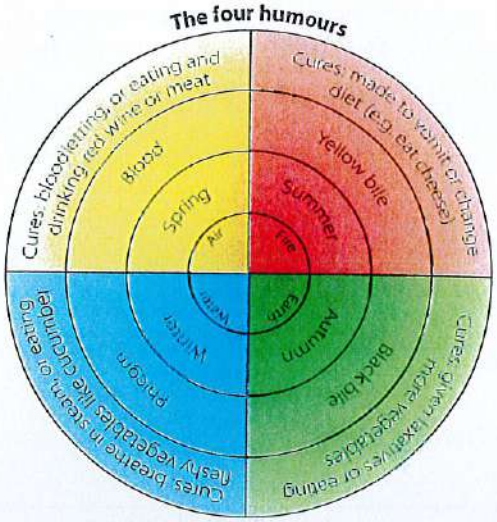
Treating the sick in Medieval England

There was a variety of different people you went to if you were ill in Medieval Britain – and an even greater variety of treatments:

- **Barber surgeons in towns** – did **bloodletting**, minor surgery; based on experience.
- **Wise men or women in the village** – gave first aid, herbal remedies, supernatural cures with charms and spells based on tradition; based on word-of-mouth and trial and error.
- **Travelling healers in markets and fairs** – extracted teeth, sold potions, mended dislocations or fractures.
- **Herbalists in monasteries** – used herbal treatments, bloodletting, prayer and rest in the infirmary; based on the ancient knowledge of books like Pliny's *Natural History*, word-of-mouth, and experience.
- **Trained doctors in large towns** – treated using Hippocratic and Galenic methods from British textbooks such as Gilbert Eagle's *Compendium Medicine* (c1230) and Islamic texts such as Avicenna's *Canon of Medicine*.
  - Very **few** doctors in Medieval England.
  - Charged **fees** for services.
  - Studied for at least **seven years** at universities controlled by the Christian Church – the main religion in Western Europe.

Medieval treatments showed a belief in both the **natural** and **supernatural** causes of disease	
Natural	**Supernatural**
Christian Church approved of the knowledge of the ancient Greeks and Romans; Galen, although he lived in Roman times, believed in one God; this fitted with Christian ideas	Many diseases that Hippocratic and Galenic medicine could not cure; for these diseases supernatural ideas influenced doctors' treatments
Doctors used: • clinical observation – checking pulse and urine • four **humours**	Doctors checked: • position of the stars • recommended charms and prayers

Medieval doctors based their natural cures on the Ancient Greek theory of illness, which involved the equal balance of the body's four 'humours' – blood, phlegm, black bile and yellow bile. They believed that a person became ill when these were out of balance, and the doctor's job was to restore this balance.



How did Christianity affect Medieval medicine?

The Christian Church believed in following the example of Jesus who healed the sick; therefore Christians believed it was good to look after the sick

God sent illness as a punishment (e.g. mental illness) or a test of faith, so curing an illness would challenge God's will

Monks preserved and copied by hand ancient medical texts

Prayers were the most important treatment rather than drugs

Christians believed in caring for the sick and started many hospitals; over 700 were set up in England between 1000 and 1500

The Church believed in miraculous healing and the sick were encouraged to visit shrines (a **pilgrimage**) with the relics of a holy person, and pray to saints to cure their illness

6.1B Main influences on British medicine in the Middle Ages

Hippocrates greatly influenced diagnosis and treatment of illness

- Hippocrates (460–370BC) taught that **clinical observation** (examining and observing your patient and keeping detailed records) was very important. It still underpins medicine today.
- His **Theory of Four Humours** said that the body consisted of four humours (blood, phlegm, black bile and yellow bile) that had to be balanced for good health.
- Many doctors followed this theory. It influenced medicine until the 1800s.
- **Bleeding** was used to prevent or treat illness. It involved opening a vein or applying leeches to draw blood. It was used to balance humours. Monks were bled up to eight times a year.
- The Hippocratic collection of books was used to train doctors for hundreds of years. They were significant as they provided the first detailed account of symptoms and treatments.

Galen's ideas dominated medical training and treatments through to the 1800s

- Galen (AD130–c.210) built on the Theory of the Four Humours.
- To learn about human **anatomy**, Galen **dissected** animals. As a result he made errors. His errors were accepted because the Church banned people questioning his work.
- The Church liked Galen's work because it supported the **design theory** (that God designed humans). Galen called God 'the creator'.

Hospitals were funded by the Church or a wealthy patron; for example St Leonard's hospital was paid for by the Norman King Stephen

Hospitals concentrated on caring for the sick and not curing; many had a priest rather than a doctor

The Church arrested the thirteenth-century English monk, Roger Bacon, for suggesting doctors should do original research and not trust old books

The Church approved the medical ideas of the ancient Greeks and Romans; their ideas were taught in the universities

The Church played a significant role in medicine

- Christianity taught that God sent illness as punishment for sinful behaviour. To treat illness, people had to repent their sins. As a result, prayer was a popular treatment.
- The Church controlled the universities where doctors trained. Teaching was based on ancient texts written by Hippocrates (c129–c210) and Galen (c460–c370BCE).
- The Church banned medical research and human dissection. Roger Bacon was sent to prison by Church leaders for advocating scientific observation.

Medieval hospitals were small and mainly a place for people to rest and recover from illness

- Hospitals were linked to monasteries or nunneries.
- There were no doctors. Monks and nuns provided nursing care and mainly relied on prayer and herbal treatments.
- Hospital wards had altars where prayers were said regularly.

RECAP

The influence of Islam on Medieval medicine

While Western Europe entered a period known as the Early Middle Ages, the followers of Islam established an enormous and unified Islamic Empire. Islamic doctors made great contributions to medical knowledge.

Islamic ideas about medicine

- The Islamic religion encouraged medical learning and discoveries: the Prophet Muhammad said, 'For every disease, Allah has given a cure.' So doctors were inspired to find them.
- Muslim scientists were encouraged to discover cures and new drugs, such as senna and naphtha.
- In the Islamic Empire people with mental illnesses were treated with compassion.
- Islamic medicine valued Hippocratic and Galenic medicine, and it preserved and learned from the books of the ancient world.
- Muslim hospitals called **bimaristans** were meant for treating patients, not simply caring for them as was the case in the Christian world.

Islamic medicine and training was significantly more advanced than the Christian West

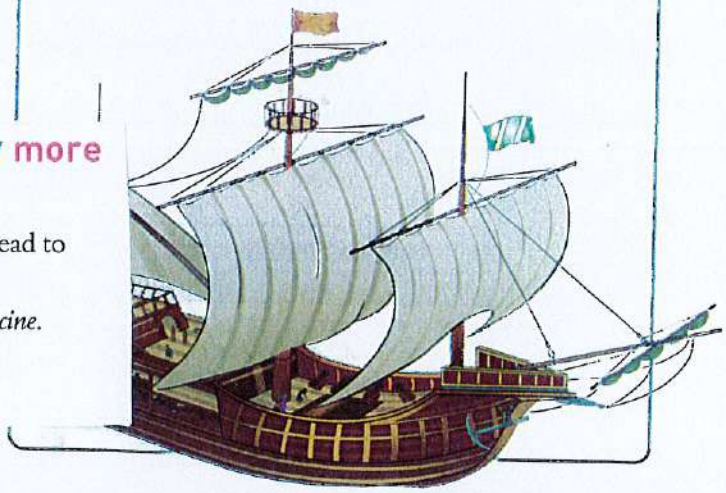
- Islamic doctors wrote medical encyclopaedias. Their ideas were spread to Britain by crusaders.
- Islamic philosopher and doctor, Avicenna, wrote the *Canon of Medicine*. It remained an important text for medical students until the 1700s.
- Islamic hospitals treated patients and also trained doctors.

How did Islamic medical knowledge spread?

Islamic medical discoveries, and the old medical knowledge of the ancient Greeks, arrived in Italy around 1065 through the Latin translations of a merchant, Constantine the African

The universities in Padua and Bologna in Italy soon became the best places to study medicine in Medieval Europe

These medical ideas reached England through trade, as merchants brought new equipment, drugs and books



Important Islamic doctors

Rhazes (c865–c925):

- distinguished measles from smallpox for the first time
- wrote over 150 books
- followed Galen, but was critical; one of his books was called *Doubts about Galen*.

Avicenna (980–1037):

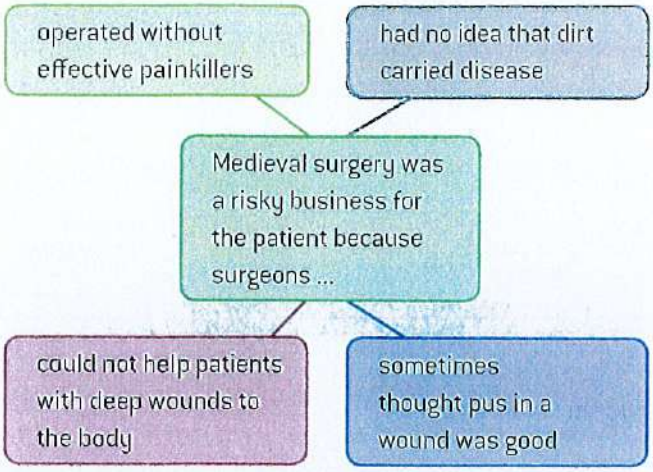
- wrote a great encyclopaedia of ancient Greek and Islamic medicine known as *Canon of Medicine*
- this listed the medical properties of 760 different drugs (such as camphor and laudanum), and discussed anorexia and obesity
- it became the standard European medical textbook used to teach doctors in the West until the seventeenth century.

Ibn al-Nafis:

- in the thirteenth century, he concluded that Galen was wrong about how the heart worked, claiming that blood circulated via the lungs
- but Islam did not allow human dissection and his books were not read in the West
- Europeans continued to accept Galen's mistake until the seventeenth century.

Limitations of Medieval surgery

We should not think of Medieval surgery or surgeons in the modern sense. Medieval surgeons learned by watching and copying other surgeons, or on the battlefield.



Medieval surgical procedures:

- **bloodletting** – frequently to balance the humours
- **amputation** – cutting off of a painful or damaged part of the body e.g. for breast cancer
- **trepanning** – drilling a hole into the skull to 'let the demon out' e.g. for epilepsy
- **cauterisation** – burning a wound to stop the flow of blood using heated iron

A surgeon's toolkit would include saws for amputation, arrow pullers, cautery irons and bloodletting knives. Patients often had to be held or tied down during operations. Natural **anaesthetics** like mandrake root, opium and hemlock were used, but too much might kill the patient.

Medieval surgical progress and pioneers

In the Medieval period, surgery made some progress in Western Europe and in the Islamic Empire. Surgical pioneers tried new methods. Their books were read in Latin by educated and religious men in Europe. In England, they were translated into English.

Guy De Chauliac:

- famous French surgeon who wrote influential surgical textbook *Great Surgery* (1363)
- it had many references to Greek and Islamic writers like Avicenna, and quoted Galen about 890 times
- opposed Theodoric of Lucca's ideas about preventing infection; this was the main reason that Lucca's ideas did not catch on.

John of Arderne:

- the most famous surgeon in Medieval England who set up a 'Guild of Surgeons' in London in 1368
- his surgical manual *Practica* (1376) was based on Greek and Arab knowledge and his experience in the Hundred Years War between England and France
- specialised in operations for anal abscess (swelling with pus), a condition common in knights who spent long periods on horseback.

Hugh of Lucca and his son Theodoric:

- in 1267, criticised the common view that pus was needed for a wound to heal
- used wine on wounds to reduce the chances of infection and had new methods of removing arrows
- their ideas to prevent infection clashed with Hippocratic advice and did not become popular.

SUMMARY

- Medieval Islam made great contributions to medical knowledge and valued the medical knowledge of the ancient Greek and Roman world.
- Avicenna wrote the *Canon of Medicine* which became a standard European medical textbook.
- Muslim scientists found new drugs and treatments.
- Muslim medical scholars, like Rhazes and Ibn al-Nafis, were critical of some ancient learning.
- Dissection for learning was banned in Western Europe and Muslim lands.
- Medieval dissections were to demonstrate that Galen was right.
- Medieval surgery was often learned on the battlefield.
- Some surgeons experimented with new ideas, such as using wine to stop infection, but these did not catch on.
- John of Ardenne was the most famous English surgeon of the time.

The Black Death in Britain

The Black Death was a Medieval epidemic disease that arrived in Britain in the mid fourteenth century. It had a major social, economic and political impact on Britain.

- It began in Asia and travelled rapidly along the trade routes to Western Europe.
- It reached Constantinople (in Turkey) in 1347 and arrived in England in 1348.
- It was a combination of **bubonic plague**, spread by rats and fleas, and **pneumonic plague**, which attacked the lungs and was spread by contact with a victim's breath through coughing, or blood.
- Death usually followed a few days after symptoms (lumps or **buboes**, fever and vomiting) were displayed.

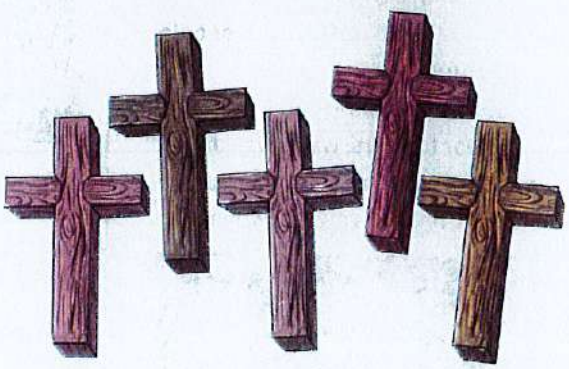
Believed causes	Real causes
Position of stars and planets	Bacteria *Yersina Pestis* which grew in fleas' stomachs
Bad air	Fleas fed on rats' blood, disease killed rats, fleas moved on to humans
Wells poisoned by Jews	Fleas passed the disease on to humans
Punishment from God	Food shortages meant the poor were malnourished and more vulnerable to infection

Major impact on society

The Black Death killed nearly half of Europe's population. In Britain, at least 1.5 million people died between 1348 and 1350.

Social impact

Whole villages were wiped out



Why did the disease spread so quickly?

- Street cleaning was poor.
- Dirty streets encouraged rats to breed.
- Unhygienic habits, e.g. throwing out rubbish, were common.
- Animals dug up quickly-buried victims' bodies.
- Laws about cleanliness were difficult to enforce.
- Quarantine was not effective on infected villages.
- Ignorance of germs and causes of disease was widespread.

Remedies

There was no effective cure at the time and in desperation people resorted to the following.

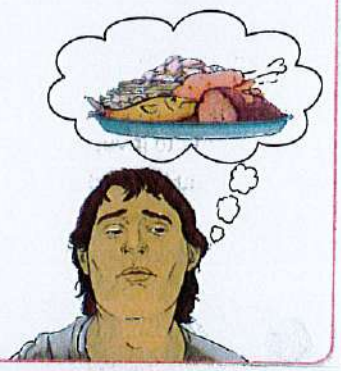
P	Prayer
U	Unusual remedies such as drinking mercury, or shaving a chicken and strapping it to the buboes
M	Moving away if they thought the plague was coming
A	Avoiding contact with people who might be infected; some local councils tried to **quarantine** infected places

Economic impact

Plague created food shortages: so the price of food went up, creating more hardship for the poor

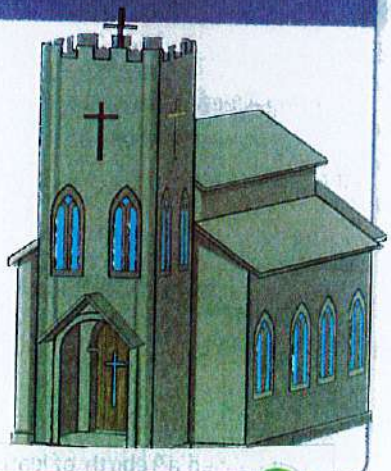
Landowners switched to sheep farming as this needed fewer workers

Farm workers demanded higher wages and were less willing to be tied to the land and work for the feudal landlord



Religious impact

Damage to Catholic Church because experienced priests died; others had run away



The end of the plague?

- By 1350, the Black Death subsided, but it **never really died out** in England.
- Further outbreaks of the plague occurred at intervals (and with varying degree of deadliness) from the later half of the fourteenth century until the eighteenth century. For example, the plague killed 38,000 Londoners in 1603, and it came again in the **Great Plague of 1665**.

EXAMINER TIP

It is easy to confuse the dates of the Black Death (which affected England from 1348 to 1350) and the Great Plague of 1665. Try to keep them separate in your mind!

Public health in Medieval towns

Public health is the health and well-being of the population as a whole. Public health in Medieval towns was poor by modern standards, but the hygiene levels were rising in some places:

	Unhygienic	Hygienic
Water	As towns grew, systems could not cope with the increased demand for water; rivers were often used to remove sewage and other waste	Medieval towns took water from local springs, wells or rivers; some Roman systems survived and still worked well while towns like Exeter used new technology with pipes made of wood or lead
Sewage	Towns were usually dirty with only a few paved streets; **cesspits** could overflow onto roads and into rivers	Most towns and some private houses had privies (outside toilets) with cesspits to collect the sewage; people left money in their wills to build public privies for the town's citizens
Rubbish	In poorer areas streets stank and were often littered with toilet waste and household rubbish	Medieval town councils passed laws encouraging people to keep the streets in front of their houses clean and tidy
Tradesmen's waste	Leather tanning used dangerous smelly chemicals while meat butchers dumped the waste blood and guts into rivers	Town councils and local craft guilds tried to encourage tradesmen to keep to certain areas, and keep them clean

It was difficult to keep Medieval towns clean for a number of reasons.

- Town populations grew and public health facilities couldn't cope.
- Rivers were used for drinking water, for transport, and to remove waste.
- People had no knowledge of germs and their link to disease and infection. They thought that disease was spread by 'bad air', so they were keen to remove unpleasant smells.

Some places had better public health than many towns. Wealthy families could afford better living conditions. But it was in the religious buildings such as monasteries, abbeys and nunneries that the largest number of people enjoyed good public health conditions.

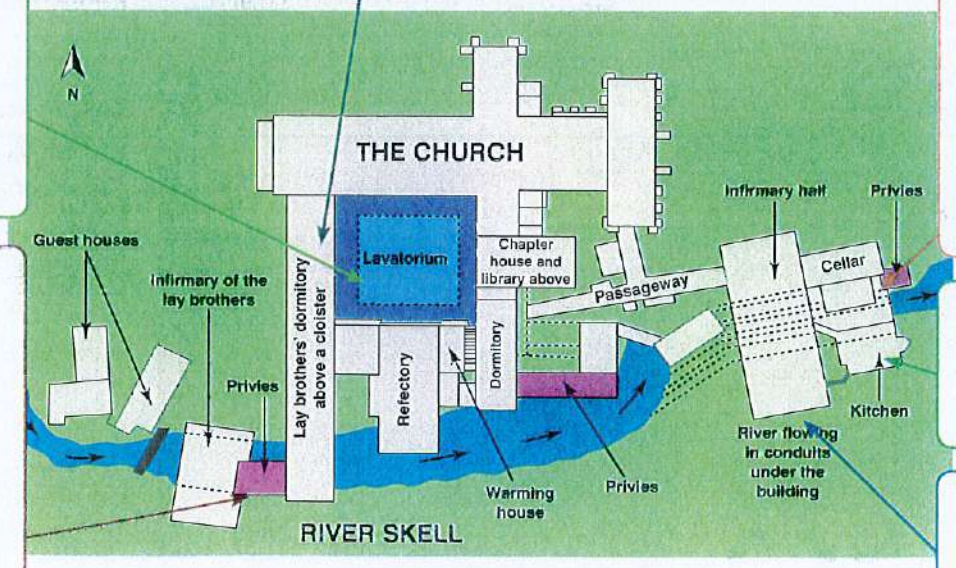
Conditions in monasteries and abbeys

Lavatorium – pipes delivered local well water to wash basins; filters removed dirt

Dormitory – monks washed their clothes regularly as well as their faces and feet

Privies – toilets were emptied into pits, from which the waste was taken to be used as manure

Privies – these toilets sometimes contained potties to collect urine (used for bleaching wool)



River Skell – waste water from toilets put into river

Infirmary hall – a small hospital

The layout of Fountains Abbey in Yorkshire

Wealth

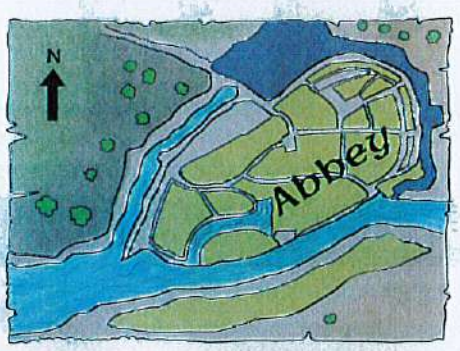
- money to spend on cleaner facilities
- many people gave money, valuables and lands in return for prayers to be said for them when they died
- monks made a lot of money from producing wool and used the large areas of donated land to keep the sheep

Knowledge

- monks could read and understand books in their library
- they learned the basic idea of separating clean water from the wastewater that came from the toilets and wash places
- they understood the ancient Roman idea of a simple routine involving moderation in diet, sleep and exercise to balance the humours

Location

- isolation helped protect monks from **epidemics** (monasteries were usually far away from towns as the Christian Church believed **lay people** were sinful
- Christian monasteries and abbeys were near to rivers; water was an important resource to supply mills, kitchens, bakeries and breweries



Why were conditions better?

