



# GCSE History Revision Guide

The American West, Medicine Through Time and Skills

Blake Valley Technology College

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# Outline of the Course

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The GCSE History course has four main elements to it, these are:-

- The American West, 1840-95 (A Depth Study)
- Medicine Through Time (A Development Study)
- Coalbrookdale Coursework (History Around Us)
- Iraq Coursework (Modern World Study)

Together, these four elements provide a detailed and insightful range of topics to help develop your understanding of the world today as well as the skills necessary to succeed at GCSE level.

The course also has three main assessment objectives, these are: -

## *Assessment Objective 1*

You must show the ability to recall, select, organise and use your knowledge of the course and to communicate it through description, analysis and explanation of:

- the events, people, changes and issues studied;
- the key features and characteristics of the periods, societies or situations studied.

## *Assessment Objective 2*

You must show that you can use historical sources critically within their setting, by comprehending, analysing, evaluating and interpreting them.

## *Assessment Objective 3*

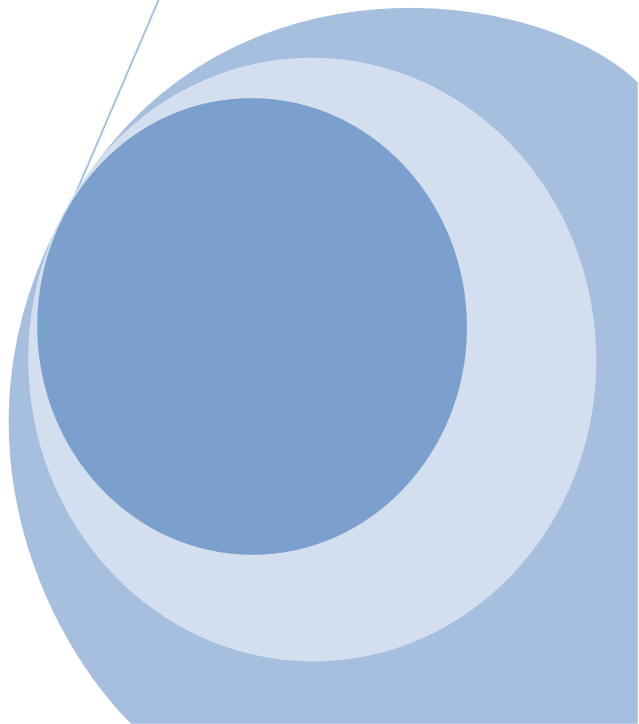
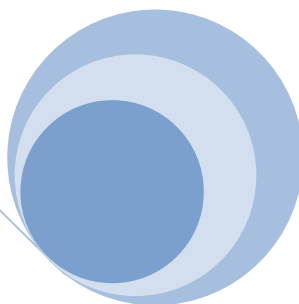
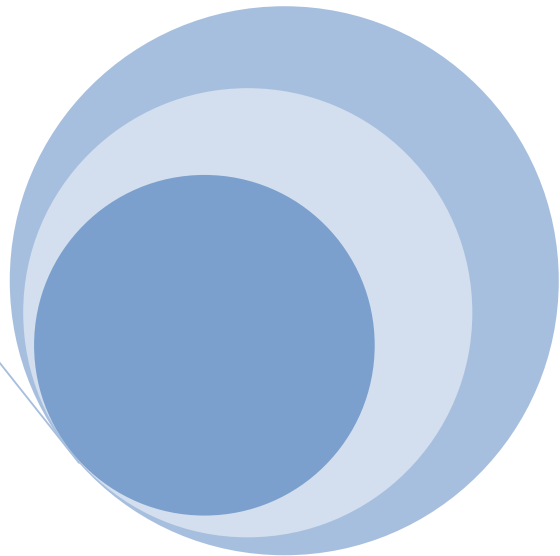
You must show the ability to comprehend, analyse and evaluate, in relation to the historical setting, how and why historical events, people, situations and changes have been interpreted and represented in different ways.

At the end of the course of study, you will be expected to sit two exams covering the major topics studied.

Paper 1 focuses on the American West Depth Study and the Medicine Through Time Development Study. It lasts for 2 hours and is worth 45% of your overall GCSE grade.

Paper 2 is a source-based paper that focuses on a British topic in the Medicine Through Time Development Study. This paper is 1 hour and 30 minutes long, making up 30% of the overall GCSE grade.

The remaining 25% of the GCSE grade comes from the two pieces of coursework.



**The American West, 1840-95**

# Outline of the American West

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The first part of the course is the depth study. We examine the struggle for the Plains in the American West, reflecting on what Indian culture was like and how the movement of settlers onto the Plains impacted upon it, as well as why people moved and ultimately how the US Government dealt with the Native American population. The depth study is on the narrow time period of 1840 – 1895, but covers many different topics.

## Key Topics

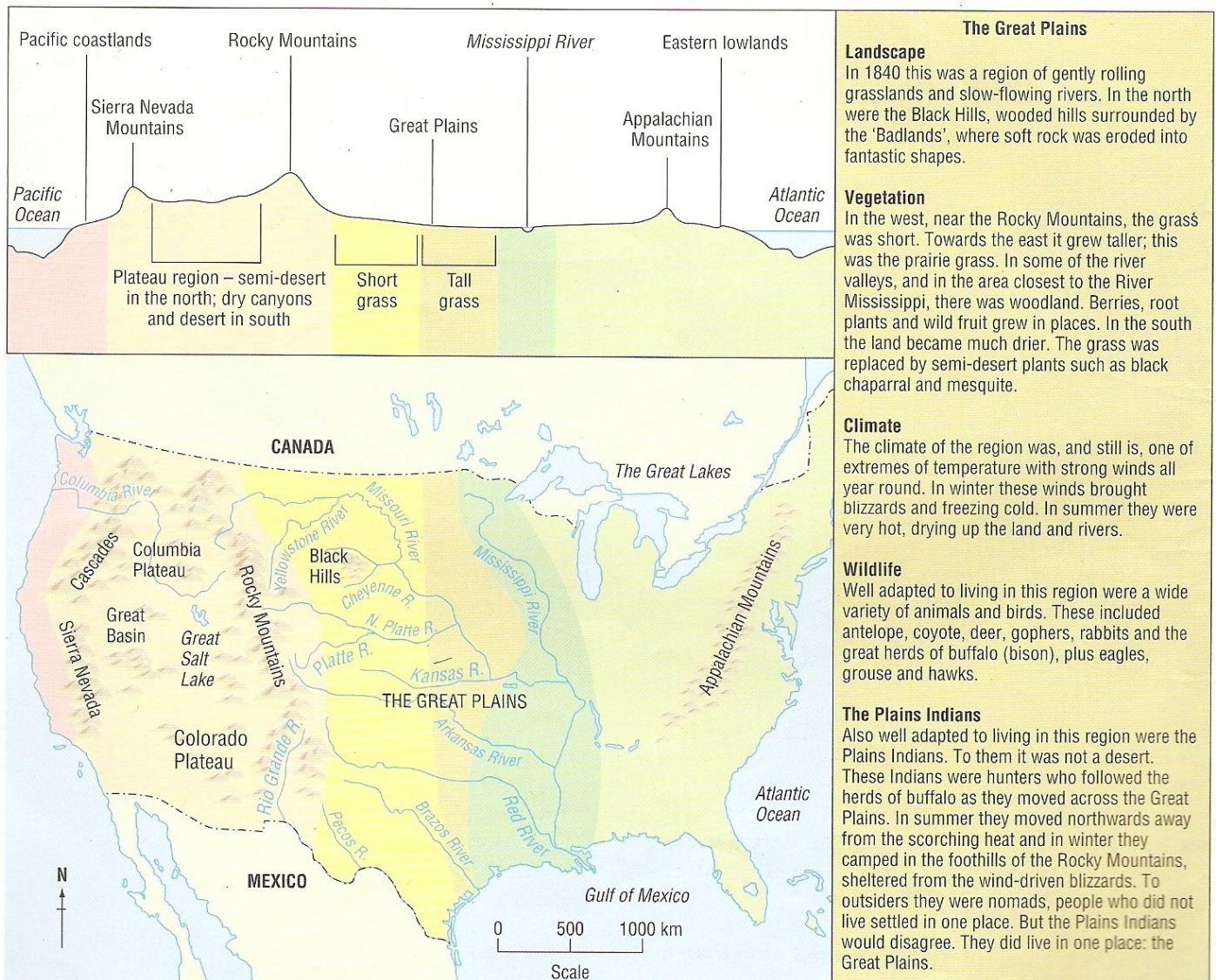
- Why people travelled west
- The life of the Indians in the West
- Cowboys and crime in the West
- Californian Gold Rush
- The Mormons
- The Indian Wars

# Geography of the West

Before we can appreciate the settlement of the west, it is worth looking at the geography of the region to better understand the problems facing settlers and how the Indians adapted to living in these areas.

## Geography of the West

- Harsh weather with extremes of hot and cold.
- Lack of timber for building.
- Lack of fresh drinking water and disease spread easily.
- Strong winds made it difficult to build upon the Plains.

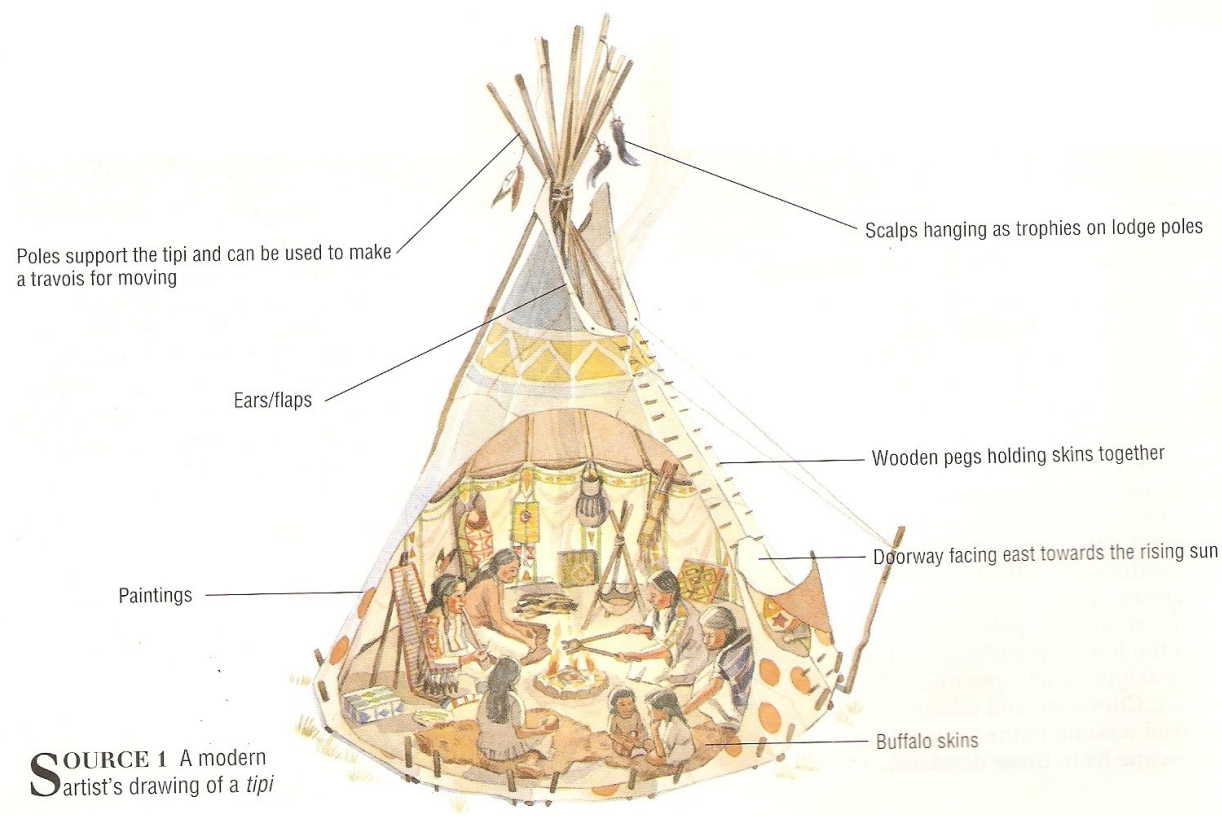


# The Plains Indians

## Fact File

### Fact File on the Plains Indians

Who were the Plains Indians?	Where did they come from?	Why did they move to the Great Plains?	Where did they live?
<p>The name given to the indigenous people of North America who lived there before the arrival of foreign explorers.</p>	<p>Original Indians came from Asia and spread across North America, adapting to their surroundings.</p> <p>Cherokee lived in the fertile farmlands of the east and grew maize, squash and beans.</p> <p>Ute's lived in the semi-desert region and gathered berries, roots, seeds and insects.</p>	<p><b>1640</b> – Pueblo Indians of Mexico revolted against the Spanish and captured horses from them. From then on, horses bred and trained by the Indian nations.</p> <p><b>1690s</b> – Nations like the Cheyenne and Sioux had horses and moved to the Plains to hunt buffalo, eventually giving up farming completely.</p> <p>European travellers brought diseases like cholera and smallpox to the eastern Indian nations, to which they had no resistance. In one smallpox epidemic (1830), 50% of the Indian population around the Mississippi River died, forcing the others to move west.</p>	<p>Lifestyle varied from nation to nation.</p> <p>Centre of the life was the tipi, which was a frame made from wood arranged into a circle with 10-20 buffalo skins providing protection from weather.</p> <p>Tipis could be put up or taken down within 10 minutes. Poles were also used to make travois (small sledge).</p> <p>A small flap at the top allowed smoke to escape, or let fresh air in.</p> <p>In winter, floor was covered with furs. In summer, the sides were rolled up.</p>



**Sample Question**

**Source A**

'The white man builds big house, cost much money, like big cage, shut out the sun, can never move. The tepee is much better to live in; always clean, warm in winter, cool in summer, easy to move.' (*Flying Hawk, a Sioux Chief*).

**Study Source A.**

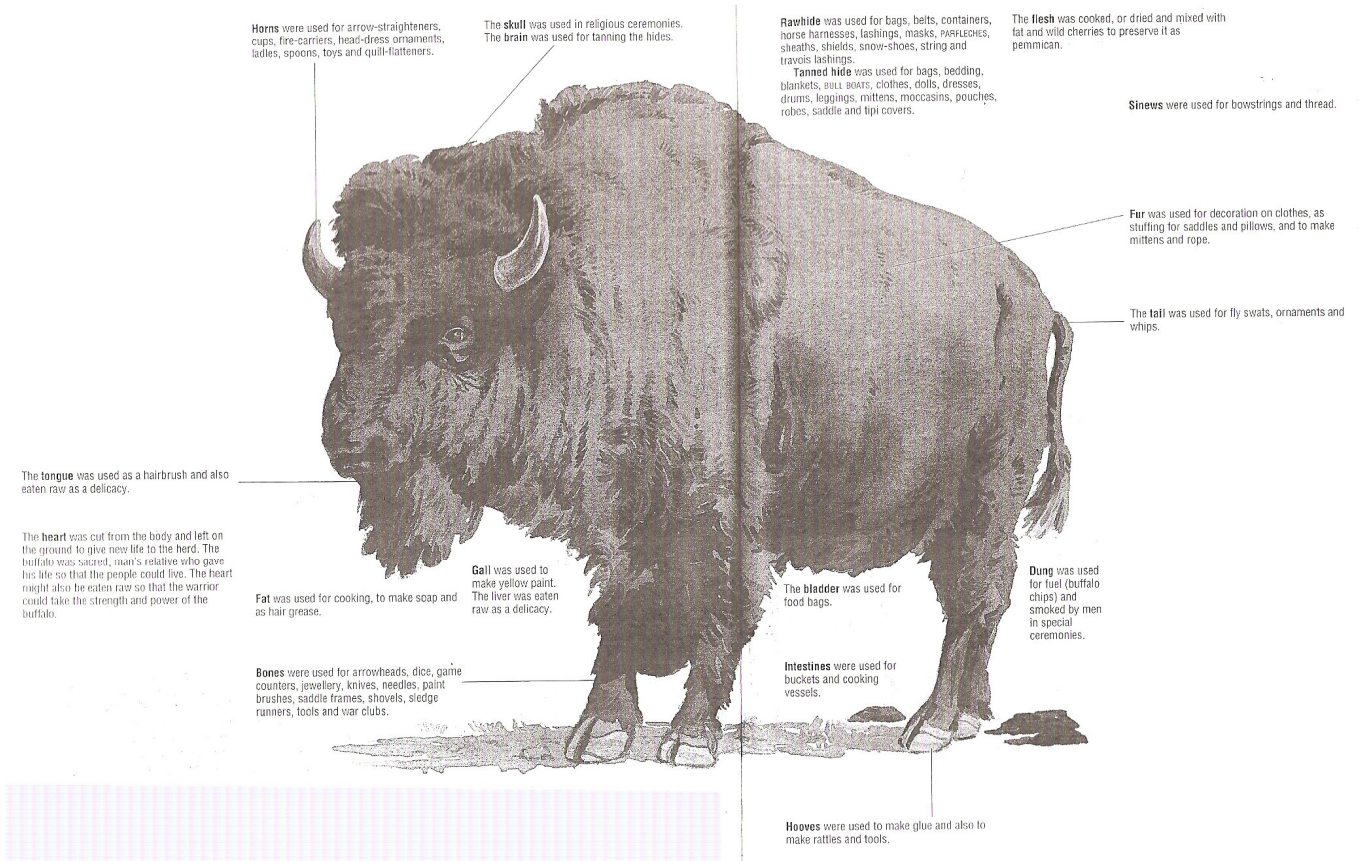
**Why did the Plains Indians live in tepees? Explain your answer using your knowledge. (6)**



# The Plains Indians

## The Buffalo

- The buffalo served as the main source of food, clothing and shelter for the Plains Indians.
- Before a hunt, there was a buffalo dance. The men dressed and imitated buffalo, which was a call upon the spirit world.
- There were two ways of buffalo hunting: on horseback/foot or herding them into narrow spaces.
- The hunts themselves were highly organised – they had to be to stop the buffalo from leaving the area.
- Two or three good hunts a year would be enough to provide food and shelter for the band.