Rules

- the monks obeyed the abbot strictly
- they had simple lives that followed a routine
- they kept clean for God and had routines of cleanliness e.g. baths once a month

SUMMARY

- The hygiene in Medieval towns was poor.
- Medieval town councils passed laws to improve cleanliness but could not enforce them.
- Rivers were used for drinking water as well as waste removal.
- Hygiene in monasteries and abbeys was better.
- Conditions in monasteries were better because of their wealth, isolation, and knowledge about hygiene.
- Epidemics like the Black Death flourished in the unhealthy conditions of the towns.
- The Black Death killed half of Europe's population.
- People at the time thought it was a punishment from God and had no effective remedy.
- For those who survived there were great social and economic impacts.

The impact of the Renaissance on Britain

RECAP

The Renaissance

The Renaissance was a cultural movement that began in Florence, Italy, in the late 1400s.

- It began because wealthy businessmen paid scholars and artists to investigate the writings of the ancient Greeks and Romans.
- It inspired people but made them critical of the many versions of old texts; they searched for the most accurate, original versions and experimented with new ideas.
- It made educated people wanted to find out for themselves and not just accept what the Church said.
- It caused a 'rebirth' of learning and a belief that being educated in art, music, science and literature could make life better for everyone.

The spread of Renaissance

- Before the Renaissance, books were rare and expensive because they were copied out by hand.
- The invention of the printing press in 1451 made books cheap, accurate, and quick to produce.

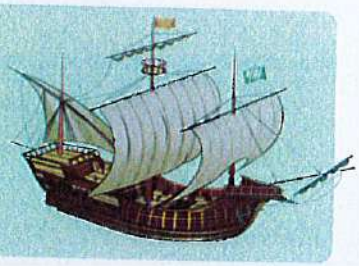
Printing – new ideas spread quickly as well as those of the ancient world.

Art – this showed the human body in realistic detail

New inventions – technology such as gunpowder caused new types of wounds.

The consequences of the Renaissance

New lands – explorers and merchants used more accurate maps, discovered the Americas and brought back new foods and medicines.



New learning – a more scientific approach to learning involving observation, hypothesis, experiment and questioning.

The development of new ideas during the Renaissance led to some medical progress

Development	Impact
The **Reformation** challenged the religious *status quo*	... led individuals to question important aspects of their life such as the role of God and science
Invention of the **microscope**	... helped scientists and doctors to make and explain discoveries
Creation of Caxton's **printing press**	... allowed ideas to spread quickly across Britain and Europe
English people had become **wealthier** since the Black Death and spent more on education	... improved literacy rates increased the number of people accessing new scientific ideas

- However, it took a long time for these new scientific ideas to affect everyday treatments.

Vesalius greatly improved understanding of human anatomy

- Vesalius (1514–64) dissected humans rather than animals. This gave him accurate knowledge of human anatomy and allowed him to prove that Galen was wrong in a number of ways.
- Vesalius worked with skilled artists to ensure that his findings on human anatomy were accurately documented and easy for others to learn from.
- In 1543, Vesalius published anatomical drawings in his book *De Humani Corporis Fabrica* (*On the fabric of the human body*).
- His book proved the value of human dissection and the need to question the work of the ancients.
- Vesalius' work had limited impact on treatments. Doctors still did not know about the cause of illness or learn new effective treatments.

The work of Vesalius

Before Vesalius

- dissections were done to prove Galen was right, not to challenge him
- Galen's words were read while an assistant did the dissection

Andreas Vesalius (1514–64)

- was Belgian and studied in Paris where he learned Galen's anatomy
- as Professor of Surgery at the University of Padua in Italy, he began to question Galen's opinions

Vesalius's book *The Fabric of the Human Body* (1543)

- was a beautifully illustrated, very accurate textbook based on dissections and observations of the human body
- corrected Galen's mistakes because he dissected animals
- provided proof of Galen's mistakes, for example the breastbone in a human being has three parts, not seven as in an ape

Vesalius's work

- he did the dissections himself
- he said medical students should learn from dissections

Reaction to Vesalius

- he was criticised for saying Galen was wrong
- he had to leave his job in Padua and later became a doctor for the Emperor Charles V

Vesalius' contribution to medical progress in England

- in 1545 Thomas Geminus copied Vesalius' illustrations and put them in a manual for barber-surgeons, called *Compendiosa*
- he added text from de Mondeville's *Surgery* (1312)
- *Compendiosa* was very popular in England, and three editions were published between 1545 and 1559

Vesalius: an assessment

- Vesalius' work overturned centuries of belief that Galen's study of anatomy was correct.
- His was a Renaissance approach because his work was based on examination of the human body itself.
- Vesalius transformed anatomical knowledge.
- Although Vesalius' work did not lead to any medical cures, it was the basis for better treatments in the future.
- Vesalius showed others how to do proper dissections, and famous sixteenth century anatomists followed his approach, e.g. Fabricius and Fallopius.

Harvey's contribution to medical progress

William Harvey (1578–1657) was an English doctor who challenged Galen by saying the blood circulated round the body

Galen said new blood was constantly made in the liver and burned as a fuel in the body

Harvey's discovery of the circulation of the blood

- He **calculated** mathematically how much blood would have to be produced if it was a fuel for the body.
- He **observed** the slow-beating hearts of cold-blooded animals to understand how the muscles worked.
- He **read** widely what the Italian anatomists at Padua discovered, and built upon their work.
- He **dissected** and studied human hearts.
- He **experimented** pumping liquid the wrong way through valves in the veins, proving that blood could only go round one way.

What did Harvey not know?

Harvey waited 12 years before publishing *De Motu Cordis* (1628) about the circulation of the blood! There were several reasons.

Harvey did not know:	But he did know there would be criticism:
why the blood circulated	of his going against Galen
why there was different coloured blood in the arteries and veins	of his challenging the idea of bloodletting to balance the humours
how the blood got from the arteries to the veins	

Reactions to Harvey's discovery

Harvey's critics said he was mad, or ignored his ideas. Some doctors rejected his theory because he was contradicting Galen, or did not believe his calculations.

Despite all the criticism, Harvey's theory was accepted by many doctors. It wasn't until 1661, four years after Harvey died, that a good enough microscope was made to see the capillaries connecting veins and arteries.

The significance of Harvey's discovery

Harvey's discovery was not immediately useful. Transfusions did not happen until 1901, when blood groups were discovered. Today, understanding the blood and its circulation is significant because it allows us to quickly test and diagnose illness, and to carry out advanced surgery like organ transplants.

Harvey discovered the circulation of blood which challenged previously accepted ideas

- Harvey (1578–1657) worked as a doctor in England and held important posts including being doctor to King James I and King Charles I. He was in a strong position to influence medical ideas in Britain.
- Harvey discovered and proved that veins in the body had valves and that blood was pumped round the body by the heart beating constantly.
- Harvey's theory challenged Galen who taught that the liver produced blood. Harvey proved that the liver did not produce blood. This discovery questioned the value of the popular treatment of bleeding.
- Harvey published his work in *On the Motion of the Heart*, 1628. Afterwards, some of his patients refused to be treated by him, as they no longer trusted him.
- Harvey's work was rejected by conservatives who supported Galen. They refused to accept the use of experiments in medicine.
- Some people rejected Harvey's work because they were unable to see capillaries. It was another 60 years before they could.

Renaissance surgery and physiology

Ambroise Paré (1510–90) was the most famous Renaissance surgeon in Europe, and published several books about his work. He made several discoveries.

Before Paré's discoveries	Paré's discoveries	After Paré's discoveries
Gunshot wounds were thought to be poisonous and were burned out using boiling oil; then a cream of rose oil, egg white and turpentine was applied	1537 – Paré ran out of hot oil so he improvised and just used the cream He challenged accepted practice based on observation and experimentation	Paré's patients' wounds healed well He wrote a book about treating wounds (1545)
Wounds were cauterised to stop bleeding	Paré used Galen's method of tying blood vessels with **ligatures** or thread He invented the '**crow's beak clamp**' to halt bleeding	The ligature was less painful, but was slower and could introduce infection; it also took longer to use in battlefield surgery
Paré did many amputations	He designed false limbs for wounded soldiers	He included drawings of the false limbs in his books

Paré's contribution to medical progress in England

- Paré translated the work of Andreas Vesalius and used Vesalius's work in his famous *Works on Surgery* (1575).
- This was widely read by English surgeons in the original French, and an English hand-written version appeared in the library of the Barber-Surgeons of London in 1591.
- In sixteenth-century England, Queen Elizabeth I's surgeon William Clowes (1544–1604) made Paré's work well known.
- Clowes, also a battlefield surgeon, described Paré as the 'famous surgeon master'.
- He copied Paré's burn treatment using onions in 1596.
- Like Paré he said that gunshot wounds were not poisonous and wrote about stopping bleeding from wounds in his book *Proved Practice* (1588).

'aré used scientific method to improve treatments nd surgery

Paré (1510–90) was a French army surgeon for twenty years. By experimenting on wounded soldiers he discovered better ways to prevent bleeding.

Hot oil had long been used for sealing wounds. On one occasion, Paré ran out of oil so instead he used his own mixture of egg yolk, turpentine and oil of roses, an old Roman technique. It worked.

To prevent bleeding after an amputation, Paré used **ligatures** to tie wounds instead of **cauterising** them with a hot iron. His method had a higher success rate.

He spread these ideas through his 1575 book *Les Oeuvres* (*Works*).

Paré's work became famous among British doctors and surgeons who studied in Europe where his ideas were popular.

However, Paré's impact on British medicine was limited. Only the rich could afford to pay for medical care and only trained doctors knew about it.

Paré's work was not accepted by everyone in Britain. New ideas were often met with scepticism.

SUMMARY

- The Renaissance was a movement that questioned old accepted ideas.
- Printing was very important for spreading Renaissance ideas.
- Vesalius dissected human bodies himself, and made and recorded his discoveries which showed how Galen was wrong.
- Vesalius's work was quickly copied by others such as Thomas Geminus in England.
- Paré developed new surgical techniques.
- Harvey used scientific methods to discover the circulation of the blood but the idea met much opposition.

Medical treatment in the seventeenth and eighteenth centuries

These came from a number of sources and depended on what you could afford.

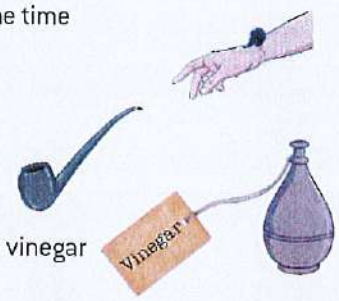
- **Barber-surgeons:** poorly trained people who would give you a haircut and perhaps perform a small operation like bloodletting or tooth pulling.
- **Apothecaries**: they had little or no medical training, but sold medicines and potions.
- **Wise women:** their treatments often relied on superstition. However, they often had extensive knowledge of plants and herbs.
- **Quacks**: showy, travelling salesmen who sold all sorts of medicines and 'cure-alls'.
- **Trained doctors**: such as those who treated Charles II using a mixture of new and traditional knowledge including the four humours.

The Great Plague

In 1665 the plague returned in an epidemic that killed about 100,000 people in London (around a quarter of the city's population) and thousands of people in the rest of the country.

Remedies and treatments at the time included the following:

- bleeding with leeches
- smoking to keep away the 'poisoned' air
- sniffing a sponge soaked in vinegar



- using animals such as frogs, pigeons, snakes and scorpions to 'draw out the poison'
- moving to the countryside to avoid catching the plague, as King Charles II and the court did.

Dealing with the Great Plague: what had people learned since the Black Death?

People recognised the likely **connection between dirt and the disease;** most deaths occurred in the poorest, dirtiest areas.

There was a **more organised approach** this time. Mayors and councillors issued orders to try to halt the spread of the disease.

'Women searchers' **identified plague victims,** examined the sick, and noted those with plague symptoms.

There was **more effective quarantine** (locking up) of victims in their houses, guarded by watchmen.

Bodies were removed at night and **buried in mass plague pits.**

Fires were lit to try to remove the poisons that were thought to be in the air.

Orders were issued for **streets to be swept** and animals were not allowed in the streets.

Gatherings of crowds for plays or games were banned.

Trade between plague towns stopped and the Scottish border closed.

How did the plague end?

- It was not true that the Great Fire of London in 1666 ended the plague by burning down the poor housing. The fire destroyed houses within the city walls. The poorest areas, where most of the plague deaths happened, were outside the city walls.
- The plague declined because the rats developed a greater resistance to the disease, and so their fleas did not need to find human hosts.
- After 1666, quarantine laws prevented epidemic diseases coming into the country on ships

John Hunter

John Hunter (1728–93) was a pioneer of scientific surgery. He was appointed Surgeon to King George III in 1776, and Surgeon-General to the army in 1790.

Hunter's books

- Based on his observations, dissection skill, and experimentation, as well as his experience in the army. Example are *The Natural History of the Teeth* (1771), *On Venereal Disease* (1786), and *Blood inflammation and gunshot wounds* (1794)
- Included his discoveries about the nature of disease, cancer, and the circulation of the blood, with recommendations such as not enlarging gunshot wounds when treating them

Hunter's collection

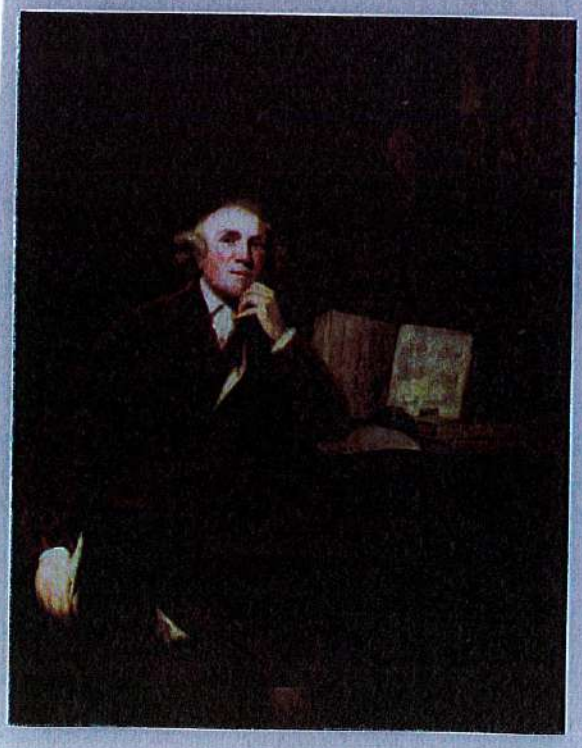
- Collected and studied 3000 anatomical specimens such as stuffed animals, dried plants, fossils, diseased organs, and embryos
- Experimented by pumping wax into blood vessels to study circulation

Hunter's methods

- Demanded careful observation in surgery; experimented on himself in 1767, with gonorrhoea germs
- Tried radical surgery; in 1785 he saved a man's leg with a throbbing lump (aneurysm) on his knee joint, instead of performing the usual amputation

Hunter's teaching

- Taught hundreds of other surgeons (such as Edward Jenner) in his scientific approach
- Inspired many young surgeons to become great medical teachers and professors, some of whom founded famous teaching hospitals in nineteenth-century Britain and America



SOURCE A *A painting of John Hunter, completed in 1813 by the famous English portrait painter, John Jackson*

EXAM QUESTION

Study **Source A**. How useful is **Source A** to a historian studying the development of anatomy?

EXAMINER TIP

You should comment on the provenance of the source in source analysis questions. Notice here that it was painted after Hunter had died. What does that show?

John Hunter was a skilled British surgeon who encouraged investigation and experimentation

- Hunter trained many British surgeons after 1768.
- Like Vesalius, Hunter encouraged human dissection to advance the understanding of anatomy.
- He told surgeons to trust the body's natural wound-healing process.
- Hunter taught the importance of observation and experiment.
- Edward Jenner followed these principles when he discovered vaccination.

Scientific medicine in the seventeenth and eighteenth centuries

In the seventeenth and eighteenth centuries the practice of scientific medicine in modern hospitals began. These hospitals were paid for either by the rich, such as Guy's Hospital in London (1724), or by 'private subscription', where local people clubbed together to pay.

Hospitals in the eighteenth century

- Many new hospitals were built; 1720–50 saw five new general hospitals built in London.
- Patient numbers increased; London's hospitals had over 20,000 patients a year by 1800.
- Hospitals had specialist wards for different types of disease, and often had medical schools to train doctors.
- Hospital treatment was free but still mainly based on the four humours approach of bleeding and purging.
- Attitudes to illness changed as more Christians thought it better to help the sick than to argue about beliefs and types of church service.
- Fewer people thought illness was a punishment for sin. Instead they thought that illness could be dealt with by a more evidence-based, scientific approach.
- Towards the end of the eighteenth century, some hospitals added pharmacies, giving the poor free medicines, such as in Edinburgh (1776).
- Specialist hospitals grew up such as London's Lock Hospital for venereal disease (1746) and a maternity hospital, the British Hospital for Mothers and Babies (1749).

The numbers of hospitals increased. Some treated patients as well as caring for them

- Most hospitals were funded by rich people through donations, legacies or private subscriptions. The Church's role in funding reduced.
- In 1741, Thomas Coram raised money to open the Foundling Hospital in London. It supported and educated vulnerable children until the age of fifteen. Demand was greater than the places available.
- Some aspects of hospital provision continued from the Middle Ages. For example, nurses continued to be untrained and unskilled.
- Hospitals continued to provide care for the most vulnerable.

The establishment of Royal Colleges improved the training and status of surgeons and doctors

- **1600**: Royal College for Physicians established.
- **1700**: half of all practising physicians had served an apprenticeship.
- **1800**: Royal College of Surgeons established. It examined all surgeons practising within seven miles of London.
- **1811**: compulsory for all surgeons to attend a one-year course in anatomy before they qualified as a surgeon.
- **1813**: surgeons had to work for at least one year in a hospital to qualify.

SUMMARY

- Treatments in the seventeenth and eighteenth centuries were a mixture of traditional and new, more scientific, treatments.
- In dealing with the Great Plague some of the measures taken would have helped but people were still no nearer explaining the epidemic.
- Hospitals in the eighteenth century were better organised and directed at curing rather than simply caring for sick people.
- Some hospitals were specialised and doctors could train at them.
- John Hunter founded a scientific approach to surgery.

Edward Jenner and the prevention of smallpox

Smallpox was one of the most feared diseases of the eighteenth century.

Smallpox facts

- one of the biggest killer diseases in the eighteenth century
- a highly infectious virus spread by the coughing, sneezing or touching of an infected person
- killed 30 per cent of those who caught it

Prevention

- using **inoculation**
- but this was controversial and didn't always work

Symptoms

- fever, headache and a rash
- followed by pus-filled blisters covering the entire body
- even if you survived, you could be left blind or with deep scars

Inoculation

- It involved giving a healthy person a mild dose of the disease. Dried scabs were scratched into their skin or blown up their nose. It allowed them to build up resistance against the deadly version.
- It became fashionable after 1721 when, having seen it done in Turkey, Lady Mary Wortley Montagu had her children inoculated.
- It became common from the 1740s and many doctors became rich from the procedure.

The problems with inoculation

- Some people had religious objections, believing that preventing sickness interfered with God's will.
- There was a lack of understanding, and disbelief that it would work.
- There was a risk that the smallpox dose was not mild, and could kill.
- Inoculated people could still pass on smallpox to others.
- Poor people could not afford to be inoculated.

Jenner's discovery of vaccination

Cowpox is a milder version of smallpox that usually affected cows. Edward Jenner (1749–1823) was a country doctor in Gloucestershire. Jenner may have heard stories that people catching cowpox were protected against smallpox. He decided to test this theory in 1796 by giving cowpox to an eight-year-old boy as an experiment. If the cowpox was to work, then the child would not react to the follow-up smallpox inoculation; if it was to fail, then the boy would develop smallpox scabs in the normal way. Six weeks later, he gave the boy smallpox inoculation: no disease followed.

Jenner called his cowpox inoculation technique **vaccination**, based on the Latin word for cow (*vacca*). Jenner repeated the experiment over several weeks with 16 different patients. None of them reacted to smallpox inoculation. Jenner concluded correctly that cowpox protected humans from smallpox.

▼ **SOURCE A** *A painting, from 1823, of a man being shown his face affected by smallpox*

In the 1700s, inoculation was widely used to prevent smallpox

- Smallpox was greatly feared. It caused death, blindness and scarring. There were frequent epidemics.
- **Inoculation** involved giving a low dose of smallpox to make a person immune to the disease.
- In 1721, Lady Montagu introduced it to England. It became popular.

Jenner introduced the first vaccination against smallpox

- Edward Jenner injected James Phipps with pus from cowpox sores. It gave James Phipps immunity against smallpox. This became known as vaccination.
- Jenner was unable to explain why vaccination worked. But it worked so well that the government eventually made it compulsory.

Vaccination faced opposition, especially from doctors

- Inoculation doctors opposed it because it threatened their business.
- Many people thought it was wrong to inject cowpox into humans.
- Some saw smallpox as a punishment from God and believed prevention interfered with God's will.
- The Anti-Compulsory Vaccination League was set up in 1866. It argued that it was the right of parents to decide if their child was vaccinated.

Key point

During the 1800s, medical knowledge significantly advanced following major breakthroughs by individuals. These included the discovery of germs and the ability to identify specific bacteria.

1798: Jenner published his findings

1802: government gave Jenner £10,000 to open a vaccination clinic in London

1840: vaccination made free for all infants

1853: vaccination of children was made compulsory

1871: parents fined if their child was not vaccinated

1887: parents given the right to decide if their child was vaccinated

Reasons for opposition to Jenner and vaccination

Jenner published his findings in 1798 but ...

- he could not explain how vaccination worked
- many doctors were profiting from smallpox inoculation
- attempts to repeat his experiment failed; for example in the London Smallpox Hospital, William Woodville and George Pearson tested cowpox, but their equipment was contaminated and a patient died
- Jenner was not a fashionable city doctor, so there was snobbery against him.

Why was vaccination accepted?

Vaccination became accepted because ...

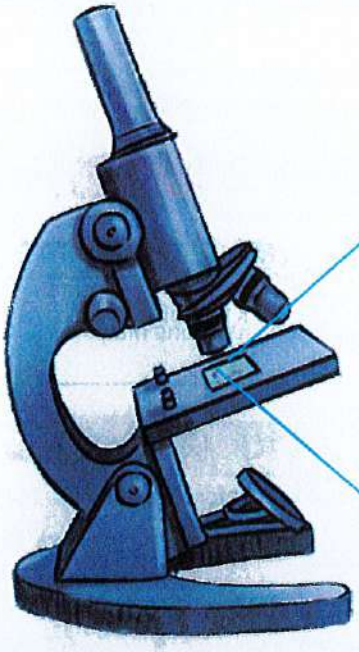
- Jenner had proved the effectiveness of vaccination by scientific experiment
- vaccination was less dangerous than inoculation
- members of the royal family were vaccinated, which influenced opinion
- Parliament acknowledged Jenner's research with a £10,000 grant in 1802
- in 1853 the British government made smallpox vaccination compulsory.

SUMMARY

- Smallpox was the biggest killer of the eighteenth century.
- Inoculation was the usual way to prevent smallpox, but it carried risks.
- Jenner tested whether cowpox vaccination was a better way to prevent smallpox.
- Cowpox vaccination worked, but when Jenner published his findings in 1798 there was opposition.

Early nineteenth-century ideas about infection

Surgery carried a high risk of infection. Surgeons believed that chemicals in the wound caused the infection, but they were puzzled why some deep wounds healed quickly, and other surface scratches proved fatal. Surgeons tried to keep the patient healthy and the wound clean. If it became infected, they used cauterising or acids to burn away the affected tissues.



Using microscopes, scientists saw **microbes**

They thought they were produced by decay (**spontaneous generation**)

They thought all microbes were the same

Challenging spontaneous generation

Spontaneous generation was questioned in the debate about public health.

Contagionists	Anti-contagionists
Believed infection was spread by contact and could be controlled by quarantine	Believed infection was caused by the environment; epidemics such as cholera could be controlled by cleaning
In 1864, surgeon Thomas Wells first suggested infection was non-chemical and referred to Pasteur's discoveries	Doctors like James Simpson wanted hospitals relocated or rebuilt as they thought infection was in their walls or the atmosphere (**miasma**)

In 1861 Pasteur's Germ Theory showed the link between germs and disease

- Louis Pasteur's work was a major breakthrough in **microbiology** (the branch of science that deals with microorganisms).
- Using Jenner's work on vaccination, Pasteur experimented and developed new vaccinations (including vaccines for chicken cholera and rabies).
- Inspired by Pasteur, Joseph Lister successfully used **antiseptics** to reduce infection during and after surgery.

Koch helped identify specific bacteria which cause disease

- Robert Koch found a way to stain bacteria, making them easier to identify under a microscope. It allowed him to link specific germs to specific disease.
- Koch identified the causes of Britain's major killers, including **diphtheria** and **typhoid**. Fewer people died.
- His technique allowed other scientists to do their own microbe hunting.

Ehrlich created the first chemical treatment, changing the way disease was treated

- Paul Ehrlich used scientific experiments to identify and treat disease.
- In 1910, he created Salvarsan 606. This chemical killed germs causing syphilis (a common sexually transmitted disease in Britain at the time).
- Salvarsan 606 only targeted the specific germ that caused syphilis. This was a major breakthrough in treatments.

Louis Pasteur's Germ Theory

Pasteur proved that spontaneous generation was wrong and that germs, not chemicals, caused decay.

Germ Theory in Britain: Joseph Lister

In the late 1860s, Pasteur's Germ Theory came to the attention of British doctors, and revolutionised surgery because of the work of Joseph Lister (1827–1912).

Lister was a Professor of Surgery in Glasgow, and was shown Pasteur's research by Thomas Anderson, a Professor of Chemistry. Lister thought that Pasteur's Germ Theory might explain surgical infection. Anderson also recommended carbolic acid as a chemical that killed bacteria.

▼ **SOURCE A** *The French scientist, Louis Pasteur, carrying out the swan-necked flask experiment to show how liquids go off when exposed to the air; his work was published in 1861 and proved that bacteria were the real reason why things decayed*

Louis Pasteur and the Germ Theory debate

Despite Lister's attempts to convince British surgeons that Pasteur's Germ Theory explained infections, various theories were still debated in the 1860s and 1870s.

- Most doctors at the time still did not believe that microscopic germs could harm something as large and advanced as a human.
- Louis Pasteur's research related to specific germs that might turn liquid foods – such as milk – sour, or give diseases to animals. It did not relate to those that might make people ill.
- An influential doctor, Charlton Bastian, Professor of Anatomy at University College London, had written many articles in the late 1860s that supported spontaneous generation. Many did not want to challenge his views.

Lister and the antiseptic approach

- Spray carbolic acid on the surgeon's hands and operating area
- Soak the instruments and bandages in carbolic acid
- In August 1865, he mended the fractured leg of a young boy, Jamie Greenlees
- As the skin of Jamie's leg was broken it was likely to be infected and usually would be amputated
- Instead, Lister set the bones and used dressings that had been soaked in carbolic acid
- After six weeks, Jamie walked out of hospital

Lister's conclusion

- In 1867, Lister published the results of 11 cases of compound fracture, explained his techniques in lectures, and publicised Pasteur's Germ Theory through his explanation of the antiseptic technique
- Lister said that the microbes in the air caused the infection, not spontaneous generation

Reactions to Lister's work in Britain

- Lister's ideas were criticised
- The public health debate focused on chemical causes of infection
- Lister's biological explanation was unfamiliar
- British surgeons offered alternative explanations
- Spontaneous generation was supported by influential doctors like Charlton Bastian

Advances in medical science in nineteenth-century Britain

RECAP

The problem of pain

- In 1800, surgery was a terrifying prospect because surgeons could not control or stop pain during an operation.
- Before 1800, there were some pain deadening substances that had been known for centuries, such as hashish, mandrake and opium. But it was difficult to judge an effective dose.
- Alcohol was used but it stimulated the heart and caused heavy bleeding in a wound.
- The result was that surgeons had to operate quickly to reduce pain and would not attempt complicated internal surgery.

New anaesthetics: chemistry to the rescue!

Nitrous oxide: an account published by Humphrey Davy in 1800 described its effects – hysterical laughter and no pain. Not used until 1844 when the American dentist Horace Wells used it to remove teeth.

Ether: in 1842, William Clark, another American dentist, used ether for tooth extraction and in March that year, Dr Crawford Long removed a neck growth from a patient using it. In 1846, William Morton gave a public demonstration of ether anaesthesia. In December 1846, Robert Liston amputated a leg using it. But it was difficult to inhale, caused vomiting, and was highly flammable.

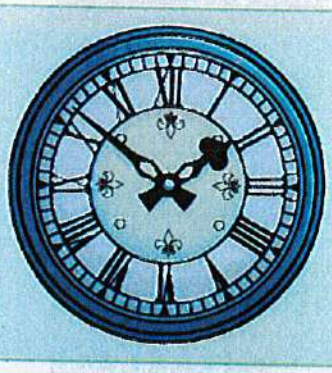
Chloroform: a safe and effective anaesthetic, discovered by Dr James Simpson in 1847.

Simpson developed effective anaesthetics in 1847 solving the problem of pain

- James Simpson was Professor of Midwifery at Edinburgh University.
- He used ether as an anaesthetic (pain relief) but wanted to discover a more effective method.
- In 1847, Simpson discovered chloroform was an effective anaesthetic after experimenting with friends.
- Simpson quickly used chloroform during childbirth and other operations.
- Simpson wrote articles encouraging other surgeons to use it. He argued that chloroform allowed surgeons to do longer or more complex operations.
- Chloroform was not accepted by everyone until Queen Victoria used it during childbirth in 1853. She later 'blessed' the drug.
- Some surgeons stopped using chloroform by 1870 because it did not reduce mortality (death) rates. Longer operations led to increased blood loss and deeper infections. It was also hard for an accurate dose to be given.

The reasons for the opposition to anaesthetics

Surgeons were used to operating quickly and on a conscious patient.



Some army surgeons during the Crimean War (1853–56) thought that soldiers should dutifully put up with the pain.

In the early days of using chloroform, some patients died because it was not understood that patients of different sizes needed different amounts of chloroform. Famously, Hannah Greener died from an overdose in 1848 during an operation to remove her toenail.

There were religious objections as pain in childbirth was thought to be God's will.

In 1867 Lister developed antiseptic surgery

1867: after reading about the Germ Theory, Joseph Lister experimented with carbolic acid spray to reduce infection during surgery. Mortality rates (deaths) fell from 46 per cent (in 1867) to 15 per cent (by 1870)	**1870:** Lister started to sterilise his operating room and patients' wounds with carbolic acid	**1871:** Lister invented a machine to automatically spray his operating room with carbolic acid	**1877:** Lister started to train British surgeons in London	**1880:** Lister started to use sterilised catgut for internal stitches

- Lister's methods were not accepted by everyone because:
  - carbolic spray slowed operations
  - it made operating conditions unpleasant
  - some surgeons were not careful so did not have the same success as Lister.

Aseptic surgery

By the 1880s, British doctors had accepted Germ Theory and its role in explaining infection. By the 1890s, surgeons in Europe and North America went beyond Lister's antiseptic methods and developed **aseptic** surgery, aiming to remove microbes before an operation began rather than kill them as it progressed.

Surgeons had to be scrubbed, wearing gowns and new, thin flexible gloves, and using sterilised instruments. The first British surgeon to use rubber gloves was Berkeley Moynihan in the 1890s. Facemasks, rubber gloves, surgical gowns, and replacing huge public operating theatres with smaller rooms dramatically reduced infections.

Individuals pioneered new techniques in surgery increasing survival rates

Person and date	Invention/change	Significance
Charles Chamberland, 1881	Steam steriliser for medical instruments	Removed the need for carbolic acid and increased surgery survival rates. Few surgeons used it due to the time it took and cost
Gustav Neuber, 1886	**Aseptic surgery**: this is when all possible germs are removed from the operating theatre	Built on Lister's ideas and aided by Koch's discovery of the bacterium which caused septicaemia. Reduced mortality rates. In 1886 he set the standards for others to follow
Berkeley Moyniham, 1890s	First in Britain to wear surgical gloves and to change into sterile white garments for surgery	Took a long time for other surgeons to copy him

SUMMARY

- In 1800, there was no effective pain relief during surgery. Therefore surgeons had to operate quickly.
- In 1847, James Simpson found an effective safe anaesthetic – chloroform.
- Opposition to the use of anaesthetics was overcome when Queen Victoria used it in childbirth.
- The risk of infection from surgery remained until Louis Pasteur's Germ Theory was accepted.
- Joseph Lister publicised Germ Theory through his use of carbolic acid to kill bacteria during surgery.
- Many doctors did not accept that germs caused disease: they thought germs were the product of disease and occurred through spontaneous generation.
- Surgeons opposed Lister's methods as they disliked the fuss of using carbolic acid, preferred to work quickly, and had their own methods to deal with infection.
- Germ Theory was advanced by the 1866 cattle plague which proved that one microbe could cause illness by contact.
- The theory was further advanced by John Tyndall, who argued against Charlton Bastian about spontaneous generation, and by Robert Koch's work on cholera and typhoid.

Further impact of Germ Theory in Britain

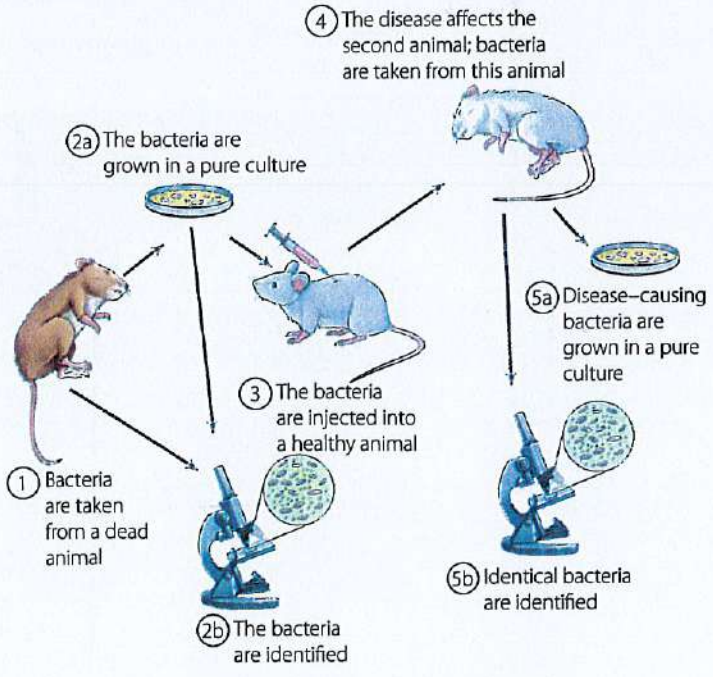
Robert Koch

Robert Koch was a German doctor who applied Pasteur's Germ Theory to human diseases. He was the founder of bacteriology – the study of bacteria.

- His work went against the view that most germs were very similar.
- He identified the microbe responsible for anthrax in 1876.
- He identified the deadly cholera germs in 1884 and tuberculosis germs in 1882.

Robert Koch's methods

- He proved that specific bacteria were responsible for a specific disease by injecting and retrieving the bacterium from successive experimental animals.
- He improved the growing of microbes on solidified agar (a seaweed extract).
- He discovered dyes to stain specific microbes so they stood out under a microscope.
- He perfected a lens to photograph microbes, allowing other scientists to recognise them.
- Koch's team helped to train many young scientists to use his methods.



▲ **Koch's laboratory method**

Germ Theory accepted in Britain, 1870s

- Microscope research was conducted into the life cycle of germs by scientists William Dallinger and John Drysdale in 1874.
- John Tyndall continued to lecture British doctors on Koch's discoveries.
- Dr William Roberts developed a medical version of the Germ Theory of disease.
- In 1879, the surgeon William Cheyne translated Koch's work and explained how the microbes present in wounds did not always produce disease.

War

France and Germany were rivals because France had lost a war against Germany in 1871

Government and finance

Both Pasteur and Koch had a laboratory and a scientific team paid for by their governments

Teamwork

Between 1880 and 1884, Pasteur and his team developed a vaccine for rabies; in 1885 they proved it worked on humans as well as animals by saving a young boy

Factors in the struggle to develop vaccines

Individual character

Pasteur was a determined scientist despite suffering a stroke and losing his daughter to typhoid

Between 1876 and 1881, Pasteur was motivated by Koch's success identifying anthrax

Competition

From 1888 to 1890, there was research rivalry over diphtheria; one of Pasteur's scientists, Pierre Roux, showed that the diphtheria germ produced a poison or toxin

In 1890, Emil Behring, one of Koch's students, showed that weakened diphtheria germs could produce an antitoxin

Improvements in public health

RECAP

Cholera and public health

There were great changes to the way people lived and worked in Britain in the late eighteenth and nineteenth centuries. This had a major impact on public health.

Industrialisation

- Britain's cities grew quickly from 1800. For example, Sheffield's population of just 12,000 people in 1750 was over 150,000 by 1850.
- Thousands of people moved from the countryside to cities like London, Sheffield, Birmingham, Leeds and Manchester to work in the new factories of the Industrial Revolution.

Conditions in the cities

- A single factory would employ hundreds of people, so factory owners quickly built rows of 'back-to-back' houses.
- Many workers were squeezed into each house, often with five or more people living in one small room.
- Few of the houses had toilets; most were outside and shared with other families.
- Water for drinking and cooking came from a pump fed by the local pond or river, which would also take away sewage.
- There were no rubbish collections, no street cleaners or sewers, and no fresh running water.

In the 1800s, industrial towns grew rapidly leading to significant public health problems

- **Overcrowding** was a common problem. A large family might live in one small room and share toilets and water pumps with many families.
- Infectious diseases such as typhus and typhoid spread quickly.
- There were few safety rules in the workplace. Many people worked in dangerous environments and became ill. For example, chimney boys suffered from scrotal cancer from soot particles and coal miners from pneumoconiosis from breathing in coal dust.
- There was no regulation of food or hygiene. Milk might be watered down and re-coloured using chalk powder.

Some of the most common diseases of the 1800s

Disease	Cause	Description
Typhoid	Contaminated water or food	Spread by poor sanitation or unhygienic conditions; sewage would get into the water supply that people drank
Tuberculosis (TB)	Germs passed in the air through sneezing or coughing	Spread rapidly in crowded areas; another type of TB was caused by infected cows' milk
Cholera	Contaminated water or food	Several cholera epidemics swept the country in the early 1800s

Health problems in the cities

- As a result of the poor living conditions and overcrowding, diseases like typhoid, tuberculosis and cholera were common.
- In 1831, a cholera outbreak killed around 50,000 people. Victims were violently sick and suffered from painful diarrhoea before dying.
- There were further cholera epidemics in 1837, 1838, 1848, 1853–54 and 1865–66.
- Cholera was a waterborne disease but at this time many believed it was spread through the air, as a miasma or 'infectious mist' given off by rubbish and human waste.
- This led some towns to clean up their streets; the importance of clean drinking water wasn't understood.
- Governments in all major European nations were concerned about epidemics but they did not know how to deal with them.
- A link had been made between the poor living conditions and the rising death rate – but in the early 1800s people did not know what really caused disease.

Snow proved that cholera was caused by infected water

- Britain faced many deadly cholera epidemics between 1831 and 1866.
- Cholera causes watery diarrhoea and sickness leading to rapid dehydration and death. It was greatly feared.
- People did not know what caused **cholera**. The common explanation was miasma (bad air).
- John Snow thought differently. In 1849 he wrote a book arguing it was caused by infected water.
- During the 1854 epidemic, John Snow proved the link between cholera and dirty water.
  - He did house-to-house interviews and mapped the location of each cholera case.
  - He worked out which water pump the infected houses used. He removed the handle of that water pump. The outbreak ended.
  - Further exploration found that the lining of the nearby cesspit had cracked. Its contents had leaked into the drinking water.
- Snow's discovery was made before Pasteur published his Germ Theory.

ndividuals played a significant role in public health eform in the 1800s

Individual	Public health reform
William Farr	Introduced compulsory registration of births, marriages and deaths in 1837. This meant the authorities were more aware of health problems
Thomas Southwood Smith	Studied diseases caused by poverty. His work was used by Edwin Chadwick as evidence for the need t improve public health
Edwin Chadwick, Secretary to the Poor Law Commissioners	Researched living conditions and health of the poor in towns. Published his findings in *Report on the Sanitary Conditions of the Labouring Population*. He linked poverty to poor living standards and ill health

Dr Snow links cholera to contaminated water

- During another cholera outbreak in 1854, 20,000 people died. Dr John Snow noted that all the victims lived near the same water pump in Broad Street, Soho, London. He removed the pump handle and so everyone had to use another water pump. The outbreak stopped.
- Snow later found that a street toilet was leaking into the pump's water source. Snow suspected that cholera was not airborne (miasma), but contagious and caught by contact with infected water.

The Great Stink

- Despite Snow's findings, public health didn't improve. City streets and water supplies remained as filthy as ever.
- In the summer of 1858, a heat wave caused the filthy River Thames to produce the 'Great Stink'.
- This alarmed politicians so much that, combined with the new evidence about cholera, they agreed to pay for sanitary improvements.
- Parliament gave the engineer Joseph Bazalgette enough money to build a new sewer system for London. By 1866, he had built an 83-mile sewer system which removed 420 million gallons of sewage a day.

Modern treatment of disease

RECAP

Prevention and cure

During the 1800s, knowledge about disease increased greatly. Doctors and scientists discovered which bacteria caused which diseases. A search began to find ways of **preventing** people from getting the diseases, and also **curing** people who already had these diseases.

Magic bullets

- Robert Koch's assistant, Paul Ehrlich, found chemicals that would not only stain a specific type of bacteria, but kill it too!
- Ehrlich discovered a chemical cure for syphilis in 1909.
- The chemical cures were known as '**magic bullets**'.
- Prontosil, a red chemical, worked against the germs that caused blood poisoning.
- More magic bullets or 'sulpha drugs' were developed to cure or control meningitis, pneumonia and scarlet fever.

The first antibiotic

By the 1920s, the highly-resistant **Staphylococcus** bacteria (which could cause food and blood poisoning) remained undefeated by any magic bullet

→ During the First World War, the bacteriologist Alexander Fleming had seen how soldiers were suffering from the ill effects of the Staphylococcus germ

↓ Fleming became determined to find a better way to treat infected wounds and conducted detailed experiments

← In 1928, Fleming went on holiday and left several plates of Staphylococcus germs on a bench in his laboratory; when he came home, he noticed a large blob of mould in one of the dishes

↓ Upon investigation, he noticed that the Staphylococcus germs next to the mould had been killed

→ Fleming took a sample of the mould, and found it to be the penicillin mould; it appeared that a spore from this mould, grown in a room below Fleming's, had floated up the stairs and into his laboratory

The development of penicillin

We know today that penicillin is an antibiotic, but Fleming didn't realise this at the time and thought it was a natural antiseptic.