### Sample Question

#### Study the Source.

Would the Plains Indians and the American government have reacted in the same way to what is happening in this picture? Explain your answer. (6)

# The Plains Indians

## Family Life

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### Men and Women

- Men were responsible for hunting, fighting and ensuring the safety of the group.
- Women were responsible for the tipi, food, water and clothing. They were also highly valued because of their role as mothers.

### Marriage

- There were some arranged marriages but most were love matches.
- A brave could impress a potential bride by his hunting and fighting skills. He would also give a gift of ponies to her family to show that he could provide for her.
- After marriage, the couple would live with the bride's family (matrilineal).
- Most of the men had only one wife, but polygamy was not uncommon especially amongst the rich as it made sure that all the women of the band were taken care of.
- Divorce was possible, with either partner being able to ask for divorce but the woman always kept the tipi.

### Children

- They were highly valued as they were the future generations of the group.
- Boys were taught to hunt and girls taught how to maintain a home by their parents, getting them ready for their responsibilities as adults.

### Elderly

- They were respected for their wisdom but when they were old and weak they could be left to die of exposure.
- This was done because the group was seen as more important than individuals.

# The Plains Indians

## Warfare & Spirituality

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- Indian warfare was a series of short raids rather than long term battles which they were not suited for.
- As well, the raids were more to do with stealing horses or destroying enemies as a result of rivalry over hunting and living spaces.
- The raids themselves were undertaken in summer and were used to keep the band together.
- This meant that many bands had traditional enemies – such as the Sioux, who held the Crow and Pawnee to be their enemies.
- Raids were also important for marriage within the band, as they were a way for a young man to get wealth and standing within the group.
- However, it was not considered heroic to die in battle as that would leave a wife and family behind.
- In most cases, more men were lost through hunting than fighting.

### Scalping

- Scalps were often taken as evidence of success in battle.
- If an enemy was scalped he could not enter the next life and be an enemy there.
- In some cases, this led to men who had been scalped 'stealing' the scalps of others to ensure that they could enter the next life.

### Spirituality

- Believed in Wakan Tanka, the Great Spirit.
- He created the world and everything in it.
- They also believed that everything in the world had a spirit.
- Circles were very important – the circle of seasons, villages were set out in circles, the tipi was circular, and most importantly the circle of life.
- The circle of life was the belief that they were born from the earth and would return to it.
- No one owned the earth – this was one of the reasons they found it difficult to understand the idea of land ownership.

### Visions

- They were seen as a way to contact the spirit world.
- Young men and women got their adult name through a vision.
- Women could contact the spirit world during menstruation.

### Dances and Ceremonies

- Used to contact the spirits – particularly after a hunt or victory in war.
- The most famous was the Sun Dance, used to induce a trance or vision, or to ask for help from the spirit world.

### Medicine and Healing

- Shaman, or medicine man, used to heal and cure disease.
- Used herbs but also used the power of spirits.
- Plains Indians did not see illness in just physical terms; they could also have a spiritual cause.
- Shamans also used to make potions from herbs and plants – they knew the properties of over 2,000 plants
- Fees were paid in ponies, which were returned if the treatment was unsuccessful.

## The Plains Indians First Western Perceptions

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Name	George Catlin (1796 – 1872)	Francis Parkman (1823 – 1893)	Colonel Richard I Dodge
Background Information	Wanted to make a collection of drawings and paintings of the Indians before they disappeared. His exhibition contained over 500 images and was shown all over America.	From a rich Boston family, he was interested in seeing the 'primitive' Indian. Wrote a book called the <i>Oregon Trail</i> based on his meetings with the Sioux.	A colonel in the cavalry regiment of the US army. Wanted to establish relations with the Comanche and Pawnee. Had better knowledge of them than Parkman.
Perception of the Indians	He recorded the Indians as they lived, showing their lifestyle but it was not always positive.	Whilst his book was popular, it was written from the perspective of a white middle-class male who was interested in the 'primitive' Indian and it reflected this.	Wrote about his experiences but they were coloured by the fact that he was a soldier and generally, his experiences of them were military based.

### Sample Question

#### Source A

'I do not hesitate in giving my opinion that it is wholly unfit for cultivation, and of course, uninhabitable by a people depending upon agriculture. The scarcity of wood and water will mean that it cannot be settled.' (*Major Stephen Long describing the Plains in 1819*)

#### Study Source A.

**Would the Plains Indians have agreed with this description of the Plains? Use the source and your knowledge to explain your answer. (6)**

# Attitudes towards the Land

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## The Plains Indians' View

- Land was a part of the circle of life.
- It could not be owned because it did not belong to any one person, it belonged to the nation.
- Could not understand how the settlers could buy and sell land!
- Some areas of the Plains were sacred and of religious importance to the Plains Indians, like the Black Hills.

## The Settlers' View

- Wanted land of their own and many moved because they felt the east of the USA was over-populated.
- Made little attempt to understand the views of the Indians towards the land and instead began to see them as an obstacle to their settlement of the West.
- Some tried to buy the land from the Indians but were unsuccessful.

## Manifest Destiny

- The phrase 'Manifest Destiny' appeared first in *The Morning Post* in 1845 and soon caught on.
- Believed that the people of the east (mainly European settlers) were destined to populate the whole continent.
- There was also a racist overtone to the phrase – the idea that white Europeans should 'civilise' the Plains and teach the Indians how to behave.



### Sample Question

#### Study the Source.

**How would this source encourage people in the East to move West onto the Plains? Use the source and your knowledge to explain your answer. (6)**

# Migrating West

## Early Settlers – Mountain Men and 49ers

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<b>Mountain Men</b>	<b>The 49ers</b>
<ul style="list-style-type: none"><li>• They were the first non-Indians to travel west.</li><li>• Many of the Indians were friendly to them.</li><li>• Trapped beavers and hunted other animals for their fur.</li><li>• Fur was very fashionable in the towns and cities of the East.</li><li>• Met once a year between 1825 and 1840 at Rendezvous. Up to 600 trappers would meet to sell or trade their furs for rifles, tobacco, coffee and sugar.</li><li>• At Rendezvous, the mountain men told merchants about the fertile lands in the west. This news eventually spread back to the east and encouraged the settlers to move.</li><li>• Much of the income that mountain men made was spent on drinking.</li><li>• Their life was hard and dangerous, facing problems with the weather, wild animals and the Indians.</li><li>• Sometimes relations would be difficult with the Indians, but some had Indian wives.</li><li>• By 1840, most of the beavers had been wiped out and fewer furs were traded.</li><li>• In 1837, a steamboat arrived carrying smallpox which killed many of the friendly Indians and made the mountain men unwelcome amongst the Indians.</li><li>• Eventually earned their living by guiding settlers across the Plains.</li></ul>	<ul style="list-style-type: none"><li>• In January 1848, gold was discovered in a river flowing westward from the Sierras.</li><li>• In December 1848, information about the discovery was printed in the newspapers.</li><li>• About 25,000 reached California by boat but many more travelled by the cheaper overland route.</li><li>• 5,000 people died from cholera on the journey.</li><li>• Conditions in the towns were terrible and illnesses such as dysentery, scurvy and malaria were common.</li><li>• By 1849, most claims had been taken and by 1853, all of the surface gold had gone.</li><li>• Very few people struck it rich but they made enough money to keep people moving to the area to make their fortune.</li></ul>

# Migrating West

## The Mormons

### Start of the Mormon Movement

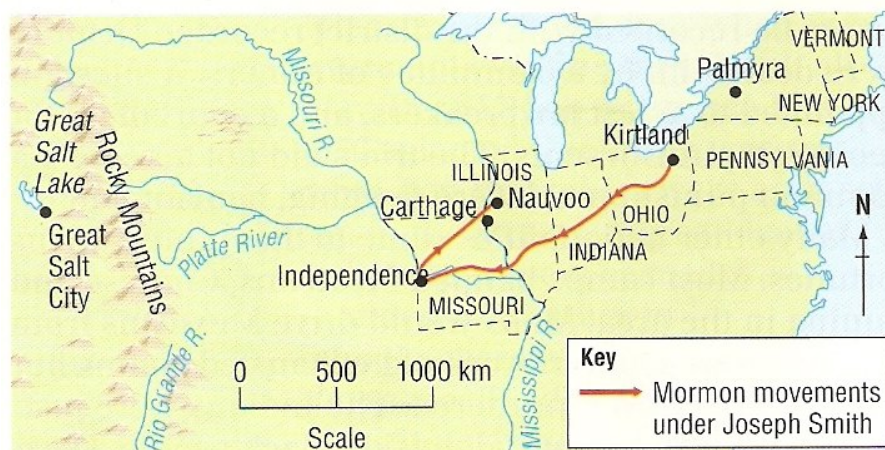
- An angel called Moroni visited Joseph Smith in 1827.
- He was told to dig for gold plates on a hillside in New York. The gold plates told the 'true' story of the lost tribes of Israel.
- It also said the person who found the plates was to restore the Church of Christ in America. The Mormons believe that they are descended from these lost tribes.
- Smith said that no one was to see the plates and translated them in secret.
- The Church of Jesus Christ of the Latter Day Saints started with just 5 followers but by 1831 had 100 members.
- They also believed that they were the chosen people of God and that when he re-appeared they would be the only ones saved!

### The Mormons in Kirtland

- The movement grew up in Kirtland; they were successful and built a mill, store, bank and printing press.
- The successes of the Mormons made the local people jealous.
- The Mormons were driven out in 1837 when there was an economic crisis and the bank collapsed and many non-Mormons lost their money. The crisis was not the Mormons' fault but still they were driven out.

### The Move to Missouri

- The Mormons then moved to Missouri but again were unpopular with the locals.
- They brought large areas of land and developed farms.
- They were blamed for encouraging slaves to rebel against their masters. They also received the blame when local settlers rioted, ending with Smith being arrested and sentenced to death.
- The government made a law to ban the Mormons from Missouri.
- In the winter of 1858, Smith was released on the condition that the Mormons moved to Nauvoo, Illinois.



**SOURCE 3** A map showing the various places where the Mormons settled

### The Mormons in Nauvoo

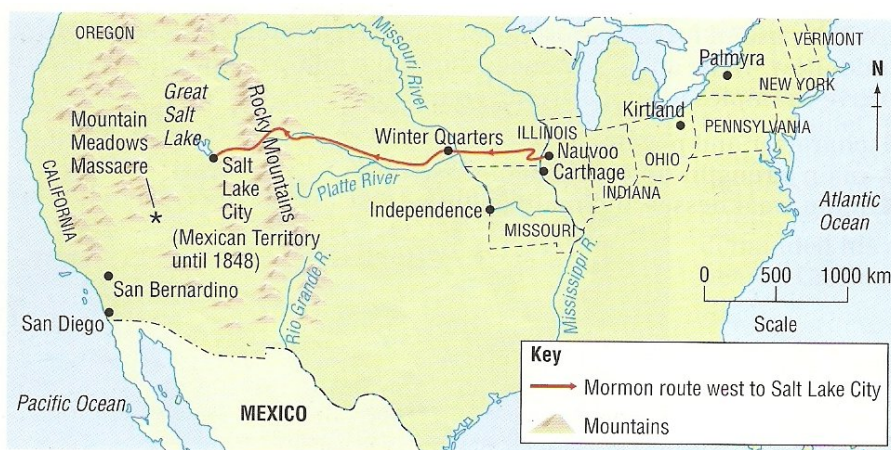
- By 1844, Nauvoo was the largest city in Illinois and had 34,000 more Mormons on the way as Mormon missionaries worked hard in Europe recruiting new members from the poor and homeless.
- They wanted to create an ideal society without drinking, poverty and homelessness – Nauvoo was a success because of this.
- At Nauvoo, the Mormons were able to govern themselves and had an army of 4,000 called the Danites.
- Others in the area began to be jealous of the Mormons and their successes, just as had happened previously.
- Smith angered many Mormons when he said he had a revelation, which meant that some Mormons could practice polygamy (more than one wife). At this time, he already had several.
- He was criticised in newspapers and he reacted by destroying the printing press for which he was arrested as a dictator.
- Outsiders were outraged by the new polygamy law and on 27<sup>th</sup> June 1845 a mob of 200 attacked the jail and shot Smith.

### **Was Joseph Smith more of a help or harm to the Mormons?**

<u>Help</u>	<u>Harm</u>
<ul style="list-style-type: none"> <li>• Charisma – attracted many followers.</li> <li>• Tried to help the poor and wanted equality.</li> <li>• Made sure there was order at Nauvoo with no vices like drinking or smoking.</li> </ul>	<ul style="list-style-type: none"> <li>• Dictator – didn't listen to others!</li> <li>• Tried to make people do what he wanted. Closed down the newspaper that complained about him.</li> <li>• Polygamy.</li> <li>• Isolationist – by keeping them apart he made the Mormons unpopular.</li> </ul>

### Brigham Young and the Move West

- Young realised that the Mormons would never find peace in the East and needed a place that was isolated and unwanted for them to settle in.
- Believed that the Mormons needed to move from the east and read about the Salt Lake in the *Oregon Trail* guidebook written by Francis Parkman.
- At the time, Salt Lake was under the control of Mexico and not a part of the United States.
- Young decided that the Mormons would move to the Salt Lake in 1846, but he had to solve many of the problems that moving a massive number of people across the Plains and over the Rocky Mountains would cause, as well as creating a new thriving community at Salt Lake.

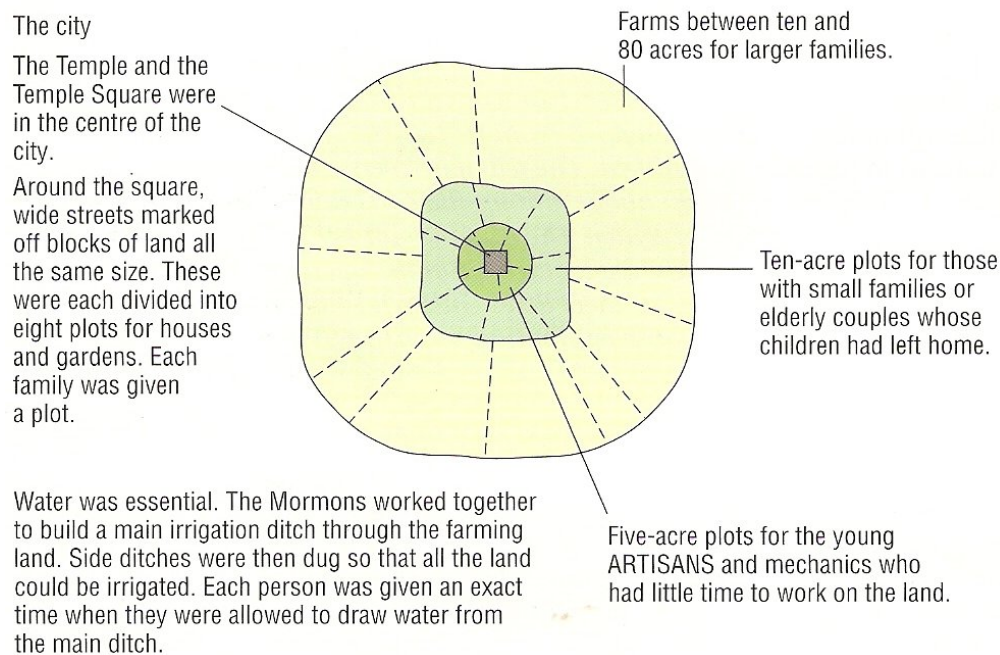


**S**OURCE 2 A map showing the journey to Salt Lake



### How did Young organise the move?

- Young was a good organiser – he had to be as he had 27 wives! He was also practical and down to earth.
- He built wagons and collected supplies as well as sending out a pioneer band in February 1846 to set up the first way station in Iowa.
- The wagons were to be divided into separate wagon trains of 100 and then into ‘tens’.
- Young himself set off with the first train and every so often would plant crops along the route for those following behind him.
- By June 1846, Young had reached the Missouri river and made his winter camp there. 1,000 cabins were built but they were unprepared for the weather and conditions on the Plains. By spring of 1847, plague and cold had killed 700 people. Young then set off with the pioneer band to select the site for the settlement at Salt Lake.
- He reached Salt Lake in July 1846, ignoring warnings from mountain men and others that the area was unliveable.
- At Salt Lake, land was divided out according to need and plots varied from 10 acres to 80. Young named this new Mormon state Deseret.
- In 1848, Mexico was defeated in a war with the USA and they gained control over Salt Lake. The US government refused to accept Deseret as a state and instead created the smaller state of Utah but allowed Young to continue as governor.