- In the 1930s, researchers at Oxford University read about penicillin's ability to kill germs.
- Scientists Howard Florey and Ernst Chain successfully tested penicillin on eight mice.
- Their next move was to test it on humans and, over a period of months, they produced enough penicillin to use on a patient with a bad infection.
- When the patient was injected with penicillin, the infection began to clear up. However, the patient died when the penicillin ran out. The next step was to try to work out how to produce masses of it.

How was penicillin mass-produced?

- The Second World War was a major factor in transforming the supply of penicillin because a steady supply of it was vital in treating soldiers with infected wounds.
- In June 1941, Florey met with the US government who agreed to pay several huge chemical companies to make millions of gallons of it.
- By the end of the war in 1945, Britain and the USA were working closely together and 250,000 soldiers were being treated. Drug companies began using their production methods to make penicillin for public use as soon as the war ended.

Penicillin was a great step forward in treatment

- **1880s:** Joseph Lister used **penicillin** to treat an infected wound. He did not continue to use it or leave any records of his work with it.
- **1928:** Alexander Fleming rediscovered the properties of penicillin. He published his findings but took no further action.
- **1937:** Florey and Chain researched penicillin after reading Fleming's article.
- **1940:** they proved penicillin's potential by experiments on mice.
- **1941:** penicillin first tested on a human being. It was a success.
- **1942:** due to Second World War, the US and British governments funded the production of penicillin. By 1944 penicillin was available to treat all wounded Allied soldiers on D-Day.
- **Today:** penicillin is a common form of treatment saving many lives. However, some germs are becoming resistant to antibiotics.

The impact of penicillin

- Around 15 per cent of wounded British and US soldiers would have died without penicillin.
- Thousands of injured soldiers returned to service much more quickly than they would have done without penicillin treatment.
- After the war, penicillin became available for doctors. It was classified as an antibiotic, and has gone on to save the lives of millions of people.
- Other antibiotics followed: streptomycin (1944), for example, proved an excellent treatment for tuberculosis, while tetracycline (1953) was great for clearing up skin infections. Mitomycin (1956) has been used as a chemotherapy drug for treating several different types of cancer.

Science and treatment into the twenty-first century

The second half of the twentieth century saw an explosion in scientific and medical discoveries and developments that proved significant in achieving a fuller understanding of health and medicine.

The diagram below shows some of the most significant changes in the fields of knowledge about the body and disease, surgery, and treatment:

Key developments in health and medicine since 1945

Body and disease

1953: stem cells (multi-cellular organisms that are able to renew themselves) discovered; in 2013, the first human liver was grown from stem cells

1953: scientists at Cambridge University (Francis Crick and James Watson) map out the DNA structure; the understanding of DNA leads to such developments as gene therapy, genetic screening and genetic engineering

1970s and 1980s: technology that we take for granted today was developed: CAT scanners that produce 3D images of the body (1973); endoscope probes that allow doctors to 'see' inside the body (1975); MRI scanning (1987)

Treatment

Between 1946 and 1969: free vaccines available in the UK for TB, diphtheria, whooping cough, tetanus, polio, measles and rubella (German measles)

1957: the drug thalidomide is developed in Germany; used to treat morning sickness during pregnancy but causes terrible deformities in babies

1970: a British scientist develops the drug cyclosporine, which prevents the body rejecting transplanted organs

1978: doctors use IVF fertility treatment to help childless women become pregnant

Surgery

1950: first open-heart surgery to repair a 'hole' in a baby's heart; first pacemaker is fitted in 1958, followed by the first British heart transplant (1968)

Livers, lungs, kidneys, pancreases, bone marrow (and even faces) can also be transplanted today

Miniature hearing aids (1952), hip replacements (1972) and skin grafts (1984) are now common

Alternative treatments have become popular but scientific medicine largely rejects them

- Alternative medicines are treatments outside of mainstream practice.

Example 1: homeopathy	Example 2: acupuncture
Homeopathy uses substances very diluted with water to stimulate the body's natural healing power It is not recognised by **NICE**, which states that it should not be used for the treatment of any health problems	**Acupuncture** involves stimulating nerves using needles. It is widely used around the world NICE only recommends it for chronic tension-type headaches and migraines

- Interest in alternative medicine has grown following concerns about modern medicine and the negative side-effects of drugs.
- There is a fierce debate about the benefits of alternative medicines. The British Medical Association has referred to homeopathy as 'witchcraft'.

Alternative treatments and 'positive health'

- Since the 1980s, alternative therapies have become more and more popular in Britain, and some of them (such as acupuncture, hypnotherapy and aromatherapy) are now available on the NHS.
- In recent years, there has been a greater emphasis placed on prevention rather than cure – this is sometimes known as 'positive health'. People are learning that regular exercise and a good diet can help prevent killers such as obesity and heart disease.
- There has also been an increase in screening, which focuses on checking people who seem to be healthy, aiming to find those who have the early signs of a serious illness like lung or breast cancer.

The impact of war and technology on surgery

The impact of the First and Second World Wars

X-rays

Discovered in 1895; hospitals used them to look for broken bones and disease before the First World War

During the war, proved their effectiveness on the battlefield when mobile X-ray machines were used, developed by Polish scientist Marie Curie

Allowed surgeons to find out exactly where in the wounded soldier's body bullets or pieces of shrapnel had lodged – without having to cut him open

Plastic surgery

During the First World War, Harold Gillies (a London-based army doctor) set up a special unit to graft (transplant) skin and treat men suffering from severe facial wounds

Queen's Hospital in Kent opened in 1917; by 1921 it provided over 1000 beds for soldiers with severe facial wounds

During the Second World War, Archibald McIndoe used new drugs such as penicillin to prevent infection when treating pilots with horrific facial injuries

Blood transfusions

In 1900, Karl Landsteiner discovered blood groups, which helped doctors work out that a transfusion only worked if the donor's blood type matched the receiver's

It was not possible to store blood for long until 1914 when Albert Hustin discovered that sodium citrate stopped blood from clotting

British National Blood Transfusion Service opened in 1938

Large blood banks developed in both the USA and Britain during the Second World War

Other developments relating to the wars

Broken bones: new techniques were developed during the First World War to repair broken bones. For example, the Army Leg Splint (or Keller-Blake Splint) was developed, which kept a broken leg 'in traction'. The splint is still in use today.

Heart surgery: this progressed during the Second World War. US army surgeon Dwight Harken, stationed in London, cut into beating hearts and used his bare hands to remove bullets and bits of shrapnel.

Diet: as a result of food shortages during wartime, many people grew their own food. This improved their diets because the food the government encouraged people to grow – fresh vegetables for example – was very healthy.

Hygiene and disease: in order to keep Britain 'fighting fit' during the Second World War, there was a campaign that warned against the dangers of poor hygiene. A national immunisation programme against diphtheria (a bacterial infection which killed many children) was launched during the war too.

Drug development: penicillin, the first antibiotic, was developed in the years leading up to the Second World War. The British and US governments realised how important this new 'wonder drug' could be in curing infections in deep wounds. By 1944, enough penicillin was produced to treat all the Allied forces in Europe.

Other modern surgical methods

Keyhole surgery: surgeons can now perform operations through very small cuts. Using miniaturised instruments and small fibre-optic cameras linked to computers, surgeons can magnify the areas they are working on so they can re-join nerves and blood vessels.

Radiation therapy (also known as radiotherapy): although this has been used for over 100 years, the methods of treatment are developing all the time. Radiation therapy involves the use of high-energy radiation to shrink tumours and kill cancer cells. Sometimes a radioactive substance such as radioactive iodine is used, which travels in the blood to kill cancer cells.

Laser surgery: surgery using lasers (rather than a scalpel) has become increasingly popular since a laser was first used in an eye operation in 1987. Lasers are increasingly used to treat a variety of skin conditions, help clear blocked arteries, remove tumours and ulcers, and control bleeding.

SUMMARY

- Some types of medicine can develop at a greater rate during wartime than in peacetime.
- During wartime, governments spend lots of money on the development of the latest medical techniques. They know that if medical services are good, then more injured soldiers will get fitter quicker and back on the battlefield.
- The First World War saw major developments in the fields of X-rays, blood transfusions and plastic surgery.
- The Second World War saw major developments in plastic surgery and drug treatments.
- Scientific and technological advances have led to dramatic changes in the way doctors have treated some medical conditions since the war.
- Some of the latest surgical methods include laser surgery, keyhole surgery and radiation therapy.

Modern surgical methods

Major technological breakthroughs continued in the field of surgery after the world wars. Improved anaesthetics allowed patients to be unconscious for longer, so more complicated operations could be attempted, while better antiseptics increased the success rate of difficult operations because they cut down the chances of deadly infection. Scientific and technological advances have led to dramatic changes in the way doctors can treat some medical conditions.

Transplant surgery

Timeline

1952

- The first transplant of a whole organ (a kidney) is carried out; the first in the UK is in 1960

1967

- Christian Barnard, a South African heart surgeon, performs the first heart transplant; the patient lives for 18 days (the first in the UK is in 1968)

1970

- British scientist Roy Calne develops the drug cyclosporine, which prevents the body rejecting transplanted organs

1986

- British woman Davina Thompson becomes the first heart, lung and liver transplant patient

2006

- First partial face transplant is carried out

2008

- First full face transplant

Modern public health

RECAP

Britain in 1900 and after

- By 1900, millions of ordinary British citizens were still living in desperate poverty.
- Overcrowded, unsanitary housing was still common in Britain's industrial towns.
- People worked long hours for low wages and could not afford decent food or to see a doctor if they were ill.
- After 1900, the government began to have more involvement in public health.

The reports of Booth and Rowntree

At the beginning of the twentieth century, two special investigations highlighted the plight of the poor.

Charles Booth's report

Called *Life and Labour of the People in London*

Found that around 30 per cent of Londoners were so poor that they didn't have enough money to eat properly, despite having full-time jobs

Demonstrated that there was a link between poverty and a high death rate

Seebohm Rowntree's report

Called *Poverty: A Study of Town Life*; his investigations took place in York

Found that 28 per cent of the population did not have the minimum amount of money to live on at some time of their life

The Boer War

- In 1899, a large-scale army recruitment campaign took place to find men to fight in the Boer War.
- Army chiefs were alarmed by the fact that 40 per cent of the young men who volunteered were unfit to be soldiers, mostly due to poor diet and poverty-related illnesses.
- The government set up a special committee to enquire into the 'Physical Deterioration of the People'.
- In 1904, the committee released its report, concluding that many men were failing to get into the army because they led such unhealthy lives.

Government action on public health

- The reports fuelled fears that the unhealthy state of Britain's workers might lead to the decline of Britain as a great industrial power. Germany, for example, which had a good system of state welfare for workers, was beginning to produce as much coal, iron and steel as Britain.
- Some politicians, including many from the Liberal Party (including Winston Churchill and David Lloyd George), believed that direct action from the government was the way to improve the public health, welfare and productivity of the nation.
- The Liberal Party was also worried about the popularity of the Labour Party, which had been founded in 1900, so they wanted measures that would appeal to working people and stop them voting for Labour.

The Liberal reforms

In 1906, the Liberal Party won the general election and took action.

Timeline:

1906

- Free school meals provided for poor children

1907

- School medical service set up – free medical inspections, followed later by free treatment

1908

- Children and Young Person's Act introduced; children become 'protected persons', which means that parents are breaking the law if they neglect their children

1908

- Old Age Pensions are introduced, paid for by national taxes

1909

- Britain's first job centres are built

1911

- National Insurance Act introduces unemployment benefit ('the dole'), free medical treatment, and sickness pay

RECAP

The welfare state

During the Second World War, the Beveridge Report argued that the state should provide support for vulnerable people. This led to the creation of the 'welfare state'.

Impact of two world wars on public health

- The need for healthy soldiers to defend Britain highlighted the importance of tackling poverty and poor health.
- After the First World War, the building of overcrowded back-to-back housing was banned.
- In 1918, local councils had to provide health visitors, clinics for pregnant women, and day nurseries.
- In 1919, councils began to build new houses for poorer families and, by 1930, a huge slum clearance programme had started.
- But during the Second World War people were shocked at the health of the evacuated city children.

The welfare state

The National Health Service (NHS) began in 1948 to provide free health treatment for everyone.

A weekly family allowance payment helped with childcare costs.

The very poor received financial help or 'benefits'.

More slums were demolished and new houses built. Twelve new towns were created. By 1948, 280,000 council homes were being built each year.

The Labour government and the welfare state

After the war the Labour Party, led by Clement Attlee, won the election by promising to follow Beveridge's advice and set up the welfare state to look after the sick, the unemployed and children.

The Beveridge Report

In 1942, a report about the state of Britain by Sir William Beveridge (an economist and social reformer) sold over 100,000 copies in its first month of publication.

It said that people had a right to be free of the 'five giants' that could ruin their lives:

- disease
- want (need)
- ignorance
- idleness
- squalor (very poor living conditions).

The report suggested ways to improve quality of life, and said that the government should 'take charge of social security from the cradle to the grave'.

Development of the NHS

- When Aneurin Bevan (Labour Minister for Health) introduced the NHS in 1948 he overcame opposition from doctors who did not wish to come under government control or lose income.
- Bevan won them over by promising them a salary and allowing them to treat private patients as well.
- Over the years, the cost of welfare state services like the NHS has rocketed. In 2015–16 the NHS budget was £116 billion in total.
- The NHS is not totally free. Working people today have to pay for doctors' prescriptions and dental treatment.

Glossary: Health and the people: c1000 to the present day

Acupuncture A form of alternative medicine that involves stimulating sensory nerves under the skin and in the muscles of the body using needles

Amputation Surgical removal of part of the body

Anaesthetic Pain relief

Anatomy The science of understanding the structure of the body

Ancients A collective term for doctors such as Hippocrates and Galen who worked in ancient Greek and Roman empires

Antiseptic Method to prevent infection

Aseptic surgery When all possible germs are removed from the operating theatre

Astrology The study of the movement and position of planets

Bath house A place where people paid for a bath to get clean

Beveridge Report Set out proposals for welfare changes after the Second World War

Bleeding Opening a vein or applying leeches to draw blood

Cauterising Medical practice or technique of burning a part of a body to remove or close off a part of it

Chloroform Type of anaesthetic

Cholera Watery diarrhoea and sickness leading to rapid dehydration and death

Clinical observation Examining and observing a patient and keeping careful records

Design theory The belief that God designed humans

Diphtheria Infectious disease spread through bacteria

Dissection Cutting up and examination of a body

Doctrine of Signatures States that herbs that resemble various parts of the body can be used by herbalists to treat ailments of those parts of the body. The doctrine dates from Galen's time

Epidemic Widespread outbreak of disease

Flagellants People who whipped themselves to show that they had repented their sins

Homeopathy A form of alternative medicine based on the use of substances diluted with water

Infection Formation of disease

Inoculation Involves a person being given low dose of smallpox making them immune to a serious outbreak

Keyhole surgery Surgery through small incision

Laissez-faire Belief that the government should not interfere in people's lives

Ligature A cord used to tie something very tightly, for example in order to stop bleeding

Miasma theory Belief that bad smells caused illness

Microbiology Branch of science that deals with microorganisms

Mortality Death

National Health Service (NHS) Taxpayer-funded state healthcare for UK citizens

NICE The National Institute for Health and Care Excellence which approves new drugs or treatments for use in Britain

Overcrowding Too many people in a space

Penicillin Life-saving antibiotic

Physician Doctor

Plague doctor A doctor who treated victims of the plague

Privies Toilets

Public health Helping people keep healthy by protecting them from disease and promoting health to prolong life

Quack A person who falsely claims they hold a medical qualification

Regulation Rules made by authorities

Sanitation Methods to ensure hygiene and prevent disease, for example sewers

Theory of Four Humours A theory advocated by Hippocrates on the working of the human body. It stated that the body was made up of four humours that needed to be balanced for good health. The four humours were blood, phlegm, black bile and yellow bile. Each humour was linked to an element and in turn a season

Typhoid Infectious disease spread through bacteria

Urine charts Used by doctors to identify the colour of a patient's urine when diagnosing illness

Vaccination Injection into the body of killed or weakened organisms to give the body resistance against disease

Watchman Prevented people entering and leaving infected houses during the Great Plague

Welfare Statutory procedure or social effort designed to promote the basic physical and material well-being of people in need

Zodiac charts A diagram used to explain how star formations influenced each part of the body

GCSE History AQA 2016-18
PLC Paper 2: Section B
Elizabethan England, 1568-1603

Topic	I can explain.....	Red	Amber	Green
Part one: Elizabeth's court and Parliament				
Elizabeth I and her court	background and character of Elizabeth I;			
	court life, including patronage			
	key ministers			
	The difficulties of a female ruler:			
	relations with Parliament; the problem of marriage and the succession;			
	he strength of Elizabeth's authority at the end of her reign, including Essex's rebellion in 1601.			

Topic	I can explain.....	Red	Amber	Green
Part two: Life in Elizabethan times				
A 'Golden Age'	A 'Golden Age': living standards and fashions			
	growing prosperity and the rise of the gentry			
	the Elizabethan theatre and its achievements, attitudes to the theatre.			
The historic environment of Elizabethan England – Hardwick Hall	Bess of Hardwick; her background and involvement in court life			
	Hardwick Hall; its features and functions			
The poor	reasons for the increase in poverty			
	attitudes and responses to poverty			
	the reasons for government action and the seriousness of the problem.			
English sailors	Hawkins and Drake; circumnavigation 1577–1580			
	voyages and trade; the role of Raleigh.			

Topic	I can explain.....	Red	Amber	Green
Part three: Troubles at home and abroad				
Religious matters	the question of religion, English Catholicism and Protestantism			
	the Northern Rebellion;			
	Elizabeth's excommunication; the missionaries; Catholic plots and the threat to the Elizabethan settlement			
	the nature and ideas of the Puritans and Puritanism			
	Elizabeth and her government's responses and policies towards religious matters			
Mary Queen of Scots	background			
	Elizabeth and Parliament's treatment of Mary			
	The challenge posed by Mary; plots;			
	execution and its impact			
Conflict with Spain	reasons; events (support for the Dutch Protestants); naval warfare			
	tactics and technology			
	the defeat of the Spanish Armada			

Elizabethan England c1568–1603 Timeline

The colours represent different types of event as follows:

Blue: economic events

Red: political events

Black: international events or foreign policies

Yellow: social events

Green: plots and rebellions

1558 **November** – Elizabeth crowned Queen of England at the age of 25

1559 Elizabeth's religious settlement

1569 **November** – The Northern Rebellion

1570 Norwich authorities conducted first survey of the poor, model for Poor Law of 1601

1570 **April** – The Pope issues the *Regnans in Excelsis*, which excommunicates Elizabeth from the Catholic Church

1571 **November** – The Ridolfi Plot

1580 Jesuit priests begin to arrive in England from Europe

1580 **September** – Sir Francis Drake completes the first circumnavigation of the globe

1585 Elizabeth sends troops to the Netherlands to support Dutch Protestant rebels

1583 John Whitgift appointed Archbishop of Canterbury and cracks down on Puritanism

1586 **July** – The Babington Plot is discovered, leading to the trial of Mary, Queen of Scots

1587 Roanoke colony is established in North America

February – Mary, Queen of Scots is executed

1588 **July–September** – The Spanish Armada

1590 First of several bad harvests leads to food shortages; many country people begin to move to the towns

1599 Opening of the Globe Theatre in London

1600 Establishment of the East India Company

1601 **February** – Essex's rebellion

Poor Law introduced

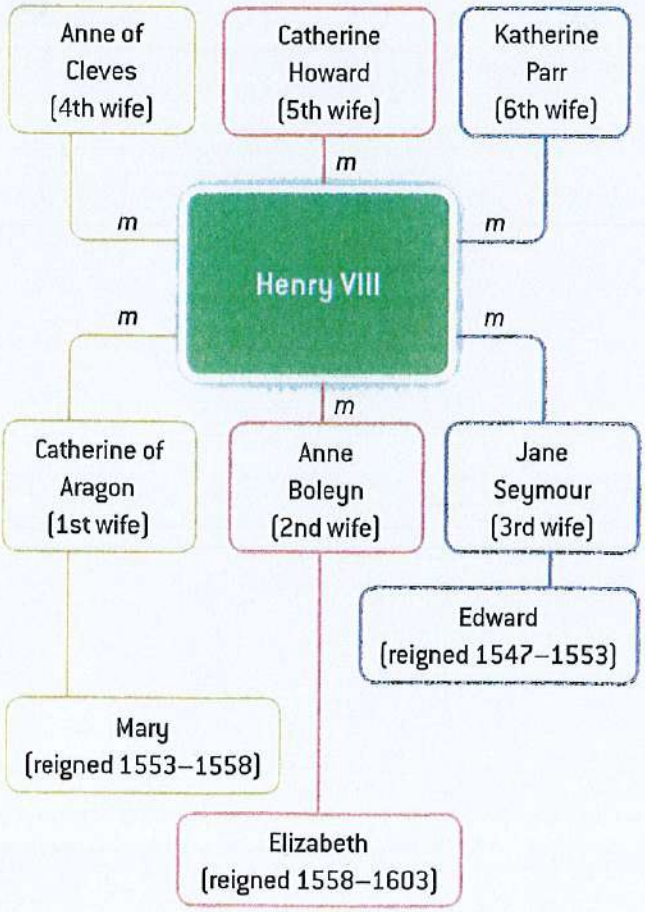
1603 **March** – Elizabeth I dies and is succeeded by James I

Elizabeth and her court

RECAP

Queen Elizabeth I, reigned 1558–1603

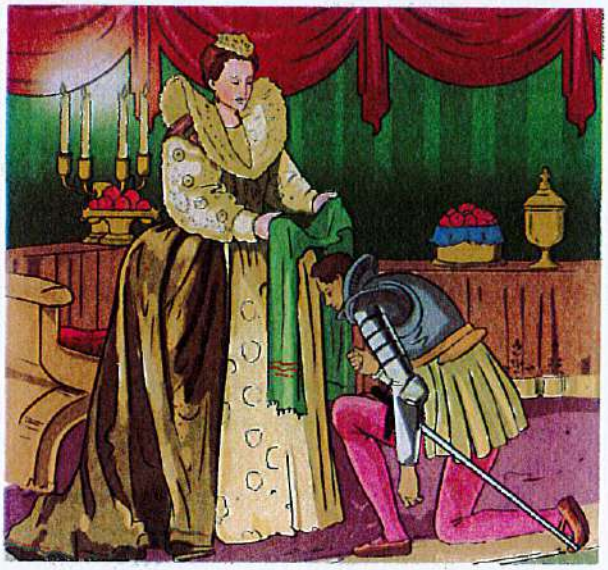
When she was born, no one ever expected Elizabeth to become monarch. Her mother, **Anne Boleyn**, had been executed for treason on the orders of her father, King **Henry VIII**. Further, Elizabeth's elder sister, Queen **Mary I of England**, saw her as a potential threat to her own rule. The family tree shows how unlikely Elizabeth's coronation would have seemed when she was a child. She was the middle of Henry's three children and both her younger brother and her older sister came before her in the line of succession. Yet, as a princess, Elizabeth had been educated and brought up within the royal household. She learned quickly that the court could be a dangerous place for her if she was not careful in what she said, did, and whom she trusted.