### Why were they successful?

- New areas were settled carefully with irrigation ditches being dug and a selection of farmers, shopkeepers and craftsmen were sent to settle.
- Towns were spread across Utah.
- Young was determined that the Mormons should be self-sufficient and to do this he increased the wheat production by three times between 1850 and 1860.
- The perpetual emigration fund meant that money could be lent to allow more people to emigrate and join the Mormons at Salt Lake. By 1851, 32,000 had converted and travelled from England alone.

### Mormon Failures

- Industrial progression was slow because of a lack of money and workers.
- The schools were badly equipped and children were kept off regularly to help with farming. They also were only expected to attend for three months a year.
- They also hoped to make all of their own clothes.

### The Mormon War

- Relations between the Mormons and the outside world were strained.
- They treated Indians as equals but they did try and convert them to Mormonism. However, this made the government suspicious and they believed that the Mormons and Indians were planning a revolt.
- Young also regularly ignored US laws in Utah.
- June 1857 – The US government sent 2,500 men against the Mormons to get control of Utah back. The Mormons believed that the US army was coming to destroy their homes so launched guerrilla attacks to stop the army reaching Salt Lake.

### The Mountain Meadow Massacre

- Emigrants passing through Utah insulted women and let the cattle out into the fields. The Indians were provoked and killed seven emigrants but the Mormons decided that all of the emigrants must be killed to stop the news getting out.
- They told the emigrants they had free passage but instead massacred them.
- The Mormons blamed the Indians but the public wanted them dealt with. Thousands of Mormon families fled as the US army got closer; they were portrayed as martyrs in the press.
- In 1858, the US government offered a pardon to Utah and the Mormons if US rule of the state was accepted.

### Utah as a part of the USA

- The US government banned polygamy in 1862 but ignored Utah. On its fifth application to join the USA, they were allowed entry provided they banned polygamy. Utah agreed and officially joined the USA in 1896.
- Today, there are around 3 million Mormons around the world.

#### **Sample Question 1**

**In the 1840s, the Mormons decided to go west.**

- Explain why the Mormons decided to move to the Great Salt Lake. (5)**
- Did the leadership of Joseph Smith help or harm the Mormons? Explain your answer. (7)**
- Why were the Mormons so successful at the Great Salt Lake? (8)**

#### **Sample Question 2**

**The Mormons were among the first settlers to cross the Plains.**

- What were the main beliefs of the Mormons? (5)**
- Why were the Mormons so unpopular when they lived in the east of America? (7)**
- 'The following were all equally important reasons why the Mormons were so successful: (i) the leadership of Joseph Smith; (ii) the leadership of Brigham Young; (iii) polygamy.' Do you agree with this statement? Explain your answer, referring to (i), (ii) and (iii). (8)**

# Migrating West Homesteaders

## End of the Civil War

1000s of soldiers demobbed along with newly freed slaves were looking for a new life.

## Why did people want to settle on the Plains?

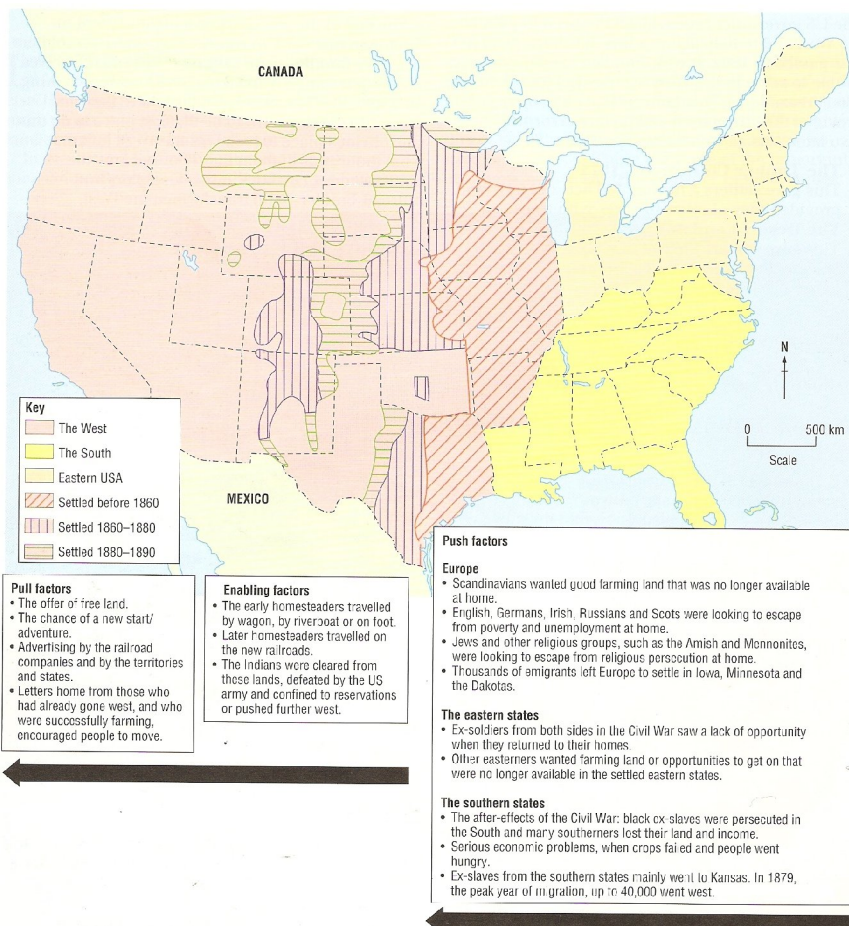
### The Railroads

Railroads linked east to west. It was easier for homesteaders to move to the west and land was sold off cheaply around the railroad. Industry could also transport goods cheaply.

### Government Actions

Timber Culture Act (1873) gave settlers 160 acres of extra land for free if planted 40 acres of trees.

Desert Land Act (1877) gave settlers the right to buy 640 acres of cheap land where rainfall was low.



### What was the journey west like for the wagon trains?

- Attacks from Indians.
- Weather was very hot with a blazing sun each day.
- The lack of water killed horses, oxen and sometimes people.
- The land was difficult to cross; it included the Sierra Nevada mountain range which was covered in snow and almost impossible to cross during winter.

### Problems of Living & Farming on the Plains

- Water shortages, as wells were expensive to dig.
- Extremes of weather; it was hot in the summer and cold in winter, the shortage of rain made crops fail and those that would grow in the east would not in the west. Natural disasters occurred – dry grass caught fire easily and there were plagues of grasshoppers.
- Lack of fuel as there was no wood. Homesteaders would use dung instead.
- Building materials were expensive and the lack of wood also meant people could not build traditional houses, so instead they built them out of sod with earth floors. Outside walls were plastered with clay and roofed with boards of grass and sod.
- Dirt and disease were common in sod houses. Fleas, pests, mice and snakes were all common.
- Ploughing – the land itself had never been ploughed before and crops had dense roots which made it a backbreaking task.
- The crops themselves needed protecting but with no wood for fencing, crops were trampled and eaten.

### Solutions

- Windmills were used to pump water from the ground and used to irrigate crops.
- Dry farming – the land was ploughed after heavy rain or snow to keep the moisture in.
- Growing a surplus – money from selling was used to buy new equipment.
- New crops – winter wheat was brought by Russian settlers.
- Barbed wire – cheap and effective solution to the problems of fencing and protecting crops.
- Machinery – new ploughs which could turn heavy soil.

### **Sample Question**

#### **Source B**

'There came through yesterday a family with two wagons, headed east. They had four horses, very poor, and one sad-eyed dog. A few farm implements were loaded in the wagon. For ten years they had been fighting the elements. They had such high hopes when they went out west.'

*(From a Kansas newspaper, 1895)*

#### **Study Source B.**

**Why do you think this family was 'headed east'? Use the source and your knowledge to explain your answer.**

# The Cattle Industry

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## The Beginnings

- Began in Texas with the longhorns, and by 1850 was a major centre for ranching.
- There were problems with transporting cattle: the longhorns carried Texas fever, which killed other livestock so ranchers were turned back.
- New markets were found – meat for the army, Indians on the reservations and people living in the East.
- Ranchers like Charles Goodnight made their fortune by shipping their cattle.
- The ranchers needed to transport their cattle to the east to be sold.

## Cow Towns

- Entrepreneurs like Joseph McCoy set up shipping points like that at Abilene to move the cattle east.
- Pens were built and cattle were driven from Texas to Abilene and then shipped east by railroad for slaughter.
- An animal was worth ten times the value in Abilene than in Texas.
- During the summer months between 1867 and 1885 nearly 4 million cattle passed through cow towns like Abilene.
- Cow trails started across the plains to move the cattle to cow towns.

## Cattle Drives

- Took place in the summer.
- Cows were driven from Texas to the cow towns for sale.
- Dangerous due to the environment of the areas they travelled across and Indian attacks.

## Early Ranchers

- John Iliff built up a herd after discovering that they could survive on the plains during the winter months.
- Charles Goodnight stocked longhorns and began ranching in Colorado. 7 years later in 1877 he had one million acres and 100,000 cattle.

## Success of the 'Open Range' (Unfenced Ranching)

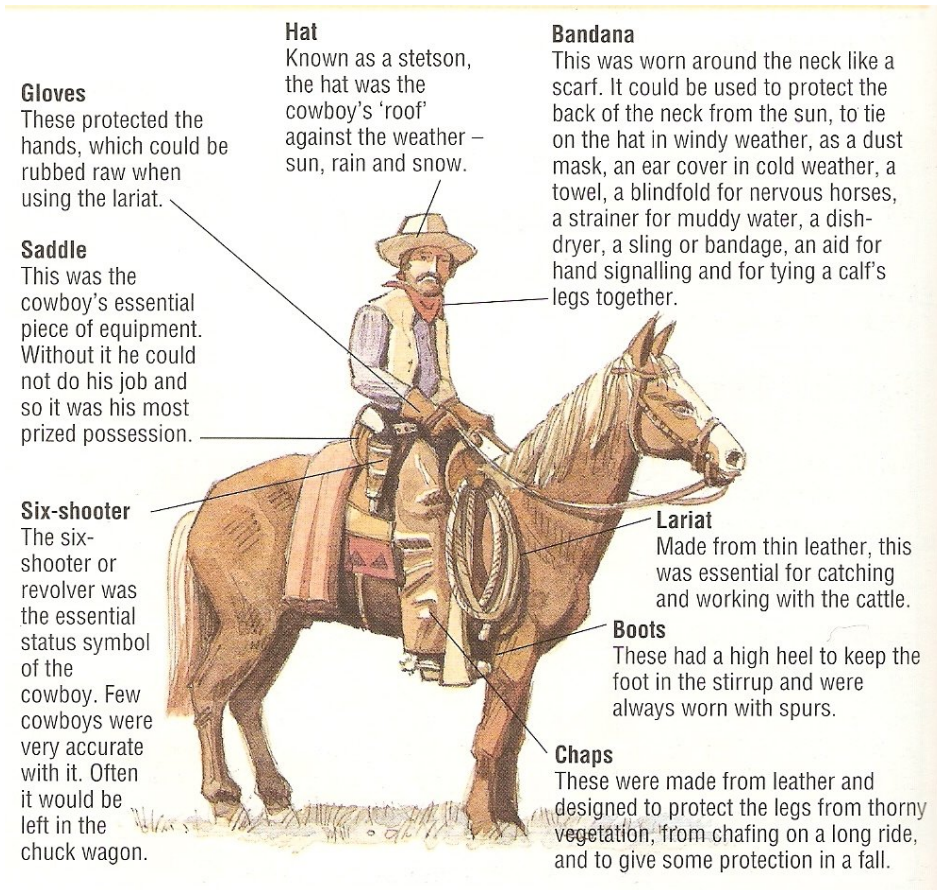
- The Indians had been defeated and were on reservations. The buffalo that they had traditionally hunted were now extinct, which meant there was more grass for the cows.
- Cattle were branded with hot irons and marks. This meant they were easily identified and prevented theft.
- Winter killed off the ticks that carried the Texas fever.
- Railroads meant that cows could be moved easily to the east in refrigerated cars which kept the animals cool during their journey.

## End of the 'Open Range'

- More and more animals were put out on the Plains as it was seen as a good way of making money. However, this put a strain on the grass and a major drought in 1883 dried out the grass.
- The demand and price of beef fell in the east, meaning more animals were left on the Plains with less grass to eat.
- The winter of 1886-7 killed up to 15% of the herds in the worst-hit areas.
- The 'Open Ranges' were eventually replaced with smaller ranches fenced in with barbed wire, which was important as it kept out competition and cut the number of cowboys needed, reducing the cost in wages and preventing animals from escaping.

## The Role of the Cowboy

- The original cowboys were the Spanish vaqueros, with many of the later cowboys being black or Mexican.
- They would patrol the boundaries to prevent strays and protect the cattle from rustlers and predators (line riding) as well as looking after the sick and injured animals.
- They were also responsible for rounding up and branding young animals so that they could be identified.



## Why was there argument between cattle ranchers and homesteaders?

<u>Sheep Farmers</u>	<u>Barbed Wire</u>	<u>Conflict</u>
<p>By 1880, large numbers of sheep were competing with cattle for grazing on the plains.</p> <p>Sheep farms were a smaller investment and made a larger return.</p> <p>Some shepherds and sheep were killed by cattle ranchers.</p> <p>Many were immigrants, increasing racial tensions.</p>	<p>Used by the homesteaders to fence off their land.</p> <p>Denied cattle drives access to water and grass to graze on.</p> <p>Ranchers often fought back by cutting through the fences.</p>	<p>Ranchers vs. homesteaders over access to water and freedom to move cattle.</p> <p>Homesteaders vs. ranchers over damaged crops and spread of Texas fever.</p> <p>Ranchers vs. Sheep farmers over grazing.</p> <p>Ranchers killed shepherds and damaged property of hay farmers.</p>

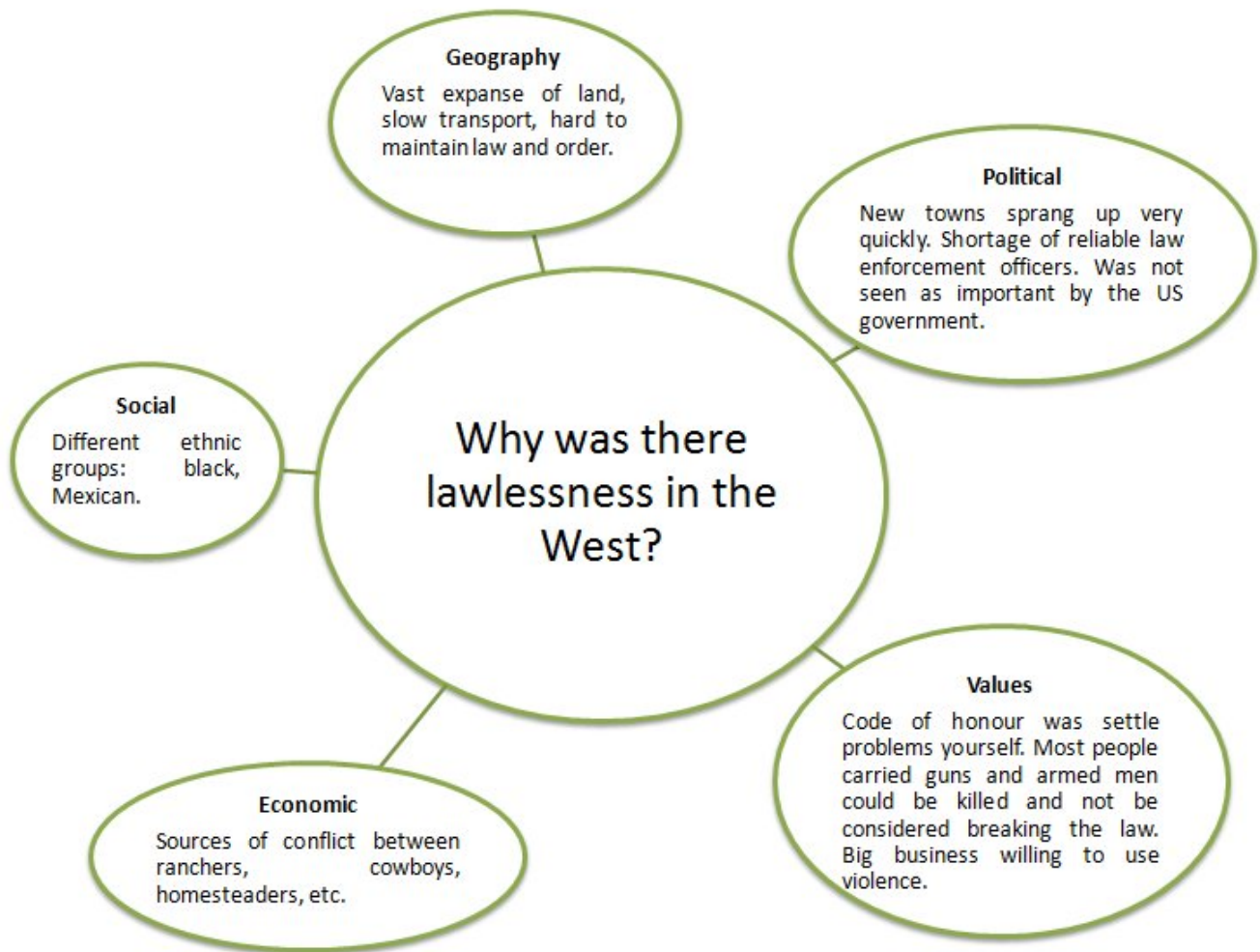
### **Sample Question**

**Both the homesteaders and the cattlemen had to overcome many problems on the plains.**

- a) Briefly describe the problems faced by homesteaders. (5)**
- b) Explain how most homesteaders overcame these problems. (7)**
- c) How successful were the cattlemen in coping with the problems facing cattle ranching on the plains? Explain your answer. (8)**

# How wild was the West?

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## Types of Crime

- Bank robbery, cattle rustling, claim jumping, horse stealing, fence cutting, shootings (also known as 'lead poisonings'), robbery from travellers and stage coaches, racial attacks, and train robbery.
- Worst incident of racial attack at Rock Springs, Wyoming in 1885. Thousands of Chinese had built railroads but now seen as a threat to jobs. 51 were killed and 400 injured as well as Chinese being driven from the town.
- Most famous train robbing gang was Butch Cassidy and the Wild Bunch. Gangs forced open carriage doors. By 1890s robberies were common but combated by express cars made of steel and armed guards.