Power in Elizabethan England

Elizabeth was only 25 when she became queen and she needed to establish her authority quickly. Although being queen gave her power, she could not do as she pleased. Her government had a clear structure of advisors and other powerful figures. Most of the power was held by a few key trusted individuals in Elizabeth's court. Many, but not all, of these were **privy councillors**. The queen could ensure support through **patronage**.

Patronage was an important way of ensuring loyalty from courtiers. Elizabeth could award titles, land, monopolies and other powerful positions and money-making opportunities in exchange for obedience and support.



Court life

The **royal court** and the government were not the same thing. The court was made up of all the officials, servants and advisors that surrounded Elizabeth. The court was the centre of power, but also the source of the latest trends and fashions. It included the Privy Council, but Justices of the Peace and Parliament were not part of it. The government was made up of the queen and her closest advisors, usually privy councillors, but always men whom she trusted.

Who had power?

Lord Lieutenants

- Appointed by the queen.
- Responsible for running a particular area of the country.
- Responsible for raising a militia to fight for the queen if needed.
- Many also served on the Privy Council.

Parliament

- Made up of the House of Lords and the House of Commons.
- Had influence over tax and was responsible for passing laws.
- The queen could choose when to call Parliament and was free to ignore their advice.

Privy Council

- Responsible for the day-to-day running of the country, dealing with all policy areas.
- Although the queen could technically appoint whoever she wished, in reality she had to appoint the most powerful landowners in the country, in order to prevent rebellion.
- If the council was united, it was almost impossible for Elizabeth to go against their wishes. However, unity was very rare in a group filled with ambitious rivals.
- Led by the Secretary of State.
- William Cecil and Francis Walsingham were two significant and powerful figures who each served as Secretary of State. Both had a huge influence on Elizabeth.

Justices of the Peace

- Several in every county.
- Responsible for maintaining order and enforcing the law.

SUMMARY

- When Elizabeth was a child, no one expected her to be queen.
- The most powerful group in Elizabethan England was the Privy Council, led by the Secretary of State. It was responsible for the daily running of the country.
- Parliament had influence over tax and passing laws, but its power was limited.
- Lord Lieutenants were appointed by the queen to run a particular area of the country.
- The royal court was the centre of Elizabethan power and the source of the latest trends and fashions.

9.1 Elizabeth's character and Court life

Elizabeth's early experiences shaped her time as Queen. The difficulties she faced made her stronger

- Elizabeth's mother, Anne Boleyn, was executed by her father, Henry VIII.
- Elizabeth herself came close to being executed for treason on two occasions. She was accused of being involved in plots against her brother Edward and sister Mary.
- Her traumatic experiences helped mould her character. She was self-reliant, determined, yet cautious. She was also very well educated. These qualities helped make her a successful queen.
- Her right to rule (legitimacy) was questioned by some. Others questioned her ability to rule because she was a woman in what many thought should be a man's role – ruling England.
- Despite this, she ruled for nearly 45 years from 1558 to 1603 and is widely regarded as a very successful monarch.

The Queen used progresses and portraits as propaganda to maintain her image

- A **progress** was when the Queen and her Court went to stay with powerful nobles.
- It was very expensive to entertain the Queen and her Court but rich nobles liked it because it gave them access to the Queen. Some built big houses just so they could attract the Queen to stay with them.
- The progress was also a **propaganda** opportunity for the Queen. It allowed her to impress her leading nobles with her power. They in turn laid on sumptuous banquets and masques to impress her.
- Another way to show your loyalty to the Queen was to have a portrait of her. Many courtiers commissioned one for their house or as miniature to carry with them.
- The Queen's image was strictly controlled. There were approved portraits which artists had to copy.

The Queen's Court was the centre of political life and courtiers competed to get access to Elizabeth

- The Court was not a place but a collection of people. It was made up of the Queen, her advisers and servants together. It existed wherever the Queen was.
- She had about 500 **courtiers** who lived with her and competed for power and influence. In an age when the monarch was so powerful, access to the Queen was crucial to any politician.
- Elizabeth encouraged loyalty by giving loyal courtiers duties at Court (**patronage**).
- To prevent a courtier becoming too powerful, Elizabeth sometimes used a 'divide and rule' tactic (giving competing courtiers equally powerful jobs). This caused rivalry but kept people loyal.
- Life at Court was not all work! There were lavish banquets, masques, plays and tournaments to entertain the Queen and courtiers.

The Privy Council included Elizabeth's most powerful advisers. They met almost every day

- The **Privy Council** was a group of trusted ministers who helped Elizabeth govern England. The most important ministers are shown in the panels.
- Elizabeth's Privy Council had only nineteen members (much smaller than her sister's, Queen Mary, had been). Elizabeth believed that a small group would be more efficient
- Elizabeth's first Council showed her skill as a politician. It was a clever compromise including some of Mary's men but also her own loyal advisers.
- Over time, the Council became a group of full-time politicians including skilled members of the gentry.
- The most important ministers were:

William Cecil (Lord Burghley) – Elizabeth's chief minister

Member of the gentry and former MP. Secretary of State – the most powerful minister. All correspondence passed through him

Intelligent and hard working

Loyal but knew how to manage the Queen

Moderate and cautious. A stabiliser

Robert Dudley (Earl of Leicester) – Elizabeth's favourite

A member of the nobility

'Master of the Horse' – responsible for the Queen's safety

Committed **Puritan**

Often disagreed with Cecil about religion and foreign affairs

Ambitious and a radical. Liked stirring things up

Sir Francis Walsingham – Elizabeth's spy master

A member of the gentry and an MP

Keen Puritan

Secretary of State for foreign affairs. Also in charge of Elizabeth's 'secret service' controlling spies and informers

Often clashed with Cecil

What was Parliament?

- Consisted of lords, bishops and other nobles who sat in the House of Lords and 'commoners' (Members of Parliament – MPs) who sat in the House of Commons.
- Its role was to discuss issues and advise the queen.
- Responsible for passing laws and setting taxes.
- Although the queen could decide when to call Parliament (allow it to meet) and did not have to listen to what it said, in practice she could not ignore it completely. She needed to deal with Parliament very carefully.

Parliament under Elizabeth I

Marriage and succession

Many in Parliament saw it as their duty to find Elizabeth a suitable husband and, by 1566, began to discuss the issue openly. Angry at such interference, she banned them from talking about it again. Elizabeth saw marriage as a decision for her alone.

Religion

The most divisive factor in Elizabethan society was religion and Parliament reflected this. The majority of those in both houses of Parliament were Protestants and supported Elizabeth's religious settlement. When Elizabeth wished to introduce laws that made life hard for Catholics, she found support in Parliament. One area of disagreement, however, was over the issue of Puritanism. A number of powerful Puritans in Parliament tried unsuccessfully to introduce new laws to change the Church of England.

Freedom of speech

An MP named Peter Wentworth was arrested three times during Elizabeth's reign for arguing that MPs should be allowed to speak on any matter they chose. Elizabeth clearly did not agree! Some MPs supported Wentworth's view, but others did not. One of his arrests was organised by other MPs wishing to demonstrate their loyalty to Elizabeth.

Crime and poverty

The issue of poverty was significant in Elizabethan England, particularly when it led to crime. Many MPs recognised that simply punishing the poor did not work and attempted to introduce new poor laws. They were unsuccessful, until 1601, when the Poor Law was finally passed.

Mary, Queen of Scots

The majority of those in Parliament saw Mary, a Catholic, as a clear threat to national security and a significant number of them called for her execution. This pressure, and that of the Privy Council, may have swayed the hesitant Elizabeth into executing her cousin.

Monopolies

The giving of **monopolies** was an important way for Elizabeth to maintain the loyalty of powerful men in England (for example, the sweet wine monopoly given to the Earl of Essex). In 1571, an MP named Robert Bell criticised them as unfair. Other MPs joined him in calling for changes in their use. Elizabeth agreed to make a few changes but MPs pushed for more. In 1601, she made a speech to Parliament in which she cleverly managed to give the impression that she was agreeing to make major changes to how monopolies worked without actually promising very much at all.

How did Elizabeth manage Parliament?

- She made it clear that she was in charge through her words and actions, issuing regular statements about her authority and arresting MPs who went too far in criticising her.
- She had the ability to dismiss Parliament when she wished and could also appoint new members to the House of Lords.
- It was the duty of her privy councillors and nobles to manage Parliament and ensure that they were clear on her wishes.

The difficulties of a female ruler

RECAP

The problems Elizabeth faced

When Elizabeth came to the throne in 1558, aged 25, she immediately had a number of problems to deal with. She was a young woman in a country where men had always held the power.

Succession

- Elizabeth was the last living child of Henry VIII and she had no children of her own. So it was unclear who would **succeed** her if she died before producing an heir. In the past, situations like this had led to violent struggles for power.
- In 1562, she nearly died of smallpox. This drew attention to the uncertainty of England's future. As a result, senior figures were keen that she marry as soon as possible.

Religion

- The Tudor period had seen England's official religion change a number of times, and this had created instability and violence.
- Many Catholics did not trust Elizabeth and some claimed that she had no right to be queen (they did not recognise Henry's marriage to Elizabeth's mother).
- Puritanism, an extreme form of Protestantism, was also seen as a threat. There were a number of Puritans who had hoped to take control of Elizabeth's Church and make it more extreme – this could have damaged the whole religious settlement.

Foreign policy

- Catholic countries like Spain and France wanted influence over England and had the support of the Pope in this aim. The threat of invasion was very real.
- One key area of tension was the Netherlands, where the Protestant population was in conflict with its Spanish rulers. Elizabeth had to decide whether or not to become involved.

Elizabeth's problems

Taxation

- The country was short of money and Elizabeth needed to raise taxes.
- Poverty was widespread and raising taxes would be very unpopular.

Mary, Queen of Scots

- With no direct heir, the next in line to the throne was Elizabeth's Catholic cousin, Mary. Many Catholics saw her as an alternative Queen of England and this made her a serious threat to Elizabeth.

Ireland

- Like her predecessors, Elizabeth considered herself to be Queen of Ireland. In 1559, she faced a major revolt in Ireland – the first of several during her reign.

Elizabeth's early reign was dominated by the 'marriage question'

- Elizabeth was an unmarried woman in a male-dominated world. Both MPs and her councillors expected Elizabeth to marry because:
  - They questioned a woman's ability to rule England alone.
  - They wanted her to use her marriage to make a good **alliance** with a foreign power.
  - They wanted her to produce an heir to rule after her.

Potential suitors

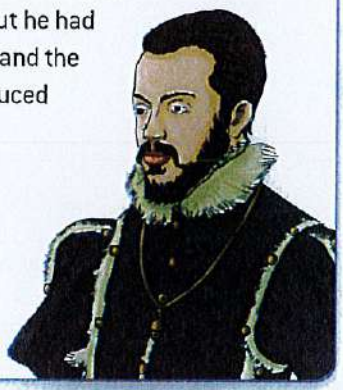
There was no shortage of men who were ready to marry the queen. Three of the most important are shown here.

Francis, Duke of Anjou and Alençon

- The French King's brother and heir to his throne.
- By the time a marriage was proposed, Elizabeth was 46 and probably beyond having children. A childless marriage could result in England falling under French control.
- He was Catholic and many important figures in Elizabeth's court were against the marriage.

King Philip II of Spain

- One of the wealthiest and most powerful men in the world.
- He had been married to Elizabeth's sister, Queen Mary I, but he had rarely visited England and the marriage had not produced an heir.
- He was Catholic.



Robert Dudley, Earl of Leicester

- A childhood friend of the queen and a favourite of hers throughout her reign. Many assumed they were in love.
- A key figure in the royal court and a member of the Privy Council.
- When his wife died, he became free to marry Elizabeth but the scandal surrounding her death (and rumours of his involvement) meant this was almost impossible.

Marriage and succession

For a monarch, marriage was seen as an important duty. It could be a way of cementing alliances. More importantly in Elizabeth's case, it was necessary for her to produce an heir that could succeed her on the throne.

Arguments in favour of marriage

Create an alliance with a foreign country or guarantee the loyalty of a powerful English family.

Produce an heir to continue the Tudor line and stop Mary, Queen of Scots from becoming queen when Elizabeth died.

Arguments against marriage

Loss of authority – either to a foreign ruler or Englishman. By not marrying, Elizabeth – and England – kept their independence.

Giving birth was very risky for the mother.

Her experience of marriage had been bad – her father had married six times and ordered her mother to be executed and her sister's marriage to Philip of Spain had been unhappy and did not produce an heir.

Elizabeth was able to use the possibility of marriage to her advantage when dealing with foreign leaders and important figures in England.

The 1590s were a very difficult decade for Elizabeth

- A series of bad harvests led to food shortages, rising prices and increased poverty.
- England was fighting an expensive war with Spain.
- All Elizabeth's closest advisers died: Dudley in 1588, Walsingham in 1590 and Cecil in 1598.
- A power struggle followed with the two most powerful people being Dudley's stepson, the Earl of Essex, and Cecil's son Robert.
- Elizabeth had no children and refused to name a successor until she was on her death bed. This created political insecurity.

The strength of Elizabeth's authority and Essex's rebellion

Elizabeth faced a number of rebellions and challenges to her authority during her reign. Most were connected to religion. The final challenge, though, was all about power and influence. In 1601, the Earl of Essex led a rebellion against his queen.

Background

- Essex had been a loyal subject throughout Elizabeth's reign and was, for a time, one of her favourites. He became a privy councillor in 1595 and was awarded the monopoly on sweet wine in England.
- During his time at court, Essex developed a rivalry with Robert Cecil, the son of the powerful William Cecil and an important and influential figure at court.
- Essex pleased the queen when, in 1596, he successfully attacked the Spanish port of Cadiz.

Causes of the rebellion

- Soon after his victory against the Spanish, Essex became involved in an argument with the queen during a Privy Council meeting. At one point, he turned his back on Elizabeth and she hit him on the side of the head. He nearly drew his sword but was stopped by other councillors just in time. Essex was placed under house arrest.
- Later the queen sent him to Ireland to deal with a rebellion. He not only failed to defeat the rebels but agreed a truce with them – directly against the queen's orders.
- On his return to England, Essex rushed straight into the queen's chambers and caught her without her wig!
- After his failures in Ireland, Essex quickly fell from Elizabeth's favour. She refused to renew his sweet wine monopoly. As a result, he lost much of his wealth and influence.
- Angry, and with nothing left to lose, Essex began to gather supporters and plot a rebellion against the queen.

The rebellion

- In February 1601, Essex took four privy councillors hostage and marched them to his London house, along with 200 supporters.
- Robert Cecil, Essex's great rival, responded by labelling him a traitor. Many of Essex's supporters left, while others panicked and released the hostages without his permission.
- Essex and his remaining followers were arrested.

Consequences

- Essex was put on trial for treason and was sentenced to death.
- During his interrogation, he agreed to name other rebels including his sister, Penelope.
- He was executed in private on 25 February 1601. Some of his supporters were also put to death but most were just fined.
- Elizabeth had made it clear, even late in her reign, that she would not tolerate challenges to her authority.

In 1601 the Earl of Essex failed in his attempt to seize power

- Essex was an unpredictable person but Elizabeth gave him an important mission – to defeat a rebellion in Ireland. Instead of crushing it, Essex made a truce.
- Elizabeth was furious that he had done this without her permission. Elizabeth banned him from Court and removed his 'sweet wine' monopoly which ruined him financially.
- Essex mounted a poorly thought-out rebellion. With other disgruntled courtiers, he marched to London to take Elizabeth prisoner.
- He underestimated support for Elizabeth. His route was blocked. He was soon arrested and executed for treason in February 1601.
- The failed rebellion showed that despite Elizabeth's problems, loyalty to the Queen remained firm.

SUMMARY

What challenges did Elizabeth face during her reign?

- She was a female ruler in a time when women did not hold positions of authority.
- She had a number of initial problems to deal with, including religion, foreign policy, taxation, Ireland, Mary, Queen of Scots, and succession.
- Elizabeth never married despite many suitors. Some saw this as a clever decision.
- Elizabeth had to deal with Parliament, and a number of disagreements and tensions arose – particularly around religion, monopolies and Mary, Queen of Scots.
- Essex's rebellion was the final challenge to Elizabeth's authority and it was easily defeated.

A 'Golden Age'

RECAP

Elizabethan society was highly structured and everyone knew their place within it. Here is a very simplified version of the 'Great Chain of Being'.

▼ **Nobility:** • most powerful and wealthy • titles passed from father to son • held most senior positions e.g. privy councillor

◄ **Gentry:** • often wealthy landowners • held important positions e.g. JP • might be richer but still below nobles in society

► **Peasantry:** • poorest members of society • farm labourers • often struggled for work

◄ **Animals and plants:** below human beings in the Great Chain

The gentry were becoming richer and more powerful

- In previous centuries the **nobility** (large landowners) had been the most powerful people in England.
- The gentry were a step below them. They owned land but did not have titles (Lord *this* or Earl of *that*). They helped the monarch keep control in their local area but did not usually have national influence.
- The Tudors deliberately overlooked old nobility. They feared they were too powerful. Instead, they promoted talented members of the gentry.
- Under Elizabeth, the influence of the gentry grew further. Many also grew richer from trade, exploration, rising population and rising prices.

The rise of the gentry

Before Elizabeth's reign, almost all wealth was held by the nobility. The stability that the Elizabethan period brought began to change this. People could make money from trade. The gentry grew as a result and began to fill powerful positions by becoming members of Parliament and Justices of the Peace.

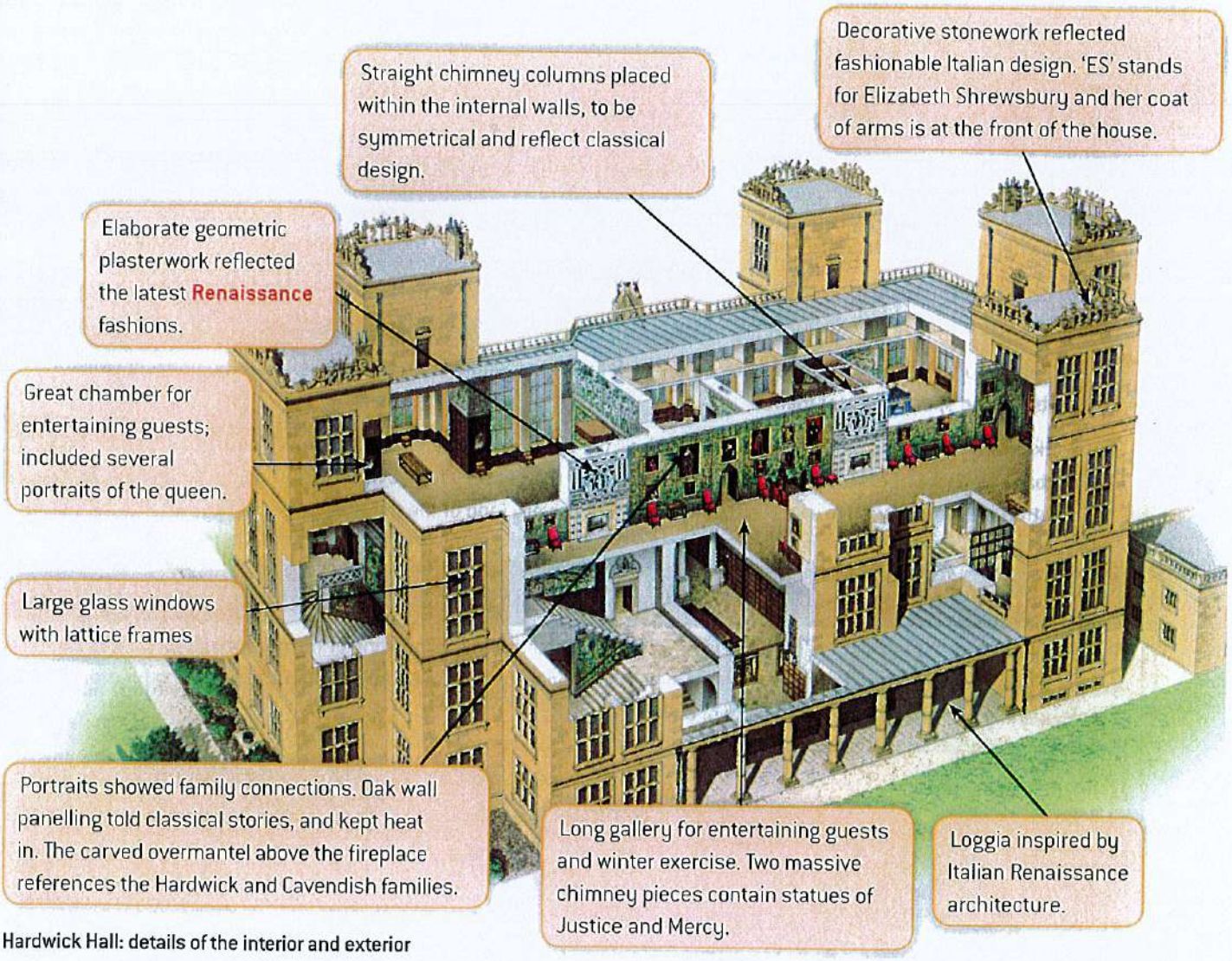
Hardwick Hall

Bess of Hardwick, also known as Elizabeth Shrewsbury, built Hardwick Hall between 1590 and 1597. It was one of the grandest houses in Elizabethan England and a way to demonstrate her wealth and position in society.