## Forces of Law and Order

- **US Marshals** – Appointed by the President to oversee a state or territory. Marshals appointed a deputy to oversee a local area.
- **Sheriffs** – Elected by the people of the county for a 2-year period but they were in charge of too large an area to be truly effective.
- **Texas Rangers** – A small army of lawmen to enforce law in their state.
- **Pinkerton Detective Agency** – A private company hired by banks and others to catch outlaws.
- **Judges** – Appointed by the President to try cases but only 3 per state. Prisoners were held for a long time and often lynched before their trial.
- Few men made a career out of being lawmen as it was badly paid and dangerous.



## Vigilantes

- They were people who took the law into their own hands and would punish people who they thought were criminals, running them out of town or lynching them.
- Over 200 vigilante groups existed west of the Mississippi.
- **Example** – In Bannack, Mississippi 1864 a gang robbed travellers and miners. A vigilante committee was established after being unable to catch the group. The leader of the robbery gang was the sheriff and in 1865 he was captured, tried and hung by the vigilantes.
- However, vigilantes were also responsible for killing and attacking people who were guilty of no crime.
- It was not proper law and order, but instead served out revenge rather than justice.
- Sometimes the vigilante groups were used by businessmen to kill their rivals.
- They did some good in solving problems in communities that did not have marshals; in fact they were the only way to maintain law and order as they put people off committing crimes through fear of them.
- Sometimes though, people feared vigilantes more than criminal gangs and some ran towns as they liked.
- Proper law and order only arrived when sheriffs and marshals were appointed.

## Why was the Johnson County War important?

- Ranchers and homesteaders were using private armies to fight each other.
- One of the last times people took the law into their own hands.
- It made the government angry, resulting with the army deciding to take control and making the ranchers give up.
- This marks the long-term defeat of the open range and brought government control to the west by 'taming' the criminals.

### **Sample Question**

**The lack of law and order was a serious question in many parts of the newly settled west.**

- a) Explain why there was a lack of law and order in the mining towns. (5)**
- b) How far were vigilantes a solution to the problems of law and order in the West? Explain your answer. (7)**
- c) What was the importance of the Johnson County War in the development of the West? Explain your answer. (8)**

# Battle for the Plains

## The Indian Problem

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### Why were the Indians a problem?

- They occupied the land wanted by travellers, settlers, ranchers, miners and railroad companies.
- They were in the way of 'Manifest Destiny'.
- US government had two solutions to the problem of the Indians – either negotiate or remove them by force.

### Argument for Negotiation

- This was mainly wanted by the people living in the East.
- People had begun to understand more about the Plains Indians and realised that aggression could make relations between them more difficult.
- Felt that there had been enough bloodshed after 4 years of civil war.
- Many also felt that the Indians could be 'civilised'.

### Argument for Use of Force

- Mainly wanted by people living in the West who felt they had suffered Indian hostility.
- They also had the most to gain from the removal of the Indians as they wanted the Plains for themselves.
- Also felt that the army and not the Bureau of Indian Affairs should have control of the Indian question as they had the most experience of dealing with them.

**To solve the Indian problem, the US government came up with the concept of the reservations.**

### What was a reservation?

- A defined area to which the Indians would be relocated. It was never to be sold and no settlers were allowed onto this area.
- The Indians were also to be given a cash payment every year and taught how to farm.

### Problems with the Reservations

- They relied on a successful harvest but in 1861, cutworms destroyed the crops of the Sioux in Minnesota.
- Settlers would have to recognise that this land belonged to the Indians and they could not force them off it.
- The government had to enforce and stop people crossing the land, which they failed to do when gold was found in the Black Hills.
- It was badly organised – the first payment did not arrive on time and the Santee Sioux were unable to buy food so threatened violence.

# Battle for the Plains Timeline

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## Phases One – Plains seen as desert and unwanted by settlers.

1825 – Start of the removal of eastern Indian nations onto the reservations.

1830 – Indian Removal Act, eastern Indians removed to reservations.

1832 – Bureau of Indian Affairs set up.

1834 – Plains set aside as Indian country, the Permanent Indian Frontier.

1838 – All eastern Indian nations on reservations.

## Phases Two – A barrier for outsiders to cross

1845 – Texas annexed from Mexico.

1846 – Oregon purchased from Britain and the Mormons began to move to Salt Lake. American-Mexican War ends with California and New Mexico as part of US.

1848 – Gold discovered in California. Settlers move to Oregon and California.

## Phases Three – Isolated incidents of violence

1851 – Fort Laramie Treaty, policy of concentration, each nation had hunting area, cleared way for travellers.

1854 – Settlers began moving to Nebraska and Kansas.

1858 – John Butterfield's overland mail coaches began delivering.

Phase Four – Serious conflict on the Plains

1859 – Gold discovered at Pikes Peak, miners entered Indian territory.

1861 – Cheyenne and Arapaho began to attack miners, travellers and rail surveyors.

1862 – Little Crow's war.

1863 – Cheyenne war.

1864 – Sand Creek Massacre.

1865 – Red Cloud's war.

1866 – Fetterman Fight.

1867 – Medicine Lodge Treaty with Arapaho, Cheyenne, Comanche and Kiowa Indians.

1868 – Fort Laramie Treaty with the Sioux. Reservations contracted and winter campaign by US army on southern plains.

1869 – Transcontinental railway completed.

Phase Five – Final conflict on the Great Plains

1871 – Destruction of the southern buffalo herd began.

1874 – Gold discovered in the Black Hills. Adobe Walls – southern nations attacked buffalo hunters.

1875 – Southern buffalo herd destroyed.

1876 – The Great Sioux war: Battles of the Rosebud and the Little Bighorn.

1877 – Last free Sioux under Crazy Horse surrender.

Phase Six – Reservations and the destruction of the Plains Indians

1880 – Destruction of the northern buffalo herd began.

1883 – Northern herd destroyed.

1885 – All Indian nations on reservations.

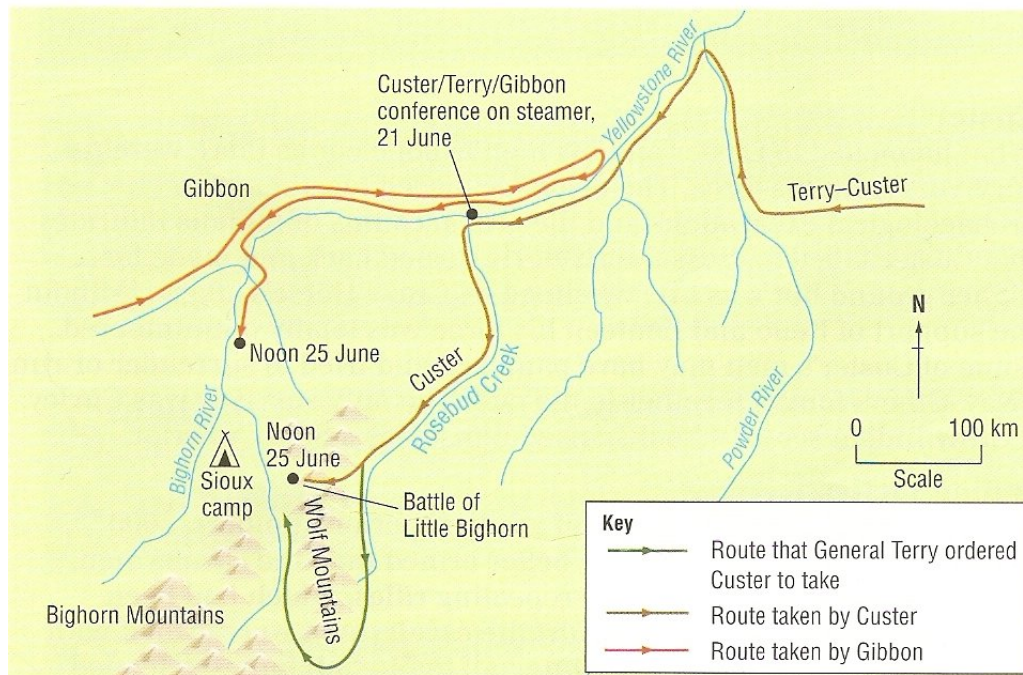
1890 – Ghost Dance Movement and the massacre at Wounded Knee. Director of the Census Bureau announced that the frontier closed and fully settled.

# Battle for the Plains Indian Wars

<b>Little Crow's War</b>	<b>Red Cloud's War</b>	<b>Great Sioux War</b>
<p><u>Events</u></p> <ul style="list-style-type: none"> <li>• Little Crow unable to stop his starving people from killing 5 settlers on 17<sup>th</sup> August 1862.</li> <li>• Next day, Little Crow led an attack on the Indian Agency and killed 20 with 10 women and children captured.</li> <li>• An ambush by Little Crow left 21 soldiers dead out of the 45 who had come to support the agency.</li> <li>• Fought until September but Little Crow unable to take Fort Ridgley.</li> <li>• Unable to keep a large enough force together, getting others to join the Santee and bands of youths were undisciplined.</li> </ul> <p><u>Results</u></p> <ul style="list-style-type: none"> <li>• Over 700 settlers were killed but Little Crow knew he could not win and left the rest to surrender.</li> <li>• By October, 2000 Santee Sioux were captured or surrendered. By November 5<sup>th</sup>, 308 were convicted but only 36 hung.</li> <li>• The other 2000 transferred to Crow Creek in 1863.</li> <li>• Land was barren with no drinking water. 400 died over the first winter.</li> </ul>	<p><u>Events</u></p> <ul style="list-style-type: none"> <li>• In 1862, gold discovered in Montana and the Bozeman trail crossed Sioux lands.</li> <li>• The government didn't stop miners crossing so the Sioux began to attack travellers.</li> <li>• US government opened talks with Red Cloud but started to fortify the trail.</li> <li>• Red Cloud broke off talks and began to attack the forts during winter 1866.</li> <li>• Could not take any forts but wiped out a detachment of 80 soldiers.</li> <li>• Red Cloud able to keep several Sioux bands plus some Arapaho and Cheyenne together.</li> </ul> <p><u>Results</u></p> <ul style="list-style-type: none"> <li>• The government forced to change policy with a new route to the mines found.</li> <li>• The army retreated from the forts and under the Fort Laramie Treaty, the Great Sioux reservation was created.</li> <li>• Many unhappy with Red Cloud's decision and flocked to new leaders like Sitting Bull and Crazy Horse.</li> </ul>	<p><u>Events</u></p> <ul style="list-style-type: none"> <li>• In 1874, an expedition led by General Custer entered reservation land and broke the Fort Laramie Treaty.</li> <li>• Custer reported that there was gold in the area and miners entered the Black Hills.</li> <li>• The government was unable/unwilling to stop the miners moving in.</li> <li>• The government offered \$6 million to buy the Black Hills or \$400,000 a year for mineral rights.</li> <li>• Offer was rejected and relations broke down.</li> </ul> <p><u>Results</u></p> <ul style="list-style-type: none"> <li>• In December 1875, all Sioux ordered to return to their reservation (impossible in winter).</li> <li>• Approximately 7000 Indians (mostly Sioux but also Arapaho and Cheyenne) with Sitting Bull in Powder River country.</li> <li>• Since 1863, he had refused to live on the reservation and many admired his leadership.</li> <li>• In February 1876, the US army ordered to treat Indians outside the reservations as hostile.</li> <li>• The following campaign led to the Battle of the Little Bighorn, which was a victory for the Indians and a defeat for the US army.</li> </ul>

# Battle for the Plains

## Battle of the Little Bighorn



### Plans

- The US army was divided into 3 columns that would trap the Indians and defeat them.
- General George Crook would lead a column of 1,049 cavalry and infantry north from Fort Fetterman, Colonel Gibbon led 450 infantry east from Fort Shaw, and Generals Terry & Custer led 1,000 cavalry, infantry and Gatling guns from Fort Abraham Lincoln.
- The plan had two weaknesses: there was no liaison between Terry and Crook and they did not have an accurate idea of how many Indians they would be facing.
- The number of Indians they expected to face was based on calculations by the Bureau of Indian Affairs, who said any of the columns would be enough to defeat the 800 Indians that they expected.

### Events

- Crazy Horse ambushed Crook's column on June 17<sup>th</sup> 1876. The losses were small with 24 dead and 63 wounded but they retreated south.
- Crazy Horse then took his forces to join Sitting Bull on the Little Bighorn. He suffered heavy losses with 36 dead and 63 wounded.
- The Battle of the Rosebud was a further success.
- Gibbon and Terry met at Yellowstone River where Terry divided his forces and sent the infantry along the river towards the Little Bighorn.
- Custer refused additional men and ammunition and marched over the Wolf Mountains instead of going round them. He arrived a day early at the Little Bighorn but his troops and horses were tired.
- On 25<sup>th</sup> June 1876, Custer reached the camp of Crazy Horse and Sitting Bull. Against advice, he decided to attack.
- Custer split his forces, which had been a success for him at the Battle of Wichita. Major Reno was sent with 125 men to attack the south of the camp whilst Custer took 260 men north to cross the river and attack.

## Results

- Major Reno was forced to retreat across the river where he was surrounded and suffered many casualties. They received an order from Custer to support him but could not.
- What happened to Custer is based on archaeological evidence and Indian accounts. It is thought that he took a defensive position but was outnumbered by about 2,000 Indians.
- The Indian forces had bought Winchester repeating rifles from traders, making them better equipped than the cavalry who only had single-fire rifles.
- Only one scout survived the battle by disguising himself as a Sioux warrior.
- Public reaction to the defeat was one of massive support for the army. Two new forts were built on the Yellowstone River and 2,500 reinforcements were sent west.
- The Indians split back into their bands and were followed and attacked during the autumn and winter. The size of the US army was just too much for the Indians to fight as well as protect their women and children. They were also short of ammunition and supplies.
- Eventually the bands gave in, and by the end of autumn 1876 most of them were back on the reservations.
- On May 5<sup>th</sup> 1877, Crazy Horse and his followers escaped to Canada, meaning that the Sioux resistance was effectively over.
- The Indians were forced to sell the Black Hills, Powder River country and the Bighorn Mountains. The reservations themselves were put under military rule and broken down into smaller areas with more land, horses and weapons taken away.

**Opinions over Custer are divided as we do not know exactly what happened to his soldiers, and the evidence presented at the enquiry held after the battle was conflicting. Major Reno said *"I had no confidence in his ability as a soldier"*. Major General Rosser said *"I never met . . . a more enterprising, gallant or dangerous enemy"*. Custer's motives for launching the attack are unclear but he would have been admired had the attack been successful.**

### **Sample Question**

**In June 1867, the Plains Indians defeated General Custer at the Battle of the Little Bighorn.**

- a) Describe the events leading up to the Battle of the Little Bighorn. (5)**
- b) Explain how the following factors together led to the defeat of Custer:**
  - Custer's character and military career;
  - the size of the Indian camp at the Little Bighorn;
  - weapons and tactics. (8)
- c) How far was the Battle of the Little Bighorn really a victory for the Plains Indians? Explain your answer. (7)**

# How did the USA destroy the Indian way of life?

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## Destruction of the Buffalo

- Between 1840 and 1885, the number of buffalo on the Plains fell from around 13 million to approximately 200.
- They were initially hunted for sport and the railroad companies offered hunting trips. Hunters were also employed by the companies to provide them with fresh meat and keep the buffalo from the rail tracks.
- In 1871, a tannery discovered that buffalo hide could be made into high-quality leather.
- By 1875, the entire southern herd was destroyed and the northern herd had disappeared by 1883.
- Unlike the Indians, hunters did not use the remains of the buffalo and instead left them to rot. However, bone pickers would collect the skeletons and sold them to make fertilisers and buttons as well as the hooves to make glue.
- The buffalo were one of the main causes of warfare on the Plains as the Indians initially attacked the hunters but were driven back with losses.
- Many people believe that the government encouraged the destruction of the herds to control the Indians.

## Reservation Conditions

- By the mid-1870s, the Indians were virtually prisoners on the reservations. The land that they lived on was not wanted by others as it was poor quality and difficult to farm. This made the Indians dependant on government handouts in order to survive.
- The Indians were demoralised and this affected the social status of group members.
- Corruption was also a problem – some of the Indian agents stole, provided poor medical care and poor quality rations.
- People were often punished on the reservations without a trial.
- However, some did benefit from the reservations. Lesser chiefs gained importance through co-operating with officials.
- Nations like the Pawnee, who by tradition were already farmers, did not face as great a change as nations like the Sioux.
- By the 1890s, Church groups were attempting to reform the reservations but this did not always end the corruption.

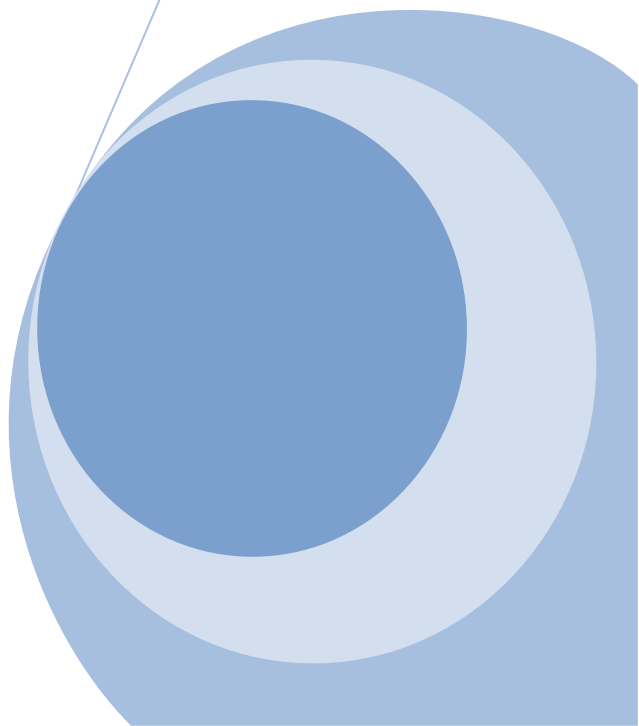
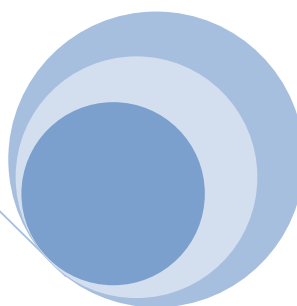
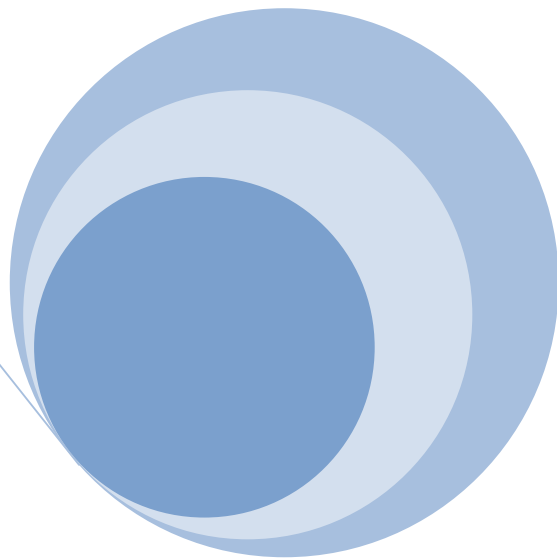
## Destruction of Indian Culture

- The size of the reservations was reduced, meaning that many of the Indian nations were split up.
- The power of chiefs was reduced by giving food directly to the head of families which was a legal matter controlled by the US government.
- The old Indian economy had to change as there was no meat or hides for tipis from the buffalo, and there was no chance to increase wealth by stealing horses.
- Religious dances and ceremonies were banned and the spiritual gap was filled by missionaries.
- Children were prepared for the 'white man's world' and sent away to boarding school without their parents' consent. Rations were stopped if parents refused and children were not allowed to speak their own language.



## The Ghost Dance Movement

- Many of the problems on the reservations led to despair.
- On New Year's Eve 1889, a Paiute holy man called Wovoka had a vision that an Indian messiah was coming, that all the whites would disappear and the buffalo would return if the Indians remained peaceful and danced the Ghost Dance.
- The Ghost Dance religion reached the western reservations in 1890 during a time of great hunger.
- Indian agents tried to ban the Ghost Dance but were unsuccessful and called in the army, who tried to arrest Sitting Bull. During fighting he was shot and his followers fled to join the band of Big Foot.
- On December 28<sup>th</sup> 1890, the 7<sup>th</sup> Cavalry took Big Foot and his band under guard to Wounded Knee.
- The next morning soldiers tried to disarm the Sioux but when one resisted, the army opened fire.



# Medicine Through Time

# Outline of Medicine Through Time

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The second part of the course is the development study. We examine how medicine has changed and what factors brought about these changes. The course can be broken down into the following three elements:

## The Development Study

- Changes in medicine and health over the last 5,000 years.
- Investigate how people believed illness was caused.
- How people treated illness and how these have changed over time.

## Key Questions

- Why did things change? Or stay the same?
- When did things change quickly? And why?
- When was there progression? Or regression?

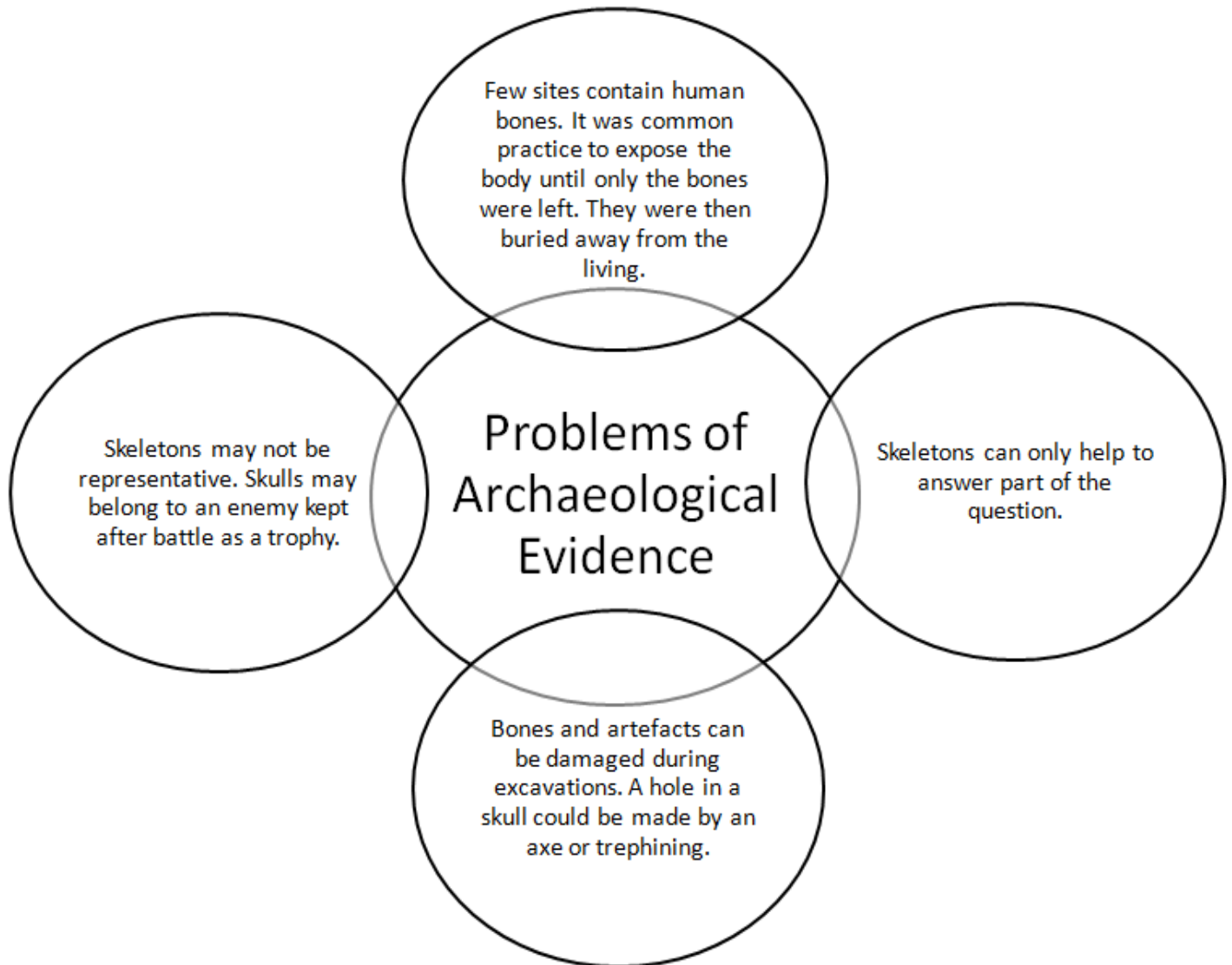
# Prehistoric Medicine

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Historians call the period of time before written records existed 'prehistoric', however, this was different from place to place. The prehistoric period in Egypt ended earlier than that in Britain because they were far more advanced and had begun to leave written evidence in the form of hieroglyphics.

## How do we find out about prehistoric medicine and health?

- Archaeological evidence.
- People who have similar beliefs to their ancestors, such as the Aborigines.



## Archaeological Evidence – The Tomb of the Eagles at Isbister, Orkney 3,000BC

- In 1958, Ronald Simison (a farmer) found a burial place when looking for building materials.
- Unknown to Simison, he had discovered the remains of a tribe that lived on the island.
- The site was not investigated because no one could afford to, but after 18 years Simison carried out his own investigation.
- He discovered 16,000 human bones, Eagle skulls and talons but no complete skeletons.
- Further investigations revealed 342 individual skeletons and archaeologists were able to build up a picture of their lifestyle and health.

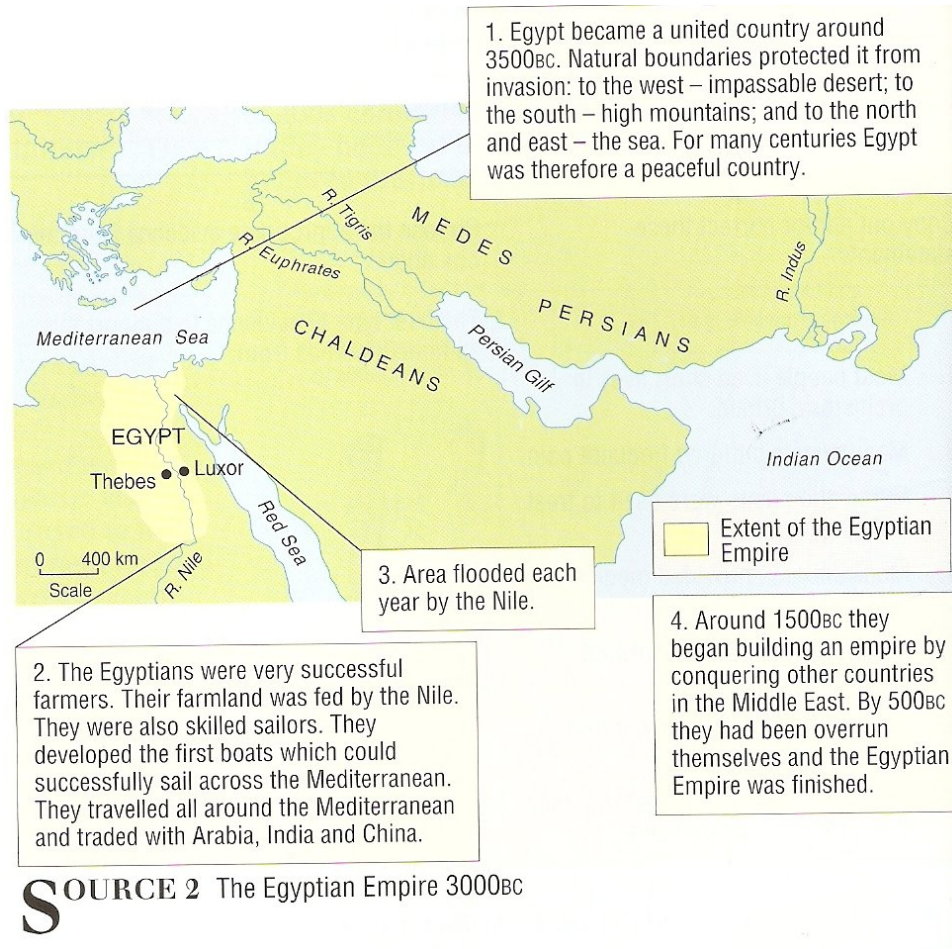
### How healthy were the Eagles?

- Few deaths from accidents, no fortifications or weapons.
- High infant mortality rate, few people lived to be over 40.
- Strong muscles and bones because of heavy manual work.
- Teeth were generally healthy.
- Most people suffered from osteo-arthritis (painful swelling of the joints). Nearly half of all adults and some children's skeletons showed evidence of it.
- Women died younger than men. Probably because of pregnancy, childbirth and heavy physical labour.

### Evidence from Living People – The Aborigines

- Lifestyle and beliefs changed little as no outside interference until recently.
- We can use evidence to find out how they lived during prehistoric times.
- **Spirits** – created the world and every person has one. People became sick if an evil spirit entered the body.
- **Medicine Man** – put patient into a trance, massaged the injured part and asked the spirit to leave the body. The spirit was captured in a quartz crystal. Possibly the placebo effect of the treatment made the patient feel better.
- **Charms** – used to ward off evil spirits. Could be made from seeds, plants or parts of the human body.
- **Herbs** – treated illness with an obvious cause in different ways. Herbs used to treat sickness, splints were used to help a broken limb to heal.

# Egyptian Medicine, 3000BC – 500BC



**S**OURCE 2 The Egyptian Empire 3000bc

## How did life in Egypt affect medicine?

- **Wealth** – powerful leaders, international trade, large cities and culturally advanced. Fertile farmland near the Nile and farming very successful.
- **Specialist Doctors** – mainly worked for the rich. Spent time trying to understand the causes of illness and treatments.
- **Metal Workers** – highly skilled, made surgical implements for doctors, better than those in prehistoric times.
- **Trade** – links with China, parts of Africa and India. New herbs were recommended as treatments.
- **Writing** – treatments and remedies could be written down on papyrus (type of paper made from reeds) and passed on.
- **Religion** – belief in life after death so bodies were embalmed. Parts of the body were removed and preserved.
- **The Nile** – made people think that the body was made of different channels and a blockage could cause a person to be unhealthy.

## What did the Egyptians know about illness?

- Knew about the major organs such as the heart, liver, brain, lungs and blood but not what they all did.
- Believed the heart the most important and carried air and water around the body.
- The channels around the body had to be clear or people would become sick.
- They knew a little about anatomy because of embalming but the body was not cut up for religious reasons.

## How were illnesses and injuries treated?

- **Herbs** – used to treat external infections. Ingredients like honey, malachite, salt and dates were commonly used.
- **Surgery** – a broken nose would be treated by inserting two linen plugs into the nose and bandaging the area until the swelling went down.
- **Magic and Charms** – the goddess Sekhmet was believed to cause and cure epidemics. People would be sent to the baths in sanctified water or sent to spend the night in the sanatorium and a god would cause him to dream his cure.
- **Lifestyle** – people covered their bed with nets at night to keep out mosquitoes. They were very clean, bathed and shaved often and practiced circumcision for hygiene reasons.

*Some of these treatments were successful and we can now prove why scientifically. Honey and malachite actually prevent bacteria growing in a wound so would have aided recovery.*

## Summary

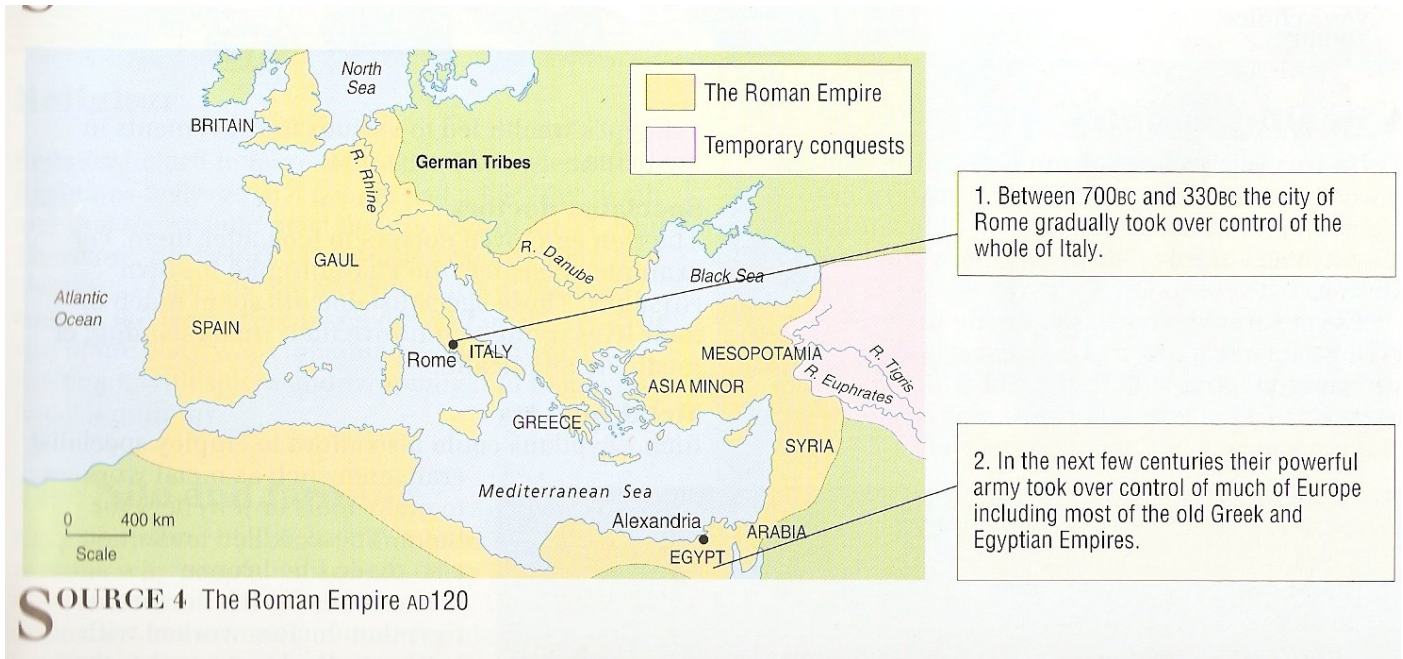
### Change

- Doctors as well as medicine men.
- Looked for logical causes of disease.
- Identify some parts of the body.
- New herbs used in medicine.
- Metal instruments used in surgery.