Changing homes of the gentry

One way in which the gentry and the nobility could show off their wealth and privilege was by building lavish country homes:

- Purpose: no longer defence, but to display **refined taste.**
- Usually **symmetrical** with open courtyards, unlike the closed, secure ones that went before.
- Lots of **expensive glass** windows showed owner's wealth.
- Medieval great hall replaced by a **great chamber.**
- **Privacy:** number of rooms increased, separating servants from owners.



Hardwick Hall: details of the interior and exterior

RECAP

The theatre in Elizabethan England

Writers, actors and theatre troupes

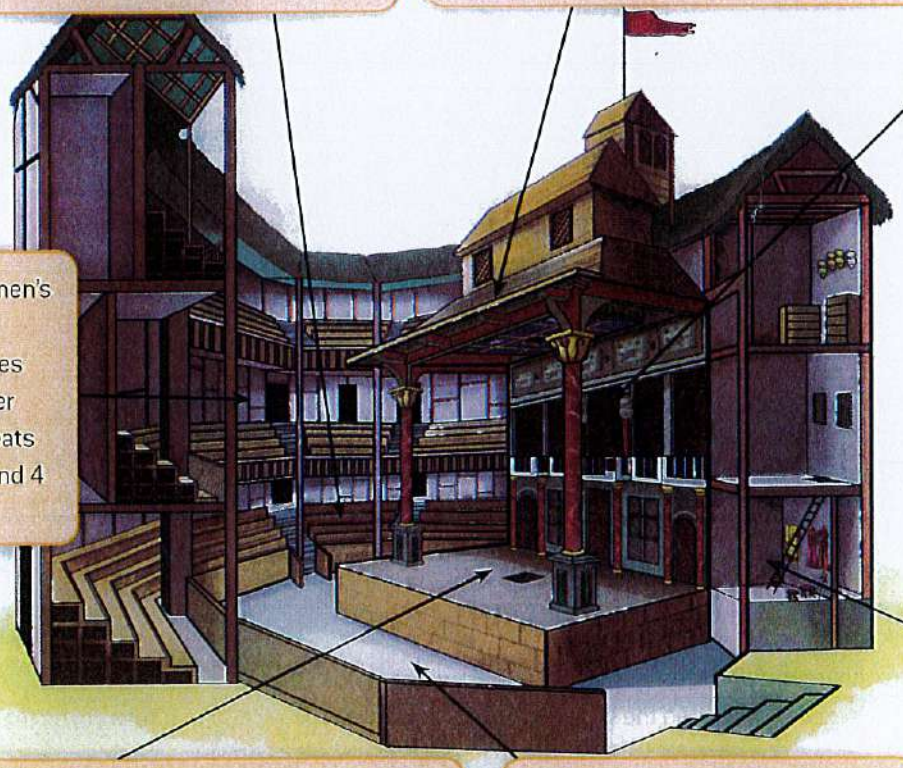
- Playwrights like William Shakespeare produced new works every year. These included comedies, histories and tragedies.
- Acting was an entirely male profession, with female roles played by boys.
- Popular actors like Richard Burbage became very famous and would often return to roles many times or have parts written specifically for them.
- Works were performed by theatre **troupes** such as the Lord Chamberlain's Men (of which both Shakespeare and Burbage were members). Companies were named after the people who provided their funding: the **patron**. Being a patron was a good way to impress the queen, who was very fond of the theatre.

The theatre

The Elizabethan period saw a major change in how theatre worked, with the building of the first permanent theatres. Both rich and poor now attended performances, whereas previously theatre had been seen as something for ordinary people, usually performed in the back room of an inn.

The galleries: seated, covered areas for the rich

Roof: over the stage, often called the 'heavens'. Ropes and rigging were used for scene changes and dramatic entrances



Lords' rooms: most expensive seats; sometimes used by actors and musicians during performances (often called a Juliet balcony)

Gentlemen's rooms: balconies on either side, seats at around 4 pence

Tiring room: room where the actors put on their attire

Stage: often decorated with scenery and almost always a trapdoor for special effects like smoke; back wall was called the Frons Scenae and had a door for actors to enter and exit

Pit: where ordinary people stood to watch, often heckling the actors; completely open to the weather

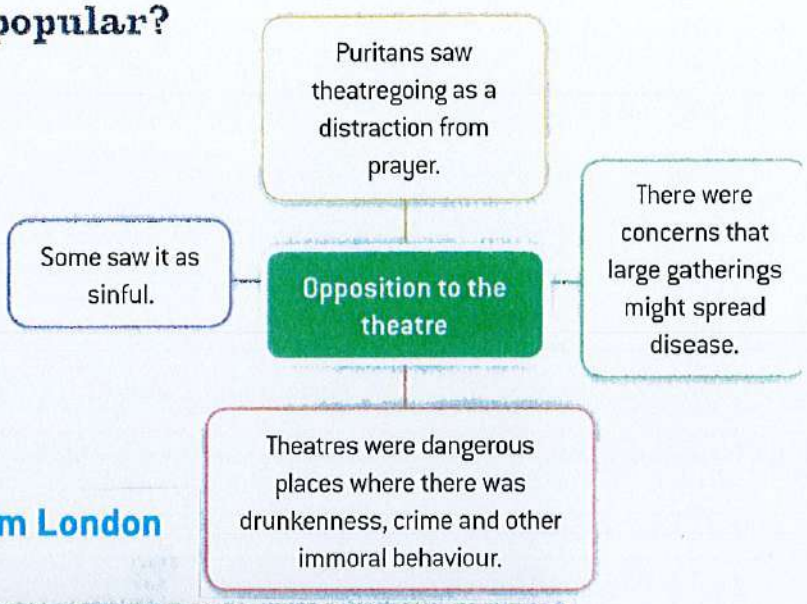
The Globe Theatre in London, built in 1599

A day at the theatre

- Performances generally began at 3:00pm and continued into the evening.
- The ticket price depended on where you sat (or stood).
- Audience members would push and shove to get a better view and the atmosphere would generally be very boisterous.
- It was a cheap afternoon out for the poor and an opportunity for the rich to show how cultured they were.
- Although they occupied different parts of the theatre, the rich and poor would watch the same play.

Why was the theatre so popular?

- It was affordable.
- It was new and exciting.
- It was a social event.
- It was entertaining – plays were humorous, tragic or historical.
- It was contemporary and relevant to the time – many plays carried political messages.



London theatres faced local opposition from London authorities and from Puritans

London authorities	Puritans
London's theatres were outside the city walls – particularly on the Bankside area of the Thames which was an area well-known for bear-baiting, drinking and prostitution	Puritans were extreme Protestants. Puritanism was strong in London
There was concern that theatres encouraged crime and the spread of plague and that plays took apprentices away from their work	They associated theatres with paganism (non-Christian religion)
The authorities wrote to the Privy Council asking for closure of theatres	Theatres also reminded Puritans of Catholic miracle plays
	Puritans thought theatres and plays encouraged sinful behaviour, particularly sex outside of marriage

Theatre was transformed partly thanks to the greatest English playwright, Shakespeare

- Travelling players had been popular in England since medieval times. Wandering bands of actors performed in market squares or inns.
- The government feared these wandering actors were a threat to law and order, so from 1572 actors had to be licensed. This led to actors forming companies to perform in purpose-built theatres.
- The first, called simply 'The Theatre', opened in 1576. Others followed including 'The Globe' in 1599 where Shakespeare made his name.
- Theatre became very popular. Prices varied so everyone could afford to go. The rich sat in the tiered galleries which had roofs. In the centre was an unroofed pit where the poor (the groundlings) stood.
- Themes reflected Elizabethan interests, for example, romance, magic and history.
- The Queen never went to a theatre. Actors performed for her at Court.

RECAP

Accomplishments of the 'Golden Age'

The Elizabethan era is often regarded as a 'golden age' in English history: a time of great achievement.

Elizabethan accomplishments

Peace, power and pride

- Before the Tudors, there was conflict over the throne. The reigns of Henry VIII, Edward VI and Mary I brought political stability but religious turmoil. Elizabeth brought stability and security to the country.
- England's growing wealth and military success made many of Elizabeth's subjects very proud.

Art

- Portraits – including detailed miniature ones – became very popular and often contained symbolism.
- Decorative silverware and textiles became important signs of wealth and culture in the homes of the rich.

Science and technology

- Significant breakthroughs in navigation, astronomy and a growing understanding of magnetism.
- Improved printing presses allowed new ideas to spread quickly.

Exploration

- Europeans discovered new lands and new peoples.
- England became a major power in the world.

Education

- Seen as increasingly important.
- Wealthy boys and some girls received an education, but the poor did not.

Literature

- Many great plays were written during Elizabeth's reign and are still performed today.
- Poetry was very popular. Many nobles wrote poetry and some, such as Shakespeare, wrote sonnets.

Theatre

- Theatre became popular with all levels of society.
- The first permanent theatres were built.

Buildings

- Many great stately homes, such as Hardwick Hall, were built during this period.
- For the first time, houses were not built with defence in mind.

Was it really a 'golden age'?

Although there were significant accomplishments during Elizabeth's reign, some have argued that the idea that it was a 'golden age' is a myth. They argue that:

- Blood sports such as dog fighting and bear baiting remained popular.
- Torture and brutal execution were still used by the government.
- A small minority lived in luxury while the majority remained poor.
- Life expectancy was low and medical treatment was ineffective.
- Despite scientific breakthroughs in some areas, other practices were questionable – alchemy (turning cheap metal into gold) and astrology (using the planets to predict the future) were very popular.

The idea of a 'golden age' was encouraged by Elizabeth and her government. Plays, festivals and pamphlets (small booklets) promoted the idea. The term **Gloriana** was used to describe the spreading of this message. For Elizabeth, this was a useful way of securing her popularity and her throne.

The poor

RECAP

At the bottom of Elizabethan society were the ordinary people. For many, life was straight forward: they worked for their lord and could provide for themselves and their families. For those without this security, life could be very difficult. Those without work were known as **paupers**. Paupers relied on charity to survive. This meant begging or going to the local church for help.

Poverty in Elizabethan England rose significantly for a number of reasons:

Actions of previous monarchs

- Henry VII limited the right of nobles to hold private armies, fearing they might be a threat to his throne. This left many soldiers without work.
- The Reformation under Henry VIII led to the closure of the monasteries. Monks, nuns and other Church employees were left with nowhere to live or work.
- The closure of the monasteries also left the sick and poor with no one to care for them.
- Economic problems under Henry VIII and Edward VI led to the collapse of the cloth trade and the loss of many jobs.

Changes in agriculture

- Bad harvests between 1594 and 1598 led to food shortages and starvation in parts of England. The food shortage also increased prices – which led to **inflation**.
- Increasing numbers of landlords began to keep sheep on their land rather than grow crops. This system, known as **enclosure**, meant that fewer workers were needed.
- Many unemployed farm workers headed to towns and cities in search of employment. There were not enough jobs to go around.

Reasons for poverty in Elizabethan England

Population increase

- During Elizabeth's reign, England's population went from 2.8 million to 4 million.
- A shortage of places to live gave power to landlords who increased rents (**rack renting**).

Flu outbreak

- A terrible outbreak of flu in 1556 killed 200,000 people, including many farm workers.

Causes of poverty in Elizabethan England

Population growth: the population of England rose by 43 per cent from 1550 to 1600. There were fewer jobs to go round and increased demand for food in turn increased food prices

Inflation: food prices rose more than wages due to rising population and bad harvests. Inflation was made even worse by monopolies and rack-renting

War: injured soldiers could not work. War also disrupted trade which added to inflation

Bad harvests led to food shortages. This pushed up prices, especially in the 1590s. Some faced the threat of famine

Enclosure: good farming land had been fenced off for sheep grazing (to provide wool for the cloth industry – which was England's main industry). Sheep farming employed fewer labourers than crop growing so some labourers lost their jobs and lost common land on which they used to graze animals or grow crops to feed their families

Rents: landowners increased rents paid by the poor. This was known as rack-renting

Closure of monasteries: monasteries had previously helped the poor when they hit hard times but they had all been closed by Henry VIII

Attitudes and responses to poverty

The deserving poor

- The 'Great Chain of Being' made it clear to many nobles that they were simply 'better' than the poor.
- Many believed it was their duty to help those below them in society.
- They recognised that many paupers could not help their situation and were not to blame for their poverty.
- Charities for the poor grew and **almshouses** were established.

The undeserving poor

- Some paupers were seen as undeserving: untrustworthy beggars who had no interest in honest work.
- *Warning Against Vagabonds* by Thomas Harman, published in 1567, encouraged the view that many poor people were merely confidence tricksters or criminals. Others were seen as being idle or lazy.

The vagabonds described by Harman included many scammers and confidence tricksters:

- The Counterfeit Crank bit soap so that he frothed at the mouth. People would feel sympathy and give him money.
- Baretop Trickster women would trick men into following them by removing clothing. The men would then be beaten and robbed by her accomplices.
- The Clapper Dudgeon would cut himself and tie dirty bandages around the wounds to gain sympathy.
- Tom O'Bedlam would pretend to be mad. He might stick a chicken's head in his ear or bark like a dog.

The problem of 'sturdy beggars' particularly scared the authorities

- The Elizabethans classified the poor into two groups:

Impotent or deserving poor	Idle or undeserving poor
They were too young, old, ill or disabled to help themselves. They should be helped	They were also referred to as 'sturdy beggars' or **vagrants**. They were considered dishonest. They could help themselves if they wanted to. They should be punished

- Many of the poor headed for nearby towns to look for work or to beg. Large groups of unemployed people roaming the country scared the authorities.
- To start with they were more worried about keeping law and order than they were about helping the poor. Many did not think it was the government's job to sort out such problems.
- Vagrants were seen as a threat to social order and were also blamed for spreading plague.

Earlier attempts to deal with poverty

Monarchs before Elizabeth, including Henry VIII and Edward VI, passed laws that tried to deal with poverty, but the problem got worse.

- From 1495:
  - Beggars were punished in the **stocks** or sent back to their home towns.
- From 1531:
  - Beggars were publicly whipped.
  - Those caught a second time would have a hole burned in their ear.
  - A third offence would mean they were hanged.
- These laws remained in place for most of Elizabeth's reign.
- The 1576 'Act for setting the poor on work' placed the responsibility on local authorities.

Different authorities dealt with poverty in their own way.

London	York	Ipswich	Norwich
• Bridewell Palace was used as a shelter for the homeless. • Bedlam hospital was built to house the mentally ill. • Other hospitals were opened for the sick and for orphans. • Conditions in all these institutions were poor and could not cope with the growing numbers coming to the city.	• In 1515, the city authority issued beggar licences, with a badge to identify holders. • From 1528, a Master Beggar was appointed to keep the others in order. • If beggars refused to work they were sent to the **House of Correction.**	• Introduced a licensing system for beggars from 1569. • Opened a hospital specifically to help the old and the sick. • A youth training scheme was introduced to help children learn a trade and escape poverty.	• After a survey showed that 80% of the population lived in poverty in 1570, the city authorities separated the poor into the 'idle poor' and the 'unfortunate poor'. • The 'idle poor' were given work such as knitting or sewing. The 'unfortunate poor' were given food and other forms of care. • Rich citizens were taxed to pay for the care of the vulnerable.

Government action: the Poor Law

In 1601, the first ever Poor Law was introduced. It stated that:

- The wealthy should be taxed to pay for the care of the sick and vulnerable.
- Fit and healthy paupers should be given work.
- Those who refused to work were still dealt with harshly: they could be whipped or placed in a House of Correction.

How effective was the Poor Law?

Although the 1601 law did make a difference to some, it was not properly enforced in many areas. Begging seemed to decrease, but this may have been due to the threat of the House of Correction rather than the extra help available.

Some historians argue that the law was unsuccessful because it made each area responsible for its own paupers. Some were simply sent from one place to another without receiving any help.

SUMMARY

- Poverty was widespread in Elizabethan England for a variety of reasons, such as the closure of the monasteries, a larger population and changes in agriculture.
- Many wealthy Elizabethans felt duty-bound to help the poor and gave to charity. Almshouses were established in some areas.
- Paupers were generally seen as either deserving or undeserving.
- Paupers were usually dealt with harshly but some cities began to take a different, more practical approach.
- The 1601 Poor Law introduced a new approach nationally.

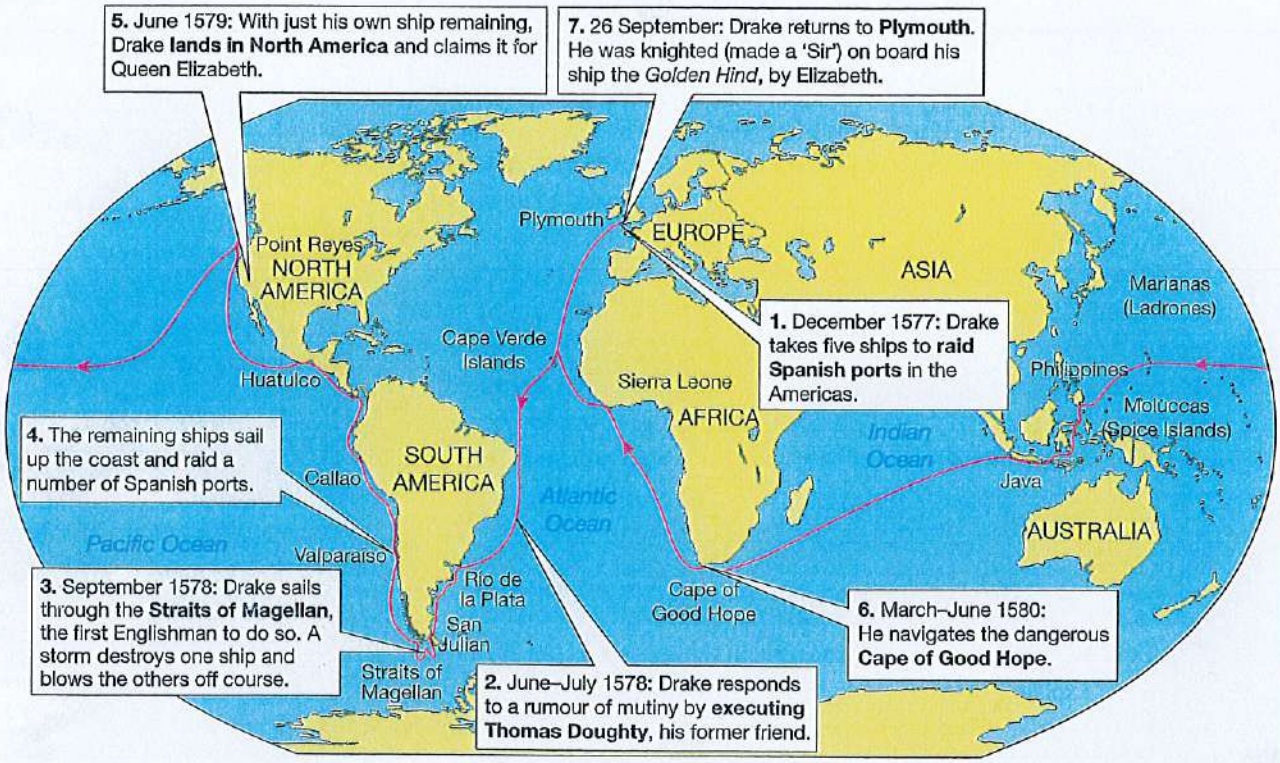
English sailors

RECAP

Circumnavigation 1577–80

As well as a 'golden age', Elizabeth's reign has been called an 'age of discovery'. Although other countries, particularly Spain and Portugal, played a major role in exploring the world, it was England that led the way. Sailors like Sir Francis Drake, Sir Walter Raleigh and John Hawkins helped increase England's wealth and power with their voyages.

Between 1577 and 1580, Drake completed the first **circumnavigation** of the world in a single expedition.