### Continuity

- Belief in gods and spirits.
- Used herbs.
- Did not fully understand how the body worked or what caused diseases.

# Greek Medicine, 1550BC – 500BC



The Greeks were more important than the Egyptians in medicine and health. However, some of their beliefs are a continuation of old ideas. There were many different gods, but the god of healing was called Asclepius. He worked with his daughters, Panacea and Hygeia.

## Asclepeia

- Temples began to be built in quiet areas all over Greece called an Asclepion.
- People believed that while in an Asclepion the god Asclepius visited patients and cured them using touch, herbal remedies, surgery and his snakes.
- Patients were healed but they never saw Asclepius and his daughters while they were being treated. Many such stories were told and written about.

*At the same time as believing in gods, new ideas began to be formulated about the causes and possible cures for disease. There were also new discoveries in mathematics, science, astronomy and politics.*

## How did doctors prevent and treat illness?

- **Observation** – they observed patients and wrote a record of their illness. They checked temperature, urine and breathing.
- **Advice** – doctors able to give a prognosis based on their observations of previous patients.
- **Treatments** – restored the balance by vomiting, purging their bowels, bleeding.
- **Surgery** – from 1200BC, iron and steel used to make instruments. Surgeons could set broken bones, amputate limbs. Very few operations took place inside the body except the draining of lungs in the case of pneumonia.

## Why was Alexandria so important?

- A centre of medical knowledge after a university and library built there.
- A collection of books from India, China and Egypt.
- The dissection of bodies was not allowed in Greece, but it was in Alexandria.
- Herophilus discovered that the brain controlled the body and the difference between the nerves and arteries.
- Erasistratus discovered that the heart was a pump and 1,800 years later was proved correct!



- People travelled from around the Mediterranean to study there, one was Galen who became a famous doctor in Roman times.

# Greek Medicine, 1550BC – 500BC

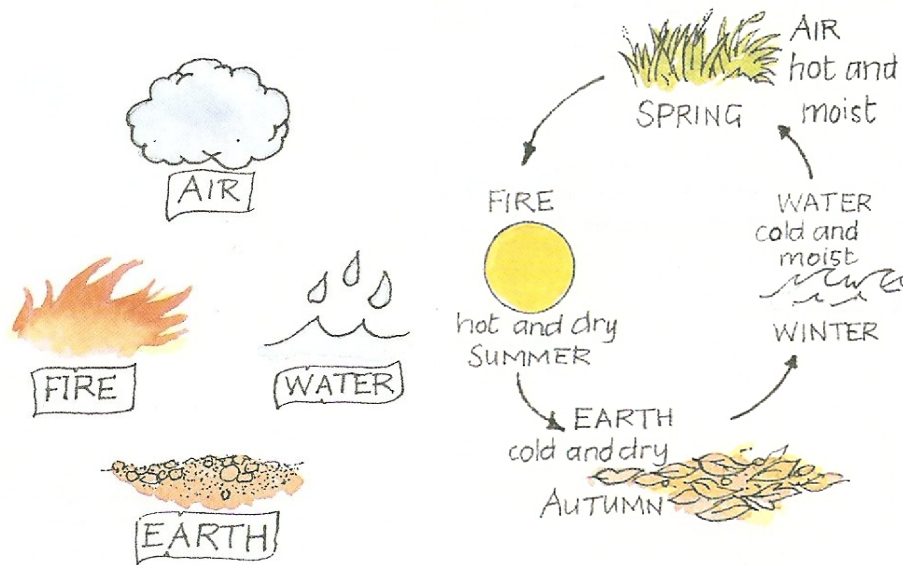
## The Four Humours

### The Theory of the Four Humours

- Doctors observed patients and found that when they were ill there was often a liquid coming out of the body.
- They called these liquids 'humours' and believed they caused illness.
- These humours were phlegm, blood, yellow bile and black bile.
- If a person had too much or too little of each humour then they would become ill.
- Doctors saw that their patients suffered coughing and sneezing phlegm (cold and moist).

*This theory stayed in use for over 1,000 years and changed how patients were treated.*

### How did the theory of the four humours fit in with other ideas?



**S**OURCE 2 The four elements

**S**OURCE 3 How the four seasons were linked to the four elements

### Was the theory of the four humours any good?

- They ate and exercised in moderation so were generally healthy.
- They would never find the real causes of disease.
- They did try to explain events and illnesses logically.
- The theory of the four humours was a real attempt to explain illness scientifically.
- Doctors like Hippocrates (born around 460BC) wrote medical books so ideas could be passed on.
- People began to trust doctors because they believed they knew what caused illness. This led to the Hippocratic Oath, which still governs the behaviour of doctors today.

## Sample Question

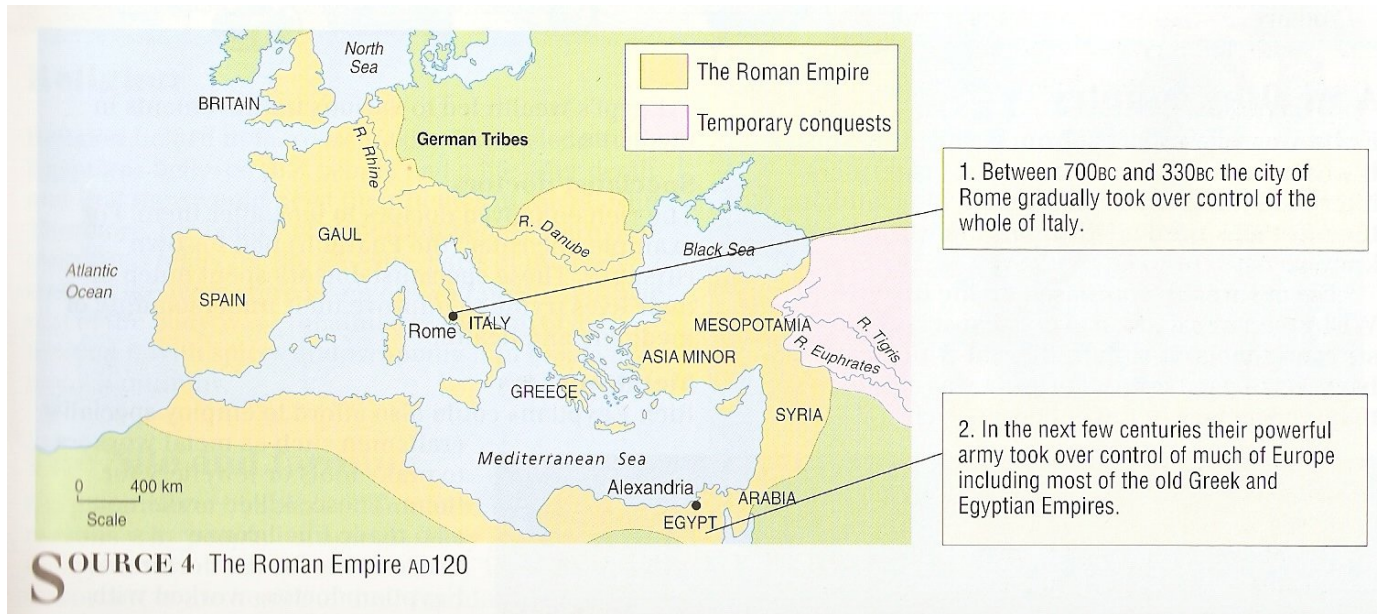
### Source A

'Man's body has blood, phlegm, yellow bile and black bile. These make up his parts and through them he feels illness or enjoys health. When all these humours are truly balanced he feels the most perfect health. Illness occurs when one of these humours is in excess, or is lessened.'

*From a book by Hippocrates written in the 5<sup>th</sup> Century BC.*

**The human body is not made up of the four humours as Hippocrates claimed. Does this mean that Hippocrates is not important in the history of medicine? Explain your answer.**

# Roman Medicine, 300BC – 500AD



## Connections

- First Roman doctors were Greek doctors captured as prisoners of war.
- Hippocrates and other Greek writers wrote many medical books which were used in Rome.
- The Romans took over Alexandria.
- Greek doctors moved to Rome because they could earn more money.

## Gods

- In 295BC, Rome was threatened by plague – some people tried herbs whilst others turned to the god Salus (god of health).
- However, they believed the gods did not listen to them so they built a temple to the Greek god Asclepius and the plague went away. The gods were seen as a first, not a last, resort.

## **Sample Question**

### **Source A**

‘During a severe plague in Rome in 293BC, the Romans asked for help from the Greek god Asclepius in his temple in Epidaurus. The Romans were told by the priests of the temple to build another temple in honour of Asclepius in Rome, and were presented with a sacred serpent. Accordingly a temple was built on an island of the River Tiber.’

*From a book, written in the 20<sup>th</sup> Century about the Romans.*

**Are you surprised that the Romans built a temple in honour of Asclepius? Explain your answer.**

## Doctors

- Employed in the cities to give free treatment to the poor.
- Some were women and played a vital role in medical treatment.
- Trained by Hippocratic collection or by becoming apprentices to experienced doctors.

## Treatments and Surgery

- Three main treatments: exercise, changes in diet and herbs/vegetables used as medical treatments.
- Used opium as a mild anaesthetic.
- Doctors believe that up to 20% of Roman herbal remedies would have been successful. However, 80% were not!
- Most common treatment was bleeding.
- Surgical procedures dangerous as still no anaesthetics or antiseptics and no detailed knowledge of anatomy.
- Amputations and eye operations.

## Theories about Disease

- Less time was spent on finding the causes of disease, Galen suggested that disease was spread by 'seeds' in the air but knew that this did not help to cure so tried to improve practical knowledge.

## Galen

- Born in AD129 in Greece, studied medicine for 12 years and spent time at a gladiators' school practising his surgical skills.
- In AD162, he travelled to Rome and became the Emperor's doctor as well as training others.

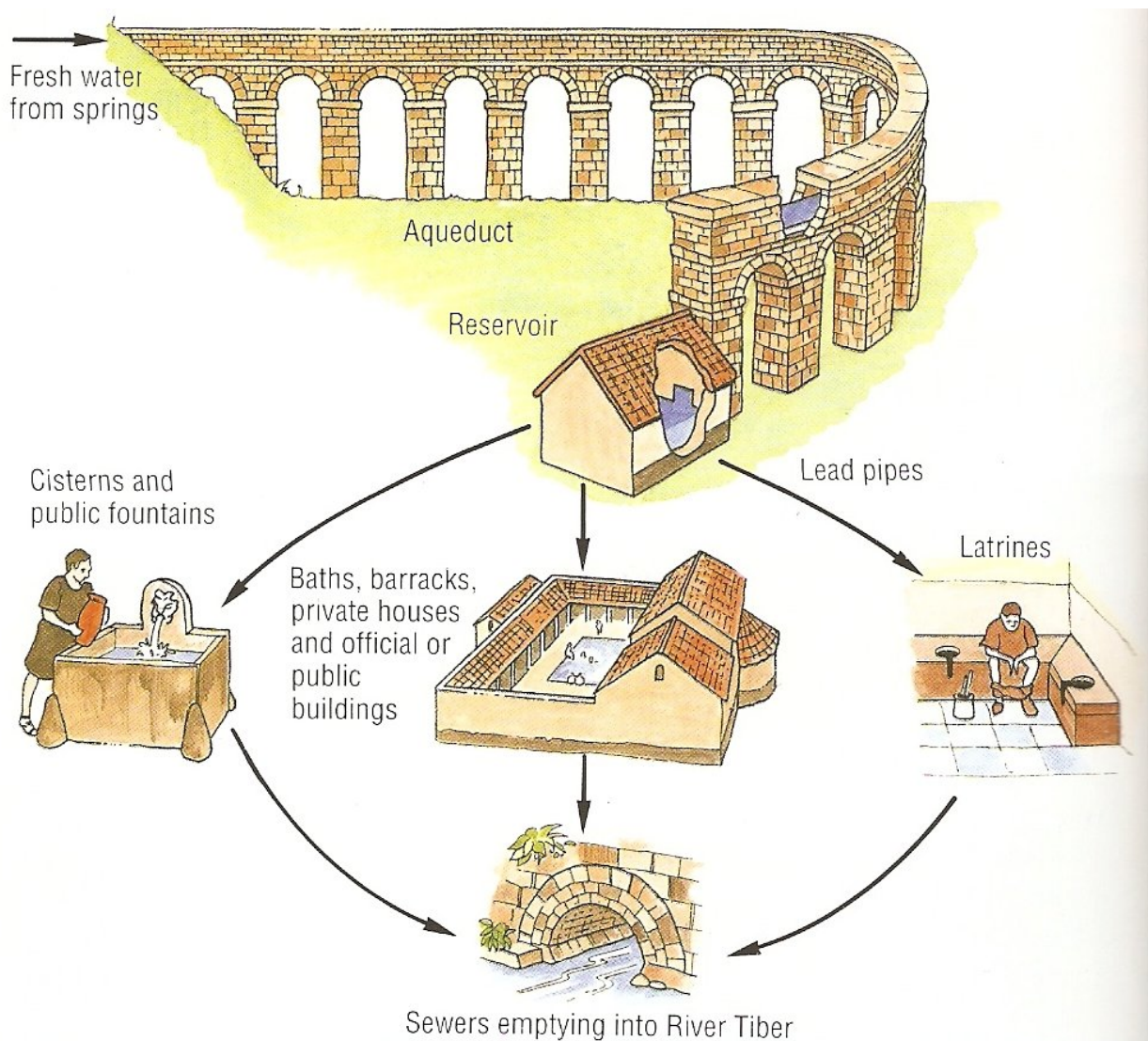
## Galen's Ideas

- Believed in the observation of patients.
- Like Hippocrates, believed in the four humours and balance of the humours. Believed in using **opposites** to treat patients, e.g. phlegm (cold and wet) needed something hot and dry like pepper to restore the balance.
- Told weak patients to take gentle exercise.
- Dissected bodies, but had to make do with animals in Rome so some of his work is wrong. He proved that the brain controlled the body, that veins and arteries carried blood and that animal anatomy was similar to that of humans.
- He wrote 60 books, which were used for the next 1,500 years.
- He tried to show how the human body fitted together which became important in later years because of Christian beliefs.

# Roman Medicine, 300BC – 500AD

## The Public Health System

- Romans were the first to understand the importance of clean water and hygiene.
- They were the first government to organise public health on a massive scale.
- Best health schemes at that time, which did much to help control the spread of disease in crowded cities.
- Fresh water was supplied to towns along the aqueducts and brick conduits.
- Sewers carried sewage away from the private houses and public toilets.
- Public baths and toilets were for anyone to use.
- Water commissioners made sure that there was a good supply of water to towns and cities.
- However, there was no clear idea of how dirt caused disease.
- Army was given the best facilities, but even the poor had access to the Public Health system.



**SOURCE 2** Water supply and sewage system in ancient Rome. Not everyone had equal access to clean water. Even in homes which had a water supply it could not reach the upper floors. The pie chart shows how the water supply was shared out

## Sample Question



**Source A** – *A photograph of an aqueduct built by the Romans in Spain.*

- a) **What can you learn about Roman attitudes towards health from this photograph? Explain your answer. (4)**
- b) **Explain why the Romans built sewers. (4)**

## How much had changed? Prehistory to Rome

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	<b>Prehistory</b>	<b>Egypt</b>	<b>Greece</b>	<b>Rome</b>
<b>Medical Problems</b>	Pain, infection, disease and bleeding.	Pain, infection, disease and bleeding.	Pain, infection, disease and bleeding.	Pain and bleeding with infection and disease becoming a bigger problem.
<b>Who treated illnesses?</b>	Medicine men and family but mainly women.	Master physicians, doctors, priests, trained women physicians, women.	Trained doctors, priests at Asclepeia, women in families.	Trained doctors, priests at temples, women in families.
<b>What caused illnesses?</b>	Evil spirits and gods.	Gods, rotting food in the body blocked channels.	Gods, the four humours of the body becoming unbalanced.	Some people believed in gods, the four humours becoming unbalanced.
<b>How did they prevent/treat illnesses?</b>	Herbal remedies, charms, setting broken bones.	Herbal remedies, simple surgery, charms.	Herbs, simple operations, treatment by opposites, exercise.	Herbs, simple operations, treatment by opposites, exercise, public health schemes.
<b>Was life expectancy improving?</b>	Nearly all died under 40.	Some wealthy lived a little longer.	Some of the wealthy lived into their 60s.	A little better for the rich, but worse for the poor.