Sir Walter Raleigh and the New World

- Sir Walter Raleigh was given royal permission to explore the Americas – the New World – in 1584.
- He would be allowed to **colonise** (take ownership of) any land that was not ruled by a Christian.
- In return, he had to give the queen one fifth of all the gold and silver he found there.
- He did not sail himself, but sent others to explore and establish colonies in the New World.
- A colony was established at Roanoke on the east coast of America but did not last. A second was created in 1587 and seemed like it was going to succeed. But when the colony's leader returned from a trip to England, he found all of the colonists gone and the word 'CROATOAN' (the name of a local tribe) carved into a tree!

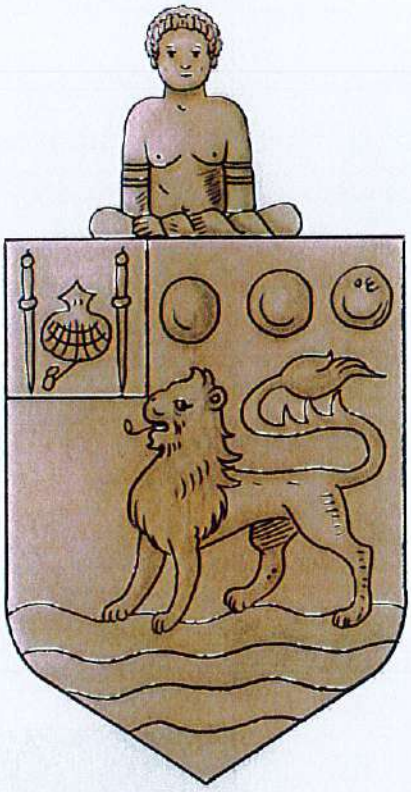
RECAP

The impact of voyages

Voyages by men like Drake, Raleigh and Hawkins brought England more wealth, power and territory.

John Hawkins and the slave trade

- John Hawkins was a respected sailor and courtier.
- He was responsible for building up the navy and commanding it against the Spanish Armada.
- In 1564, he kidnapped several hundred West Africans and sold them in South America. This was not the first example of the European slave trade, but it was the first time the whole process had been carried out by an Englishman.
- He was also a successful **privateer** and is thought to have brought tobacco to England.



A copy of John Hawkins' coat of arms

Wealth

Exploration allowed England to gain wealth in several ways:

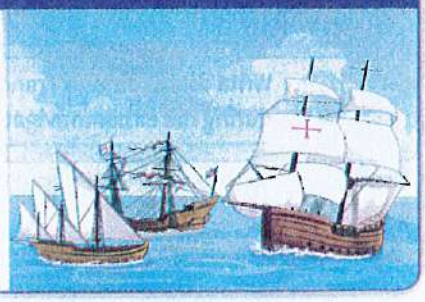
- Raiding Spanish ships and ports allowed riches to be stolen and brought back to England.
- Trading systems were established from which England's wealth grew over the following centuries and new products, like spices, silks and porcelain, were brought to England for the first time.
  - Trade with the East in spices and other goods grew as middlemen could now be cut out – English sailors could deal directly with merchants in Asia.
  - New companies were created to deal with trade in a particular area, for example, the Levant Company dealt exclusively with trade in Turkey and the Middle East.
  - The East India Company was established in 1600 to oversee trade in India and the Far East.
- The trade in African slaves brought significant wealth to individuals and to England as a whole. Other Englishmen saw how Hawkins had profited and so became involved in the slave trade over the following years. Slave labour enabled raw materials to be produced cheaply in the Americas.

REVIEW

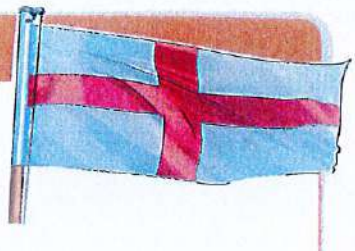
To revise the events of the Armada, turn to pages 54–55.

Power

- Naval power had been growing under Elizabeth and was able to hold its own in any sea battle.
- Improved weapons and tactics, and the skilled command of men like Francis Drake, played a key role in this.
- The English victory over the Spanish Armada showed the dominant position that England held.



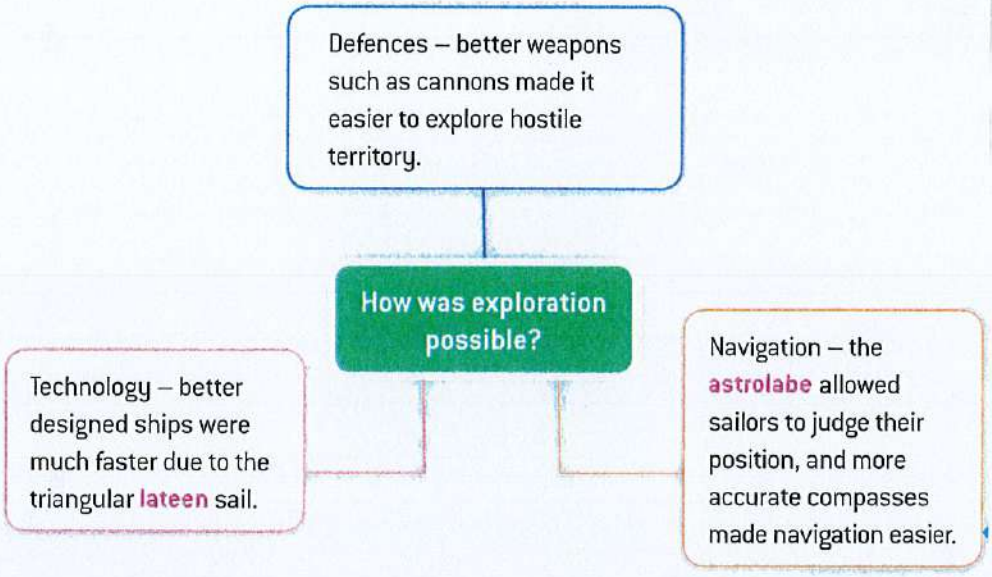
Territory



- England was not the first country to build colonies in newly discovered lands, and there were several failed attempts. But perseverance led to increasing numbers of colonies, particularly in North America, being established in the name of Queen Elizabeth and her successors.

SUMMARY

- The Elizabethan period was a time of great exploration.
- Sir Francis Drake, Sir Walter Raleigh and others discovered and explored new lands and brought wealth back to England.
- Trade was established in spices and other goods.
- The slave trade was established by John Hawkins and grew quickly during Elizabeth's reign.
- Exploration allowed England to gain in wealth, power and territory.



9.5 English sailors: Hawkins, Drake and Raleigh

Elizabethan privateers and traders challenged Spanish power in the New World

- Before Elizabeth's reign, Spain and Portugal dominated European exploration. This made them rich and gave them large empires in North, South and Central America (called the 'New World').
- Elizabeth and her government wanted England to join in this exploration and expand English trade.
- Catholic Spain was very hostile to England and would not grant the English sailors a licence to trade with its colonies.
- The English response was **privateering**. Privateers were licensed by the government to attack Spanish ships which were carrying precious cargos back to Europe.
- Privateers were really pirates but they were funded by rich Elizabethans including Elizabeth herself who took a share of their profits.

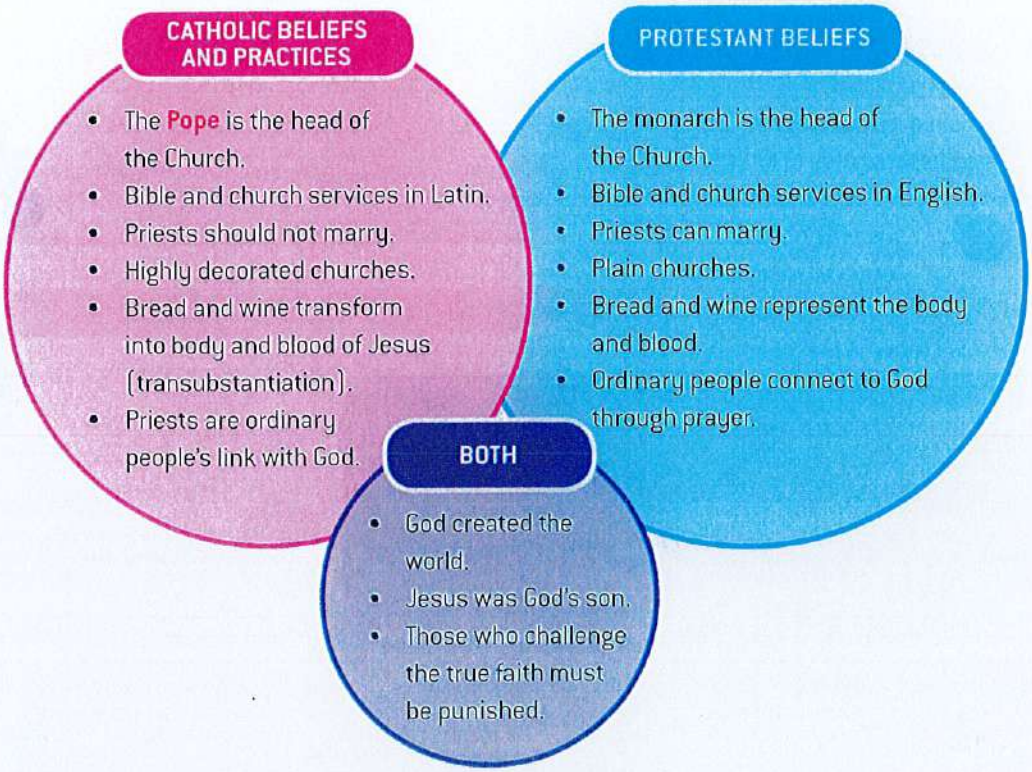
English traders set up important new trading links with the Far East

- It was not all about America. English explorers also joined in the search for new routes to China and the Far East.
- England's trade was over-reliant on the cloth industry and on Antwerp. This was disrupted by war with Spain and Elizabeth's government wanted to find new trading partners and markets.
- New companies were set up such as the East India Company in 1601 bringing silk, spices, cotton and tea from the Far East.

Religious matters

RECAP

By 1558, England had undergone many years of dramatic religious change. The country had swung between Catholic and Protestant with each new monarch and Elizabeth wanted to bring calm and stability to the country.



Elizabeth's religious settlement

Elizabeth was Protestant, but also practical – she knew that **compromise** would bring stability and peace.

Under Elizabeth:

- Priests were allowed to marry.
- Services were all in English and followed the Protestant **Book of Common Prayer.**
- She declared herself 'governor' rather than 'head' of the Church.
- Catholics could worship in their own way in private.
- A moderate Protestant, Matthew Parker, was appointed Archbishop of Canterbury.

Challenges to Elizabeth's religious settlement

1. The Northern Rebellion, 1569

Inspired by Elizabeth's refusal to allow the Duke of Norfolk to marry her Catholic cousin Mary, Queen of Scots, two northern nobles led a rebellion against Elizabeth. The Earl of Westmorland and the Earl of Northumberland took control of Durham Cathedral and held an illegal Catholic mass. They marched south with 4600 men but the rebels disbanded when the loyal Earl of Sussex raised an army against them. Northumberland was executed, Westmorland escaped to France and the Duke of Norfolk was imprisoned.

2. The papal bull, 1570

On 27 April 1570, Pope Pius V issued a special message (**papal bull**) in which he stated that Elizabeth was not the true queen and called on the people of England not to obey her laws. The bull also **excommunicated** her from the Church. The Pope's aim was to stir up rebellion by forcing English Catholics to choose between their queen or their religion.

3. The Ridolfi Plot, 1571

The plot was led by an Italian named Ridolfi, but also involved the Duke of Norfolk and a second northern rebellion. This time, the uprising would coincide with an invasion of foreign Catholics from the Netherlands and the murder of Queen Elizabeth. Her Catholic cousin, Mary, Queen of Scots, was to be placed on the throne and would marry the Duke of Norfolk. The plot was discovered before it could be carried out.

The 'Catholic threat'

Despite the failure of the Northern Rebellion and the Ridolfi Plot, Elizabeth continued to face challenges from some Catholics in England. Two further plots were uncovered in the 1580s:

The Throckmorton Plot, 1583

- Led by Sir Francis Throckmorton.
- The plan was to assassinate Elizabeth and replace her with Mary, Queen of Scots.
- There would then be an uprising of English Catholics and a French invasion. The Spanish ambassador was also involved.
- When the plot failed, Throckmorton was executed.

The Babington Plot, 1586

- Led by Anthony Babington.
- The plan was to murder Elizabeth and replace her with Mary, Queen of Scots.
- The plot's discovery led to the trial and execution of Mary.

How serious was the Catholic threat to Elizabeth?

The Pope had made it very clear with his papal bull that he wanted Elizabeth's rule to end. He said it was the duty of Catholics to challenge her rule.

Jesuits and other missionaries were another serious threat as they could undermine the stability of her religious settlement.

European **Catholic rulers**, like Philip II of Spain, were encouraged by the Pope to challenge her authority.

English Catholics were encouraged by the papal bull to rebel.

The Counter-Reformation

The **Counter-Reformation** was the attempt by the Catholic Church to bring many Protestants back to the old faith. In 1568, William Allen established a **seminary** at Douai in the Netherlands to train Catholic priests. Allen aimed to send these priests to England as missionaries. He had the full backing of the Pope.

One key movement within the Counter-Reformation were the **Jesuits**.

Who were the Jesuits?

The Society of Jesus was created in 1540 and it began to send **missionaries** to England from 1580. Its purpose was to convert the Protestant population to Catholicism. Elizabeth saw the Jesuits as a threat.

Who were the key Jesuits in England?

Edmund Campion and Robert Parsons arrived in England on 24 June 1580 as missionaries. Campion travelled the country spreading his message, whereas Parsons kept a lower profile. Campion became a wanted man because the authorities were convinced he wanted to start a rebellion.

Were they really a threat?

Jesuits like Campion claimed not to want rebellion but just to spread their religious message. Elizabeth and many others, however, saw them as a genuine threat to the stability of England, even if they were not directly involved in any plots against her.

Why did Elizabeth's religious policy change?

The threat from abroad

Both Spain and France were powerful Catholic countries and invasion was a real concern for Elizabeth. The Spanish Armada of 1588 showed the fear was justified. The threat declined towards the end of her reign, following the Armada's defeat.

Powerful Catholics

Several powerful Catholic families lived in the north of England. They had mostly remained loyal, but there was growing concern that they might obey the Pope's command and rebel.

Jesuit missionaries

The popularity of people like Campion undermined Elizabeth's authority. She could not allow them to spread their message.

The Ridolfi, Throckmorton and Babington Plots

Although these plots failed, they showed that Elizabeth had enemies who wanted to overthrow her and restore the Catholic Church.

Dealing with the Jesuit threat

- **Campion:** By July 1580, Edmund Campion had spent a month travelling around England making speeches and encouraging people to convert to Catholicism. Elizabeth saw him as a threat to order and therefore to her. He was arrested and, despite maintaining that he had no plans to overthrow the queen, was brutally tortured and dragged through London before being hanged, drawn and quartered. It was clear that Elizabeth was not going to take any threat lightly.
- **Priests:** The 1585 Act Against Jesuits and Seminary priests called for them to be driven out of England. Many were executed.

Elizabeth's response to the 'Catholic threat' after 1580

RECAP

A change in policy

In the 1580s, Elizabeth began to move away from the tolerance of Catholics that was part of her religious settlement. Instead she began to introduce increasingly anti-Catholic laws:

Date	Key points of law
1571	Recusancy fines for Catholics who did not take part in Protestant services. They could be fined or have property taken away. However, the rich could afford to pay and Elizabeth did not enforce the law too harshly; when Parliament tried to increase the fines, she resisted. It became illegal to own any Catholic items such as rosary beads.
1581	Recusancy fines were increased to £20 – more than most could afford; this law was strictly enforced. It became high treason to convert to Catholicism.
1585	Any Catholic priest who had been ordained (made a priest) after 1559 was considered a traitor and he, and anyone protecting him, faced death. It became legal to kill anyone who attempted to assassinate the queen.
1593	The 'statute of confinement' – Catholics could not travel more than five miles from home without permission from the authorities.

RECAP

Puritans and their beliefs

Who were the Puritans?

- Strict Protestants who were influenced by extreme Protestants in Europe, like John Calvin.
- In some cases, they lived in **exile** in Europe during the reign of Elizabeth's Catholic sister, Mary.
- They were keen to remove all Catholic elements from the English Church.
- They studied the Bible, wanted plain clothing and simple services.
- Some Puritans were appointed as bishops by Elizabeth, though some argued over their robes. By 1568, most of them had agreed to wear the white gown or **surplice** required by the Church of England during services.

Hard-line Puritans

Known as **Presbyterians**, they questioned Elizabeth's religious settlement and the need for bishops.

→ In the 1570s, they held popular meetings, called **prophesyings**, to discuss the Bible. There was often criticism of the queen and her religious policies at these meetings, too.

↓

Edmund Grindal, the Archbishop of Canterbury, encouraged prophesyings, despite these criticisms.

← Elizabeth suspended Grindal as Archbishop.

↓

In 1580, John Field, a prominent and very strict Puritan, was banned from preaching.

→ The leaders of a new **separatist** church founded in London in 1593, Henry Barrow and John Greenwood, were hanged.

Powerful Puritans

A number of Puritans with less strict views were able rise to powerful positions:

- **Sir Francis Walsingham** – the queen's senior minister and spymaster. He largely kept his religious views to himself, aware they might make him unpopular.
- **Robert Dudley, Earl of Leicester** – a privy councillor and seen as a potential husband for Elizabeth. He was unwilling to put his position at risk by openly challenging the Church.
- **Peter Wentworth and Anthony Cope** – Presbyterian MPs who tried to bring change to the Church by introducing bills to Parliament, however, they did not gain much support from other MPs.

Elizabeth's response to Puritanism

When Grindal died in 1583, Elizabeth replaced him as Archbishop with John Whitgift, who took a tough stance against Puritans. With this key appointment, and the deaths of Dudley in 1588 and Walsingham in 1590, Elizabeth began to crack down on Puritanism.

Measures against Puritans included:

- New rules introduced by Whitgift banning unlicensed preaching and forcing church attendance with recusancy fines.
- A new High Commission with the power to fine and imprison Puritans who refused to follow the rules.
- The dismissal or imprisonment of hundreds of clergymen.
- The punishment of printers for spreading the Puritan message.
- A crackdown on high profile Puritans, like Anthony Cope, who was imprisoned in the Tower of London.

Why did the influence of Puritanism decline after 1590?

- The Church of England had brought stability to religion and people were unwilling to risk losing it.
- The death of powerful Puritans removed its influence in the royal court.
- Whitgift's crackdown broke the organisation of Puritanism.
- The death of John Field in 1588 – this important leader had inspired many and been highly critical of the Church of England.

RECAP

The failure of rebellions against Elizabeth

There were several plots and rebellions against Elizabeth's rule. The reasons behind these can be split into two categories:

Religion (the most common cause): for example, the Northern Rebellion and the Babington Plot. These were usually based on the belief that Elizabeth had no right to be queen, and had the aim of replacing her with Mary, Queen of Scots.

Power and influence: for example, the Essex Rebellion. This was the result of rivalries within the Privy Council and the battle for influence over the queen.

Regardless of what was behind the plots and rebellions, all of them had one thing in common: they failed! The Ridolfi, Throckmorton and Babington Plots were discovered before they were put into action, while the Northern Rebellion in 1569 and Essex's rebellion in 1601 were quickly defeated.

Why did plots against Elizabeth fail?

Spies

- Elizabeth's huge network of spies was able to quickly identify threats and deal with troublemakers.
- Sir Francis Walsingham, one of the queen's most trusted advisors, was also her spymaster.

A skilled politician

- Elizabeth was good at getting her own way.
- She dealt with Parliament with great skill, allowing MPs and lords to feel that they had influence while still showing who had the final say.

Unconvincing alternatives

- Most people, even Catholics, preferred the idea of an English queen to a foreign ruler like Mary, Queen of Scots, or Philip II of Spain.
- Mary was not generally trusted, having been widely blamed for her husband's death, and Philip, who had been crowned King of England after marrying Elizabeth's sister, Mary, had shown little interest in the country. His wife had sent hundreds of Protestants to be burnt at the stake.
- The lack of a popular alternative monarch meant that most rebellions could not gain wide support.

Punishment

- Elizabeth rarely showed mercy to those who betrayed her.
- Rebels were tortured and brutally executed.
- Elizabeth even executed her own cousin, Mary, Queen of Scots, and her former favourite, the Earl of Essex.
- For potential rebels, the consequences were clear to see.

Religious settlement

- Elizabeth's religious policy kept the majority happy.
- Although there were crackdowns on Catholics and Puritans later in her reign, religious differences were mostly tolerated.