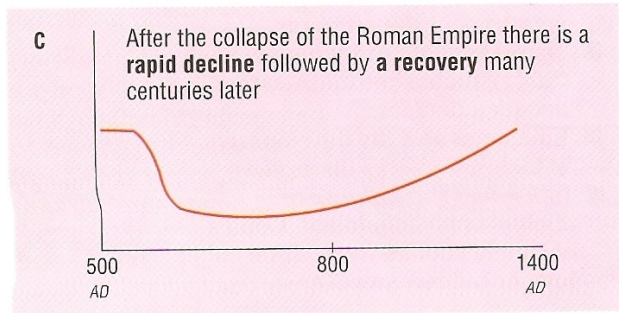


### **Sample Question**

**There were similarities and differences between Egyptian and Greek medicine.**

- a) Describe ways in which Egyptian and Greek medicine were similar. (5)**
- b) Explain why the Greeks were able to make important advances in medicine. (7)**
- c) How far did the Greeks rely on natural approaches to medicine? Explain your answer. (8)**

# Medicine in the Middle Ages, 400AD – 1350AD



The period we call the Middle Ages can be divided into 3 phrases which overlap:

- Collapse of the Roman Empire.
- Increasing power of the Church.
- Late Middle Age recovery.

## What happened to the Romans?

- The Roman army was being attacked from the North and the government began to lose control of its Empire.
- All soldiers were ordered to return to Rome to protect the city, so areas that the Romans had conquered, like Britain, were not a priority.
- England was attacked by the Saxons and Vikings, most could not read so did not want books like those written by Galen.
- There was a period of regression when people looked to traditional remedies again.

*Some of these herbal remedies would have worked. Garlic, onions and plantain are antibiotics and would have killed bacteria **BUT** doctors still believed in bleeding patients to restore the balance of the four humours.*

## Why did the Public Health system collapse?

- Viking chieftains wanted glory in war.
- Worried about food and supplies.
- Wanted victory in battle and to conquer as much land as possible.
- Disorganised, did not collect taxes as efficiently as the Romans did to keep aqueducts, sewers and baths in good order.
- Human waste thrown into the river, drinking water taken from the river and woods used as toilets.

## **Sample Question**

### **Source A**

'I suffered from dysentery and a high fever and began to be so ill that I was afraid that I would die. Everything that I ate was always vomited. I had severe pain that darted all through my stomach. When everything was being made ready for my death, I called the chief doctor and said to him, "You have used every trick of your profession, you have tried all of your remedies, but you are of no help to me. I have only one hope left. I will show you a great remedy; let them bring dust from the holy St. Martin's tomb and make a potion for me from it...." When I had drunk the potion, all pain fled and I recovered my health.'

*From the writings of St. Gregory of Tours, a monk in the 6<sup>th</sup> Century.*

### **Study Source A.**

**Do you find it surprising that St. Gregory should use a potion like this so soon after the fall of the Roman Empire? Use your knowledge of this period to help you explain your answer. (5)**

### What changes did the Christian Church make?

- Only strong centralised organisation that survive the collapse of the Roman Empire.
- Told people how to act and behave, concerned by challenges to the Bible.
- Few could read, access to books was controlled.
- Superstitious explanations for illness and diseases (unlike the Greeks). Illness the result of sin and sent by God.

### Why was progression so slow?

- By 1000AD, Europe began to recover from centuries of war and bad government.

	<b>What changed?</b>	<b>What remained the same?</b>
<b>Communications</b>	Merchants began to trade. They collected ideas about medicine from Muslims in Arabia. Some new ideas.	Some of the ideas they collected were from Galen.
<b>Governments</b>	New laws forced towns to clean up.	No-one to enforce the laws and no money to pay to improve things.
<b>War</b>	Doctors had lots of experience because they were taken to war and operated on the battlefield.	Money was spent on war instead of public health schemes.
<b>Attitudes and Religious Beliefs</b>	Christian Church trained doctors and built hospitals for the sick. Books like Galen's were copied and sent to other monasteries.	Universities did not teach doctors to look for new ideas, they just thought that Galen was right!

### Why did things begin to change by the late Middle Ages?

- Harvests and diet began to improve and so did life expectancy.
- Trade improved, there was more money and people travelled more freely.
- By 1300s: -
  - Churches set up universities to train doctors.
  - Surgeons able to train on the battlefield.
  - Rulers able to clean up the town.
  - Travel spread ideas around Europe, and Galen's ideas were rediscovered.

### How did public health improve?

- Butchers had to kill animals in a separate area.
- Gutters built to carry waste away.
- Fines for people throwing litter on the street, or water from windows.
- Open sewers carried refuse to the river.
- By 1380s, at least 13 common privies (toilets).
- Some houses had their own privies.
- Wells built away from where waste was deposited.

### Influence of the Arab World

- Islamic scholars improved the ideas of the Greeks whom they admired.
- Koran did not allow dissection and did not want to criticise Galen and other writers.
- Avicenna wrote a major medical text book used in the west covering all areas of medicine.
- More hospitals. 60 in Baghdad before London had its first in the 1100s.

- More modern ideas with separate departments in hospitals for patients with infectious diseases and a library and lecture halls for training students.

Did the Church help or hinder medicine?

- **Help** – churches recognised the importance of clean water and had toilet blocks and water purification systems, the Bible taught that the sick and injured should be cared for.
- **Hinder** – the church banned dissection until the 14<sup>th</sup> Century. Those who challenged theories like Galen’s could be accused of heresy. Belief that people could be healed by the touch of a saint.

How much had medicine and health changed?

*Treatment changed very little after the end of the Roman Empire. The collapse of the public health system was far more important! Treatment that you received depended on how much money you earned.*

<b>The Poor</b>	<b>The Rich</b>
<ul style="list-style-type: none"> <li>• Doctors and hospitals still rare, most people treated by healers or family members.</li> <li>• Still used herbal remedies, some remained after the end of the Roman Empire.</li> <li>• Despite the Black Death, life expectancy changed little.</li> </ul>	<ul style="list-style-type: none"> <li>• Treated by doctors who studied Galen and trained at universities.</li> <li>• Based on the theory of the Four Humours, surgery was very limited.</li> <li>• Life expectancy improved slightly.</li> </ul>

*There was little improvement because the cause of disease and its treatment was not properly understood. Links made between dirt and disease – streets were cleaned during times of disease but people still did not know the reason why this would help.*

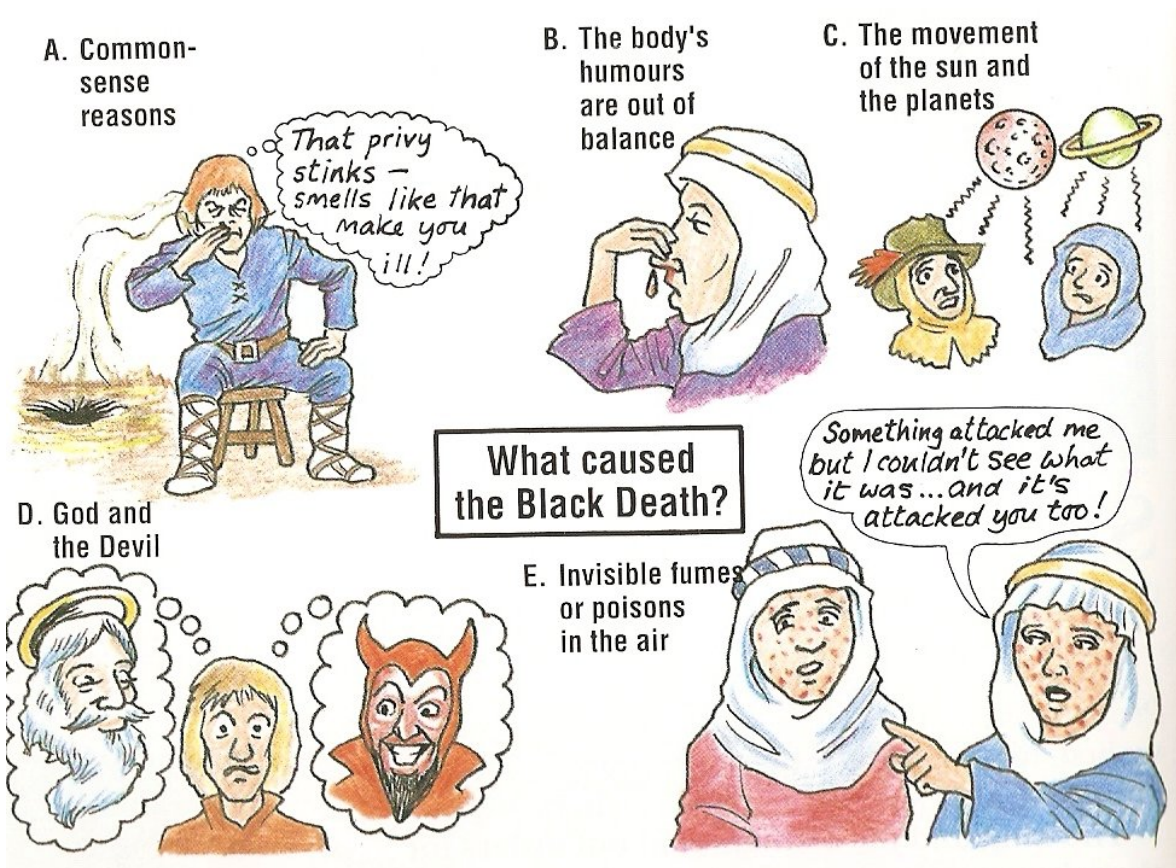
# Medicine in the Middle Ages

## The Black Death

Brought from the east via the spice route, through Europe and by boat to the southeast of England in 1348. Approximately 40% of population killed between 1348 and 1390.

<b>What was the Black Death?</b>	
<b>Bubonic Plague</b>	<b>Pneumonic Plague</b>
<ul style="list-style-type: none"> <li>• Spread by the black rat and transmitted by the fleas that lived on it.</li> <li>• Symptoms included buboes (painful swellings of lymph nodes), black spots on the body, high temp and vomiting.</li> <li>• Infection enters the blood and moves to the lungs, becoming a secondary pneumonic plague.</li> <li>• If the buboes burst, patient may live.</li> </ul>	<ul style="list-style-type: none"> <li>• Spread when a patient with plague coughed and another breathed in the bacteria.</li> <li>• Always resulted in death.</li> </ul>

What did people think caused the disease?



- John of Burgundy still argued that following Galen's theory of opposites would keep people protected from the plague. This shows the impact of Galen 1,000 years later.
- The flagellants were a religious group who believed that the Black Death was a punishment sent from God. They whipped and abused themselves as punishment in the hope that God would not send them the Black Death.

### Sample Question 1



**Source A** – *Drawing of a group of flagellants at the time of the Black Death. They travelled the country whipping themselves.*

### Source B

'In cold weather you should light fires in your room, and in foggy weather you should inhale perfumes every morning before leaving home.

If the plague occurs during hot weather you must eat cold things and also drink more than you eat. Do not eat food such as peppers, garlic, onions or anything else that generates excessive heat. Eat instead, cucumbers and spinach.'

*From a book written in the 14<sup>th</sup> Century.*

### Study Source A and B.

**In what ways do these two sources contain different ideas about the cause of the Black Death? Explain your answer. (5)**

### Sample Question 2



**Source C** – *A 14<sup>th</sup> Century drawing about the Black Death. The drawing was called 'The Dance of Death'.*

### Study Source C.

**Why has the 14<sup>th</sup> Century artist shown the Black Death in this way? Explain your answer. (4)**

### Sample Question 3

#### Source D

'You should avoid eating too much eating and drinking and also avoid baths, which open the pores on the skin. The pores are the doorways through which poisonous air can enter the body.

When you go to bed shut the windows and burn juniper branches so that the smoke and scent fills the room. If the plague occurs during the hot weather, eat cold things. You should eat cucumbers and spinach and avoid garlic and pepper, which generate excessive heat.

If you feel your blood fluttering, let blood from the nearest vein on the same side of the body.'

*Advice on how to avoid catching the Black Death, written by John of Burgundy in 1365.*

**Were John of Burgundy's ideas about the causes of disease new? Explain your answer. (5)**

# Medicine in the Middle Ages

## Doctors and Hospitals

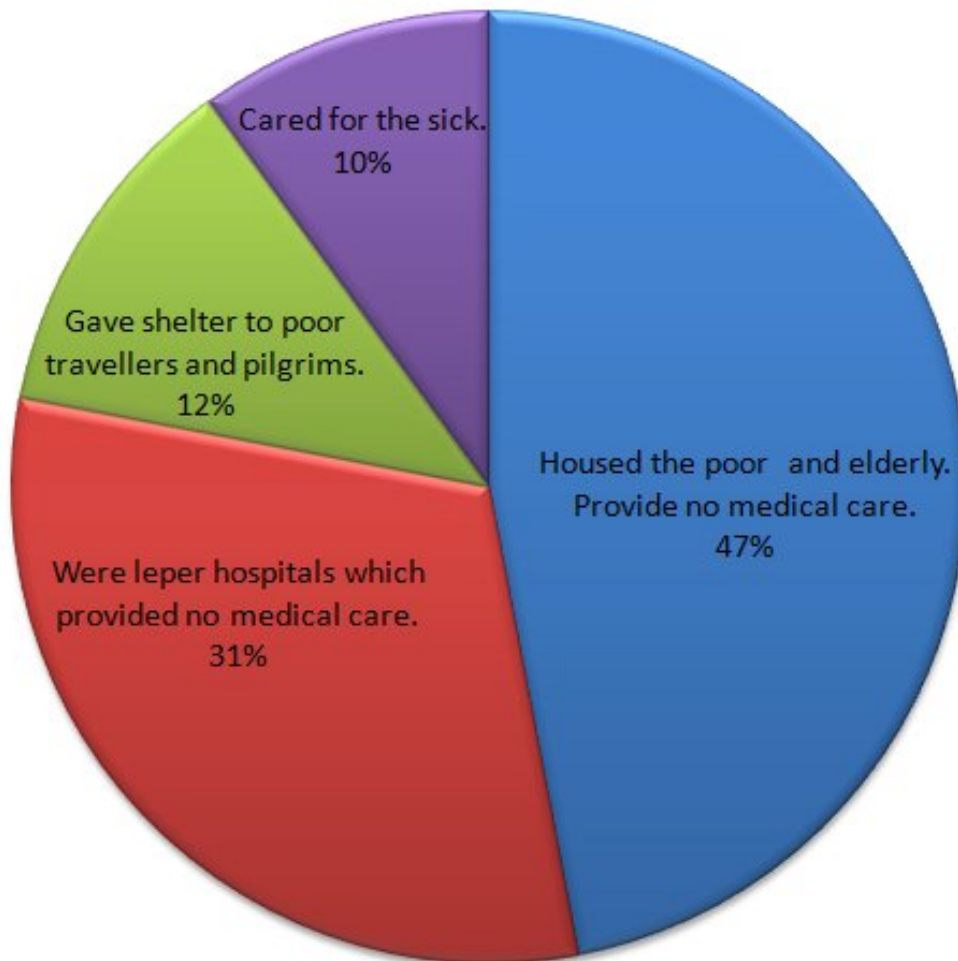
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### How were doctors trained?

- Books written by Galen were rediscovered and translated.
- First medical school opened in 900AD and by late Middle Ages all doctors had to train at one of them.
- Trained to use the theory of the four humours but may also use astrology (position of the moon important).
- Bleeding still common, sometime until the verge of unconsciousness.
- Women could become doctors and surgeons.
- Surgeons usually trained by being apprenticed and had to take exams. Some became specialists.
- Most illnesses still treated with herbal remedies from Greek and Roman times.

### Medieval Hospitals

- Approx 120 hospitals founded by 1300, with between 5 and 180 beds. Some specialised in maternity, some for the blind and mute.
- Less sophisticated than those in Sri Lanka and India.
- Did not take patients with infectious diseases because they would spread to other patients.
- Patients cared for by nuns and helpers.
- Only 10% cared for the sick.





# Medicine in the Renaissance

## Andreas Vesalius

Born in Brussels 1514, he studied medicine in Paris and Italy. He met artists who were able to make detailed sketches of the body, and wrote the *Fabric of the Human Body* (1543).

Why was he important?

- His impact in the short-term was limited, but in the long-term was massive.
- Proved that Galen was wrong. For over 1,000 years nobody had challenged Galen's ideas. Vesalius allowed research to be carried out in areas that had been closed off because everyone thought that Galen was right.
- Challenged Galen's ideas, encouraged doctors to dissect human corpses not animals.
- Identified areas where Galen was incorrect, i.e. the flow of blood through the heart.
- Met artists who were able to produce detailed diagrams of the human body and collated them into a book for students to use.

### Sample Questions



Study the Source.

Why do you think that Vesalius chose this drawing to go at the beginning of his book *The Fabric of the Human Body*? (4)

Consider the work of Andreas Vesalius:

- a) Describe the advances that he made in medicine. (5)
- b) Explain why these advances were opposed by some people. (7)
- c) Do you agree that his work was a turning point in the history of medicine? Explain your answer. (8)

# Medicine in the Renaissance

## Ambroise Paré

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Born in France in 1510, he was apprenticed to his brother, a barber surgeon. He became a surgeon at the Hotel Dieu and in 1536 became an army surgeon treating sword and gunshot wounds. He wrote *Works on Surgery* (1575).