SUMMARY

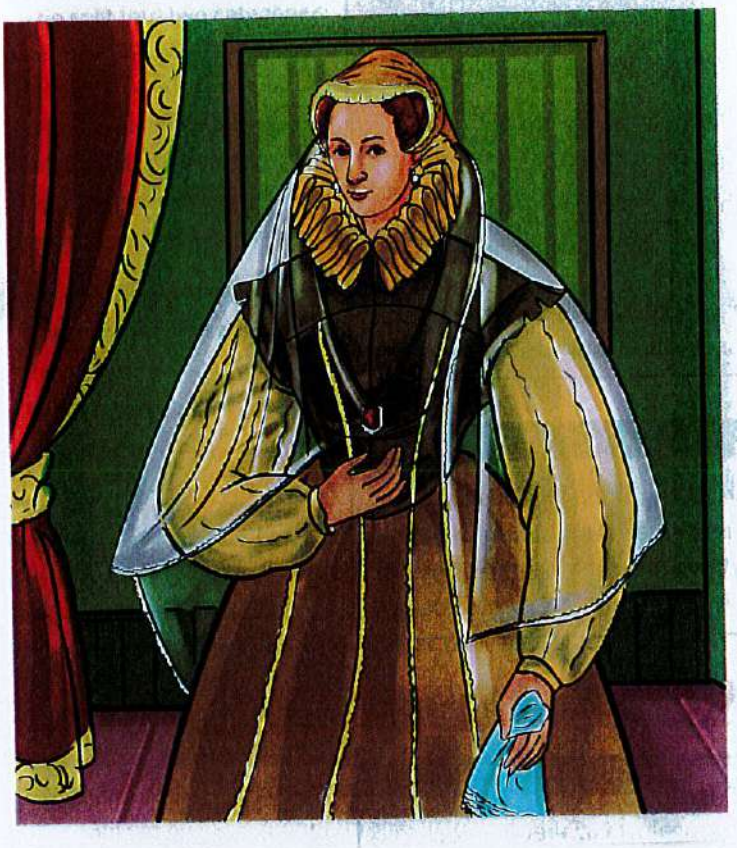
- Elizabeth brought stability to England through her religious settlement – a Protestant Church but with some compromises. Catholics were largely allowed to practise their religion in private.
- The Pope excommunicated Elizabeth in 1570 and called on Catholics to challenge her role. This led to several plots and rebellions and an increased threat from Catholic powers like Spain and France. Jesuit missionaries tried to convert the English.
- In response, Elizabeth treated Catholics more harshly.
- Puritanism became increasingly popular in England and was allowed, or even encouraged, by powerful men at court and in the Church.
- After 1590, there was a crackdown on Puritans.
- Elizabeth was able to maintain her power by dealing effectively with those who challenged her. Plots were either discovered early or quickly defeated.

Mary, Queen of Scots

RECAP

Who was Mary, Queen of Scots?

Mary, Queen of Scots, was a major figure in Elizabeth's reign for several reasons:



- Elizabeth's cousin. Her grandmother was Henry VIII's sister.
- A Catholic.
- Became Queen of Scotland in 1542, at only eight-days-old.
- Married the heir to the French throne in 1558 and was briefly queen of two countries.
- As Elizabeth had no children, Mary was also heir to the throne of England, some believed she was in fact the rightful queen.
- After her husband's death, she returned to Scotland but became increasingly unpopular. Scotland had become increasingly Protestant in her absence.
- In 1567, having been accused of the murder of her second husband, Lord Darnley, Mary fled to England. Her young son, James, was crowned King of Scotland in her place.

9.7 Mary, Queen of Scots: threat, plots, execution and impact

Mary's arrival in England posed a big problem for Elizabeth

- Mary was Elizabeth's cousin. Some saw her as the rightful heir to the throne of England.
- She was a Catholic who had been married briefly to the King of France. When he died she returned to Scotland and married Lord Darnley.
- They had a son, James (who would later become James VI of Scotland and James I of England).
- Darnley was a violent drunk. He was murdered. Mary then married the Earl of Bothwell who was chief suspect in Darnley's murder.
- Gossip was that Mary was involved in the crime. She was forced to **abdicate** (give up her throne) in favour of her son.
- In May 1568, Mary fled to Cumberland in the hope that her cousin Elizabeth would help her.
- Elizabeth feared Mary would become the focus of Catholic plots. She never met Mary but kept her under house arrest in isolated locations.

The Babington Plot

The plotter

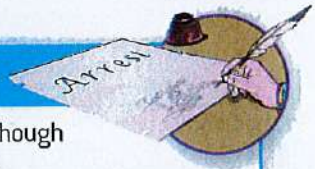
In 1586, a rich young Catholic named Anthony Babington planned to kill Elizabeth, rescue Mary and place her on the throne.

The plot

Babington needed to know if Mary supported his plan. He managed to get Mary's servants to hide coded messages within beer barrels that were sent to her room. The messages reached Mary and she replied, giving her backing to the plot.

The plot uncovered

Unfortunately for Mary, the servants were spies for Sir Francis Walsingham, Elizabeth's spymaster. The original message and Mary's reply were decoded and taken straight to Elizabeth. It was clear that Mary was plotting to kill the queen.



The aftermath

With such clear evidence, Elizabeth had little choice but to act. Although still hesitant, she ordered that Mary should go on trial for treason.

The Babington Plot finally led to Mary's execution. Mary became a martyr

- Mary had been the focus of the Catholic plots but there had been not enough evidence of her involvement for a conviction. Spymaster Walsingham was determined to find hard evidence. The Babington Plot gave him the opportunity to prove Mary was involved.
- In 1585, Mary was a 'prisoner' at Chartley Hall. She was losing hope and became resentful. She corresponded in code with the French ambassador and Anthony Babington, a recusant. They hatched a plot (just like the other plots) to kill Elizabeth and put Mary on the throne helped by a Spanish invasion force.
- Mary's letters were intercepted by a double agent and decoded. Walsingham found out about the plot but let them carry on their correspondence.
- Once Walsingham had proof of Mary's guilt, she was put on trial. She was executed in February 1587.
- Elizabeth was wracked with guilt over this **regicide** (killing of a monarch). She had signed Mary's death warrant but claimed that had only been a precaution so the Council had acted without her consent in executing her.
- The execution made Mary a **martyr** (someone who dies for their religious beliefs). Despite this, English Catholics mostly remained loyal to Elizabeth. However, Catholics abroad were shocked. Mary's execution led King Philip of Spain to declare war and launch the Armada invasion force in 1588.

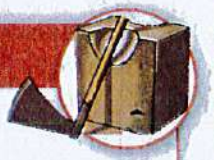
RECAP

Elizabeth's treatment of Mary, Queen of Scots

The trial

- In October 1586, Mary was put on trial before a court of 36 noblemen including Sir Francis Walsingham and Sir William Cecil, two of Elizabeth's closest advisors.
- Mary defended herself strongly. She criticised the fact that she had not been allowed to see evidence against her and claimed that as she was not English, she could not be guilty of treason. She refused to accept that the court had any right to pass sentence on her.
- She was found guilty and sentenced to death on 25 October.

The execution



- Elizabeth was reluctant to sign Mary's death warrant. She feared that executing a fellow monarch might inspire her enemies, or that Mary's son James might want revenge.
- She was also concerned about the reaction of the Catholic powers: France and Spain.
- Despite this, she signed the death warrant on 1 February 1587.
- Mary was executed, in private, seven days later at Fotheringhay Castle. The Earls of Shrewsbury and Kent were the official witnesses.

The impact

- Without Mary, Catholics had no clear alternative monarch. The new heir to the English throne was Mary's son James – a Protestant.
- Even in death, Mary remained an important figure. Many saw her as a **martyr** to her faith and her execution as proof that Elizabeth was a wicked heretic.
- Elizabeth's concern about the reaction abroad was unwarranted – there was outrage but no action from France or Spain. King James of Scotland accepted Elizabeth's apology for the death of his mother.

Timeline

1542
- Born and became Queen of Scotland

1558
- Married heir to the French throne

1561
- Returned to Scotland, following the King of France's death

1565
- Married Lord Darnley

1566
- Birth of her son, James (later King James VI of Scotland and James I of England)

1567
- Forced to abdicate following the murder of Lord Darnley

1568
- Escaped to England

1586
- Went on trial for treason

1587
- Executed

SUMMARY

- Mary, Queen of Scots, arrived in England in 1567 and was immediately seen as a threat to Elizabeth's throne and the religious settlement.
- She was not directly involved in plots but was a clear inspiration for the Northern Rebellion, the Ridolfi Plot and others.
- After agreeing to take part in the Babington Plot she was put on trial, and executed in 1587.
- Her death removed the direct threat to Elizabeth, but she remained a symbol to Catholics as a martyr to their faith.

Conflict with Spain

RECAP

Reasons and events

At this time, Catholic Spain was one of the richest and most powerful countries in the world. However, during Elizabeth's reign, growing tension between England and Spain would eventually lead to war.

The issue of marriage

- King Philip II of Spain had been married to Elizabeth's sister, Mary I. During this time, he had been joint monarch of England. The plan was that their child would unite England and Spain under one Catholic king or queen. When Mary died childless in November 1558, so did the plan.
- Philip proposed to Elizabeth in 1559, but, as with many other suitors, she kept him waiting for an answer. As it became clear that the marriage would not take place, tensions between the countries grew.

The papal bull

- In 1570, the Pope excommunicated Elizabeth and called for all Catholics to challenge her rule. As a Catholic, Philip was keen to follow the Pope's instructions.

Why was there conflict between Spain and England?

Religious difference

- Elizabeth had returned England to the Protestant faith after the Catholic years of Mary I (1553–58). Spain had remained Catholic throughout all the religious changes of the Reformation. Such opposing religious ideas led to conflict.

The actions of sailors

- Sir Francis Drake and other English sailors had spent years raiding Spanish ports and ships, and stealing treasures from Spanish colonies in South America and closer to home. The most notable example was in 1587 when Drake led a raid on the port of Cadiz. He destroyed dozens of Spanish ships in what became known as 'singeing the King of Spain's beard'.
- Elizabeth encouraged these acts by granting licences in exchange for sharing the treasures with the country.

The Netherlands

- As well as Spain, Philip also ruled the Netherlands. In 1566, there was a Protestant uprising in the country. Philip sent troops to restore order but this led to even greater resistance from the rebels.
- Although she wanted to avoid war with Spain, Elizabeth agreed to send money to support the Protestants and allowed English volunteers to go and help in the fight. She also let rebel ships use English ports. All of this angered Philip greatly.
- William of Orange, the Dutch rebel leader, was assassinated in 1584. In December 1585, Elizabeth finally agreed to send English troops to support her fellow Protestants. She sent her trusted friend Robert Dudley with 7000 soldiers. Dudley and his men had very little impact but it was a clear act of war against Spain.

RECAP

Naval warfare

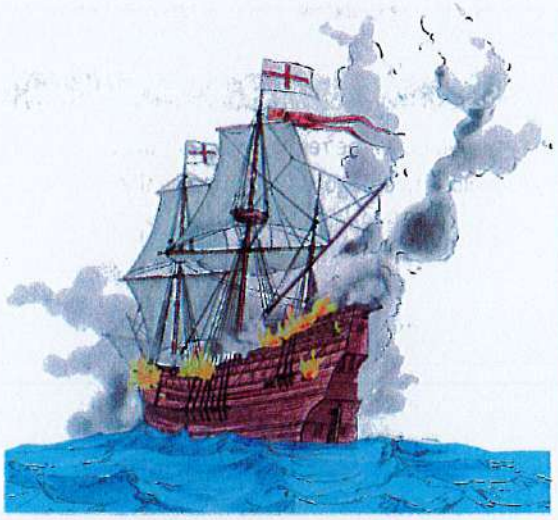
During Elizabeth's reign, the seas were dominated by three powerful countries: England, Spain and France. Their superiority relied on three things: the size of their fleet, tactics and technology.

The size of the fleet

Henry VIII had spent a fortune building a huge navy to protect his island nation. Before 1500, ships had simply been a way to get to battle, but Tudor ships were designed to fight. During Elizabeth's reign, under the command of John Hawkins, England's navy continued to grow. At the same time, Philip of Spain spared no expense in trying to make his navy the largest and most powerful in the world.

Tactics

- When full scale battles were fought, a tactic called the **line of battle** was sometimes used. Ships formed into a single line and fired together on the enemy. The aim was to sink as many as possible.
- **Raids** were a common form of attack. They took enemy ports by surprise and destroyed as many ships as possible before the enemy had the chance to fight back. This kind of attack also allowed for treasure to be stolen.
- **Fireships** were an effective tactic used in the sixteenth century. An old ship would be set alight and sent into the middle of the enemy fleet. This would send panic across the wooden ships and cause great damage at little risk to the attacker.



Technology

- A new type of triangular sail, known as a lateen, allowed for much faster travel and new ships allowed for greater speed and manoeuvrability. Ships could therefore travel greater distances and perform better in raids and battles.
- New, more powerful, **cannons** meant it was now possible to fire at enemy ships from a distance. Previously, sailors would try to board enemy ships. Ships were built specifically for battle and for use in the line of battle tactic.
- New inventions like the astrolabe allowed for greater accuracy when planning voyages and working out locations. This helped sailors prepare much better for long voyages, particularly if they had to pass through hostile waters.

RECAP

The Spanish Armada

1: The plan

- In 1588, Philip II of Spain launched his great Armada: 151 ships, 7000 sailors and 34,000 soldiers would sail to the Netherlands and collect more men before invading England.
- They would sail in an unbreakable crescent formation.
- Philip was so confident that he would defeat the English navy that he filled the ships with weapons for land battles that would follow once the fleet arrived in England.

2: The English strike first

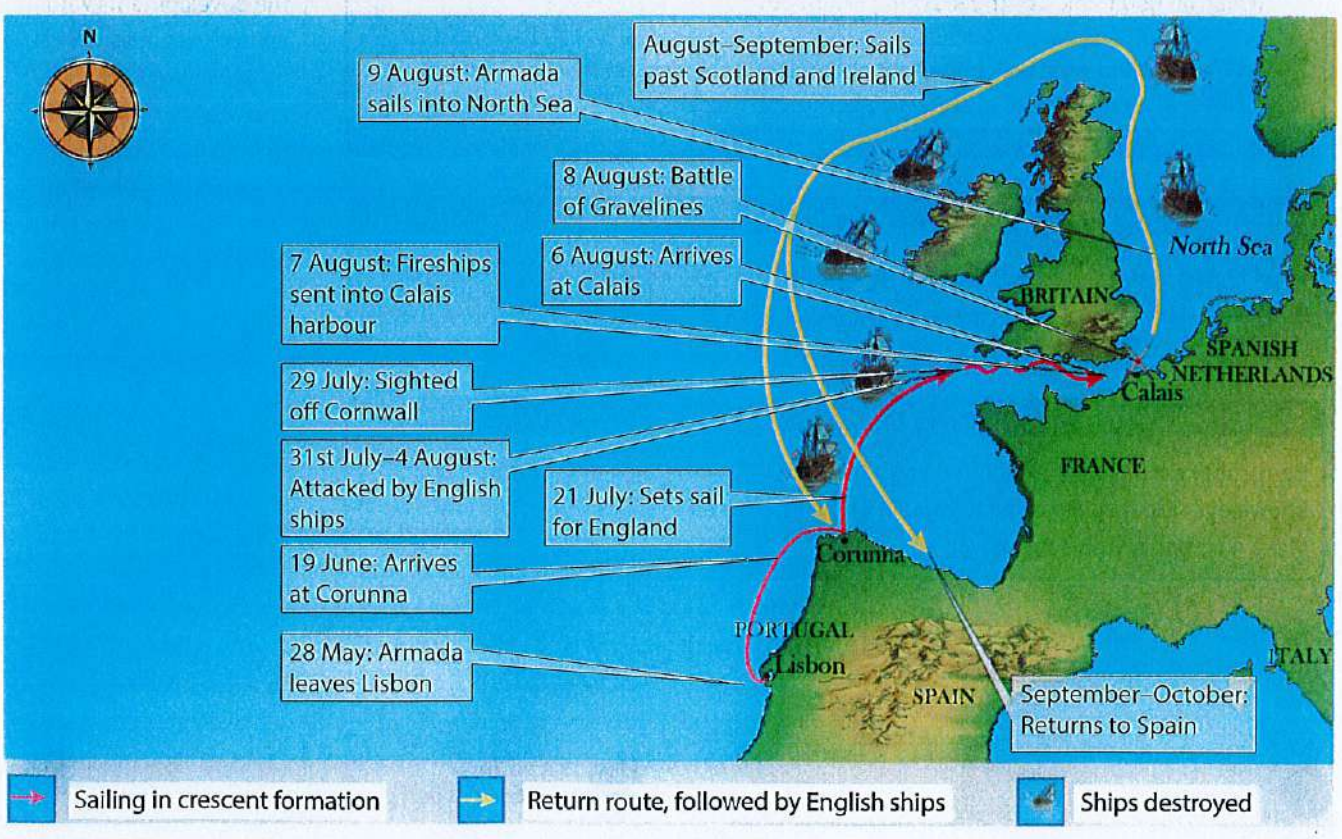
- By 6 August the Armada was anchored off the Dutch coast.
- They were delayed for several days waiting for additional soldiers to arrive.
- At this moment the English, commanded by Sir Francis Drake, chose to strike. Early on 7 August, eight fireships were sent into the Spanish fleet. There was mass panic and the well-organised Armada was plunged into chaos.

3: The battle

- On 8 August the Battle of Gravelines began.
- The English fired constantly from a distance of 100 metres. The Spanish ships were badly damaged but none were sunk.
- Recognising how bad the situation was, the Spanish commander, the Duke of Medina-Sidonia, tried to lead his battered ships home. The English gave chase.

4: The storm

- A great storm blew the retreating Armada way off course.
- Their food rotten, their water polluted and with no maps for the waters around northern Britain, many ships were wrecked. Survivors who made it to shore were slaughtered by the Scots or the Irish.
- Of 151 ships, only 65 returned to Spain.



How was the Armada defeated?

English tactics

- The fireships broke the formation of the fleet and made individual ships vulnerable to attack.
- The bombardment by the English cannons made regrouping impossible.
- The English had faster ships and more experienced and skilled commanders.

Spanish mistakes

- Spanish ships were designed for the Mediterranean and could not cope with the harsh conditions of the English Channel and the North Sea.
- They were delayed in the Netherlands because the soldiers were not ready to board.
- Their weapons were mostly for land use, leaving them almost defenceless at sea. They had also brought many of the wrong cannonballs.
- The commander of the fleet was inexperienced.

The weather

- Storms caused great destruction to the Spanish fleet.
- The storms delayed their return to Spain, meaning that their food and water went off or ran out. Many sailors became too sick to sail.

The consequences of the defeat of the Armada

The Armada's defeat was a great victory for Elizabeth. It proved that England was a major naval power. The country could not rest, however. Invasion remained a concern and Philip quickly began planning a second attempt, but he never actually tried again. Elizabeth continued to strengthen her navy.

The Armada had brought England together. Under threat of foreign invasion, most Catholics had declared their total loyalty to Elizabeth. It made Elizabeth even more popular and respected as a leader, and helped boost the idea of the 'Golden Age'.

SUMMARY

- England and Spain were both significant naval powers and bitter rivals.
- There were several reasons for their conflict, mostly based around religious difference – England was Protestant and Spain was Catholic. Conflict in the Netherlands increased tension between the countries.
- Naval warfare developed greatly during Elizabeth's reign due to growing fleets and improved tactics and technology.
- The Spanish Armada, launched against England in 1588, failed for several reasons.
- Its failure established England as a major naval power.

Glossary: Elizabethan England, c1568–1603

Abdicate Give up the throne

Alliance An agreement between countries to work together against a shared enemy

Alms Charity given to the poor. Almshouses are houses provided for poor people to live in

Bond of Association Anyone associated with a plot against Elizabeth could not benefit from her death in any way

Broadside Where all the guns on one side of a ship are fired simultaneously

Circumnavigate Sail around the world

Colony An area under the control of another county

Concession Something granted following demands for it

Courtier Member of the royal Court

Culverin Accurate long-range ship's cannon

Enclosure The division of land, including the village common land, into separate fields with hedges, allowing a change from arable to sheep farming

Excommunicated To be expelled from the Church

Fireship Unmanned ship filled with burning material

Flax A plant used to make linen

Galleon A large ship, especially used by Spain, either as a warship or for trading

Humanism Intellectual branch of the Renaissance, drawing on classical texts and stressing the dignity of mankind

Jesuit Roman Catholic missionary priest

Labouring poor Those who work with their hands

Legitimacy Right to rule

Martyr Someone who dies for his or her religious beliefs

Missionary Someone sent on a mission to spread his or her faith

Monopoly The exclusive right to sell a product. Elizabeth sold these monopolies to favourite courtiers as a way of keeping support

Nobility Large landowners

Ordained Made into a priest

Parliament The supreme legislative body. Responsible in the sixteenth century with the Queen for making laws and deciding about taxes

Papal Bull An official document issued by the Pope

Patent A licence

Patronage Duties at Court

Prerogative An exclusive right or privilege

Privateering The actions of pirates licensed by the government to attack and take enemy ships

Privy Council A group of trusted ministers who advise a monarch

Progress When the monarch and courtiers went to stay with powerful nobles

Prorogue Postpone

Propaganda Something that spreads a message in order to encourage people to think or behave in a particular way

Propheysings Prayer meetings where the Bible was discussed and sermons said

Puritan An extreme Protestant, strongly opposed to Catholic ideas and styles of worship

Radical Extreme. Usually used to describe views or someone holding views that are very different from what is commonly accepted

Recusant Someone, usually a Roman Catholic, who refused to go to Church services

Regicide Killing of a monarch

Renaissance An intellectual and cultural movement originating in Italy in the Middle Ages, heavily influenced by the Ancient Greeks and Romans

Seminary A place where priests are trained

Subsidy Grant of money to the Queen

Suitors Possible husbands

Transubstantiation Belief that at mass the bread and wine miraculously turn into Christ's body and blood

Treason Disloyalty to your country, monarch or government

Vagrant A homeless, unemployed person who wanders from place to place and begs

Vestments Clerical robes

Workhouse An umbrella term for the institutions set up by the Poor Law. Separate institutions were envisaged by the laws, but the distinctions between them became blurred over time. In theory, poorhouses were to provide shelter for the 'impotent poor', workhouses to provide work for the 'able-bodied poor', and 'Houses of Correction' were to detain the 'idle poor'