Why was he important?

- Discovered that using bandages was better than cauterising (using hot irons to stop the bleeding).
- Used ligatures (silk threads) to tie blood vessels and stop bleeding (like stitches). Ligatures also cause infections and could kill.
- Used oil of roses, egg yolk and turpentine (used since Roman times) instead of boiling oil to kill germs.
- Paré was not afraid of using new ideas.
- Discovered by **chance**. He ran out of boiling oil and had to use something else instead. Without this stroke of luck, he would never have used the ointment and improve patient care. **But** it was skill to have chosen to use ointment instead.

These new ideas were important **BUT** because germs had not been discovered patients still died of infection. In the short-term had a limited impact, but in the long-term a much bigger impact. Ligatures would work much better if there had been an antiseptic. Not invented for another 300 years, they then have a big impact.

### Sample Question

Consider the work of Ambrose Paré and the use of ointments (soothing lotions):

- a) Describe how the discovery was made. (5)
- b) Explain whether chance was the most important reason why the discovery was made when it was. (7)
- c) Do you think that the individual's importance in the history of medicine is reduced because chance played a part in his work? Explain your answer. (8)

# Medicine in the Renaissance

## William Harvey

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Born in 1578 in Kent, he studied at Cambridge and Padua. He worked as a doctor and lecturer, and published *An Anatomical Account of the Motion of the Heart and Blood in Animals* (1628).

Why was he important?

- Dissected live cold-blooded animals to watch blood circulation and human bodies to study anatomy.
- Proved that blood was not used up but was pumped by the heart around the body.
- Blood was carried away from the heart by arteries and back to the heart by veins.
- Blood is not used up, so the liver does not produce new blood.
- Discovered circulatory system is one-way by trying to push liquid up veins.
- Calculated how much blood in the body.

Many had challenged Galen's ideas on blood circulation but it was Harvey who proved that they were wrong. But Harvey could not totally prove his ideas. Capillaries could not be seen by the naked eye, it was not until the 1600s that the microscope was invented. In the short-term his ideas were not used by many as Galen still controlled the thoughts of many. But in the long-term very important because he proved Galen wrong and this made it possible for others to continue his research on blood circulation which made the breakthrough later on.

### Sample Question

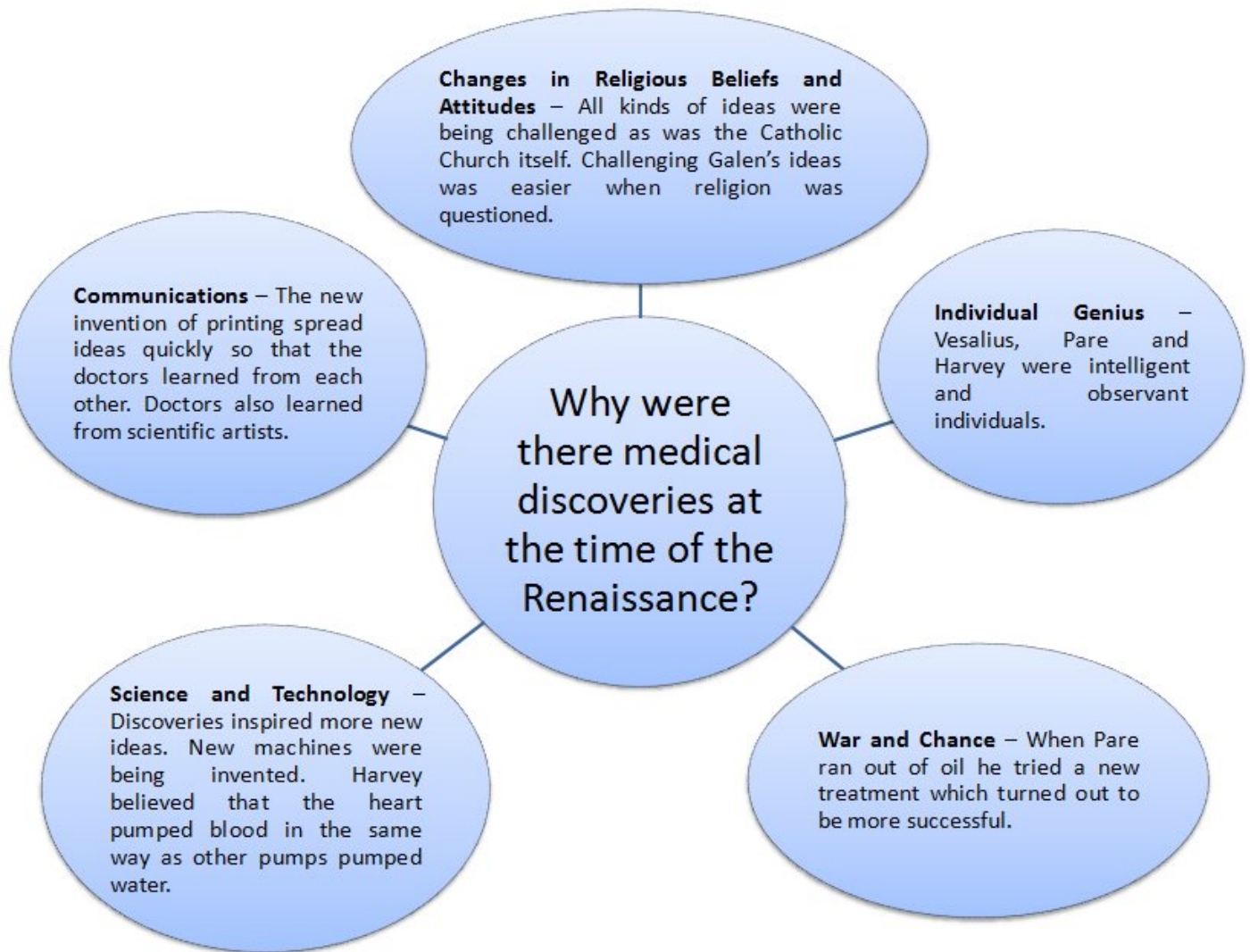
Consider Harvey and the circulation of the blood.

- a) Describe how the discovery was made. (5)
- b) Explain why the discovery did not lead immediately to a widespread improvement in the treatment of patients. (7)
- c) Explain why the discovery did eventually lead to improvements in the way patients were treated. (8)

# Medicine in the Renaissance

## Overview

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### How much had medicine changed?

- Herbal remedies still commonly used, but books now recorded these recipes.
- Women were still primary care givers to the poor.
- People still afraid to try new ideas like ligatures.
- Religious beliefs still strong, i.e. 'The Kings Evil' – people cured when the King touched them.
- Cause of illness still unknown – recurrence of the Great Plague in 1665.

### Summary

- Many of these new ideas had little effect upon the life of ordinary people.
- Life expectancy did not increase and they failed to solve the problems of pain, infection and the cause of disease.
- The treatment received by the rich and the poor were still different.
- The discovery of America in 1492 by Europeans probably had the most impact, new remedies brought back over the next 20 years.

## Sample Questions

**Paré, Vesalius and Harvey all contributed to the Medical Renaissance.**

- a) Describe the main developments in the Medical Renaissance. (5)
- b) Explain why the Medical Renaissance took place when it did. (7)
- c) What was most important development in the Medical Renaissance?  
Explain your answer. (8)

**Both Paré and Harvey made an important contribution to medicine during the Renaissance.**

- a) Briefly describe the work of either Paré or Harvey. (5)
- b) Who had the more immediate impact on medical practices – Harvey or Paré?  
Explain your answer. (7)
- c) 'Harvey's work had greater significance in the long-term than Paré's.' Explain  
whether or not you agree with this statement. (8)

Conclusion – What or who had the biggest impact on Renaissance medicine?

### Paré

- **Short-Term** – Big impact on treating gunshot wounds, ointment led to less pain and death than boiling oil.
- **Long-Term** – Impact came later, ligatures were good but until the invention of antiseptics 300 years later could still lead to death by infection from the ligature.

### Harvey and Vesalius

- **Short-Term** – Limited impact. Few used their ideas and life expectancy of people stayed about the same in this period.
- **Long-Term** – Changes came later. Ideas made a massive impact in proving Galen wrong. Proved careful dissection and experiments were the key to medical research. Taken on by a new generation as their inspiration for later medical discovery. They developed the necessary methodology that allowed future medical researchers to make discoveries that changed medicine for the better.

### Herbal Remedies

- Had the biggest impact in the short term. i.e. Paré used herbs in his gunshot ointment. New herbs discovered in the Americas improved medical care. Also herbs grown at home were widely used and more successful than other treatments.

# Medicine, 1750 – 1900

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**Scientists and doctors made discoveries regarding the cause of illness, they discovered ways to prevent killer diseases and some improvement in public health.**

## What caused illness?

- Link made between dirt and disease, but unable to prove this.
- Poisonous fumes given off from rotting rubbish.

## Doctors and Medicines

- From 1750s, ordinary people could use doctors. They charged standard fees but many were employed by the parish to care for the poor.
- Dispensaries provided the poor with cheap medicines.
- However, many people were still treated at home with remedies handed down from mother to daughter.
- By 1800 people were taking patent medicines (not under government control) which were cheaper than prescriptions.
- By 1880, the government regulated drugs and the first aspirin produced.
- The status of women in medicine was reduced, women could not train to become doctors or get a license.

## Microscopes – Joseph Lister

- In the late 1600s, Anthony van Leeuwenhoek developed the first microscope but image fuzzy.
- By 1830, Lister developed microscope that magnified 1000 times clearly. Vital breakthrough as it allowed much clearer study of multi-organisms. Up until Lister, researchers were held back by what they could not see. Lister gave them this sight to answer questions that they could not answer before.

# Medicine, 1750 – 1900

## Edward Jenner and the Smallpox Vaccination

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**Epidemics of smallpox broke out every few years in Britain. If someone had the disease their house and belongings were disinfected and they could lose their jobs.**

### Inoculation

- Chinese Doctors noticed that those that had a mild dose of smallpox often survived later epidemics.
- Lady Montague survived smallpox and wanted her children to be protected.
- By spreading matter from a smallpox scab onto an open wound the person was infected, but the person often survived a later attack.

### Vaccination

- Edward Jenner worked as a doctor in Gloucestershire and offered inoculation to patients.
- Puzzled that local farmers refused inoculation against smallpox.
- He noticed that milkmaids who had cowpox did not catch smallpox.
- Farmers said catching cowpox somehow stopped them catching smallpox later.
- He wanted to test this theory.
- He experimented on a young boy by infecting him with cowpox and then with smallpox, and the boy did not develop the disease.
- He experimented on 23 other people and wrote up his findings.
- His work was submitted in 1798, but many opposed his work.

**Chance played a part because Jenner only got his ideas from farmers. But used careful experimentation and research to prove and record his ideas (following skills taught by Vesalius). Very important because without Jenner, the chance of finding a cure would never have been turned into the development of a vaccination. The role of government was also very important because they paid for Jenner's work, it would not have been possible without this money.**

**By 1803, doctors in America used vaccination but it took until 1853 before the government made vaccination law. Jenner's vaccine worked but without a microscope he could not prove why.**

### How important was Jenner?

- **Short-Term** – His vaccine saved many lives but there were still people who did not agree or were frightened of what it might do.
- **Long-Term** – Made deliberate use of the knowledge that recovery from a mild form of a disease gave people protection against a more severe form (immunity). This was the basis of a new science known as **IMMUNOLOGY**, which Pasteur built upon with great success.

### **Sample Question**

**Consider Edward Jenner and the Smallpox vaccination.**

- Describe how the discovery was made. (5)**
- Explain whether chance was the most important reason why the discovery was made when it was. (7)**
- Do you think that the individual's importance in the history of medicine is reduced because chance played a part in his work? Explain your answer. (8)**

# Medicine, 1750 – 1900

## Louis Pasteur

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### Germ Theory

- Pasteur worked for a brewing company in 1850s and found that wine left uncovered went bad quicker than wine that was corked because there were germs in the air.
- He discovered that the wine that was covered had fewer micro-organisms.
- He developed the theory that micro-organisms caused illness.
- He found that when liquids were boiled these were killed and the wine did not spoil.
- He speculated that the same applied to humans and animals.
- In 1879, Pasteur was researching chicken cholera but needed to make a weaker form.
- Pasteur had studied Jenner's work.
- When some cholera solution was left outside over the holidays by accident it was injected into a chicken.
- The air had weakened the bacteria and the chicken was immunised against chicken cholera.
- Pasteur developed his vaccines and in 1881 successfully vaccinated against anthrax, which was mostly found in sheep and cows, but could also kill humans.

### Sample Question

Consider the work of Louis Pasteur.

- a) Describe the developments he made in medicine. (5)
- b) Explain why Pasteur was able to make these developments at that time. (7)
- c) Explain the importance of these events in the history of medicine. (8)

Consider the work of Louis Pasteur.

- a) Describe the advances he made in medicine. (5)
- b) Explain why some people opposed these advances. (7)
- c) Do you agree that this work was a turning point in the history of medicine? Explain your answer. (8)

Pasteur was a scientist, not a doctor. He tested his ideas on beer, wine and silkworm. It was Koch who took this further and used the research to help humans.



# Medicine, 1750 – 1900

## Robert Koch

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### The Cause of Disease

**Koch is important because he applied the ideas of Pasteur to medicine. After pain-staking experiments he proved specific multi-organisms caused specific diseases.**

- Koch bought a microscope and studied anthrax between 1875-78. He isolated the bacteria that caused anthrax in a mouse, grew it and injected it into a healthy mouse, which later developed the disease.
- His methods were used to identify the bacteria that caused typhoid, TB, cholera and tetanus.

**Koch saved lives and inspired others to research, specifically with Pasteur through national pride and competition (national rivalry between France and Germany).**

# Medicine, 1750 – 1900

## Jenner to Koch Overview

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Money from the government for research. Without this Jenner would not have been able to develop his ideas.

**Jenner** – his work established the idea of using immunity to prevent disease.

**CHANCE** – Jenner stumbled upon the farmers ideas because he was a doctor in the countryside.

Development of the microscope allowed Pasteur to make discoveries he would not have been able to make.

**Pasteur** – followed the methodology that Jenner had introduced, developing more vaccines.

**CHANCE** – While work stopped in the summer, cholera solution left out in the open by accident enabling discovery to be made.

**Koch** – used Pasteur's work but applied to the treatment of people rather than animals.

The work of Koch inspired others such as Behring and Ehrlich to continue researching in this area and they developed 'Magic Bullets'.

**The development of germ theory was vital and led to the causes of disease being identified very quickly. Once the link between germs and diseases was discovered massive progress was quickly made.**

**In a 20 year period between 1880 and 1898, typhus, cholera, tuberculosis, pneumonia, meningitis, plague and dysentery were cured.**

# Medicine, 1750 – 1900

## How did surgery improve?

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Operations were limited to amputation (cutting off a limb), trephining and cutting off tumours outside the body.

What were the dangers/problems of surgery?

- **Pain** – no way of stopping the pain when the patient was cut open. This meant operations had to be done quickly. No complicated operations could take place.
- **Loss of Blood** – blood is lost during operations and they had no way of replacing it. This was the biggest cause of death from operations.
- **Infections** – patients caught infections when they were opened up.
- **After Operation Care** – patients were returned to dirty and overcrowded wards.

What solutions were developed?

Solution 1 – Anaesthetics

- **1799** – Sir Humphry Davy discovered laughing gas reduced the pain that a patient felt.
- **1800** – ether was used by Liston but made the patient cough during the operation and was very flammable (dangerous when theatres lit by lamps).
- **1847** – Simpson experimented with chloroform and discovered it relieved pain. However, no one knew what the long-term effects were or how much to give patients so should not be used. The first death scared people off.
- Overall, it did not make operations safer! Instead it meant doctors could perform longer more complex surgeries but meant patients were more likely to get infections.
- Using anaesthetics during childbirth only became accepted after Queen Victoria used it during labour.
- Gradually it became more accepted but only had a massive impact once the problem of infection was tackled.

### Sample Question

Consider the work of Simpson with Chloroform.

- Describe how the discovery was made. (5)**
- Explain why the discovery did not lead immediately to a widespread improvement in the treatment of patients. (7)**
- Explain why the discovery did eventually lead to improvements in the way patients were treated. (8)**

Solution 2 – Infection

- Surgeons did not wash their hands, instruments or equipment and bandages were often used more than once so infection was spread.
- **1847** – A Hungarian doctor named Semmelweiss noticed that women whose babies were delivered by midwives were less likely to die than those delivered by doctors. Semmelweiss told doctors they must wash their hands before entering the maternity wards but his ideas were not taken seriously.
- **1867** – Joseph Lister had seen carbolic acid used to treat sewage and after the experiments discovered that a mist of carbolic acid sprayed over a wound during an operation reduced the chance of infection.
- **1877** – Lister moved to London and began to train doctors.
- **1878** – Koch discovered the bacteria that caused septicaemia, which made Lister's ideas more believable.

- People had rejected Lister's ideas because the acid was corrosive and left clothes bleached as well as theatre floors wet and slippery, and skin irritated.
- However, other discoveries made by the 1890s allowed for Lister's ideas to change surgery; hospitals and theatres were regularly cleaned. In 1887, all instruments were steam cleaned and by 1894 sterilised rubber gloves were worn.

### Solution 3 – After Operation Care

- Florence Nightingale provided clean wards in which the patient could rest and recover after operations as well as providing training for nurses to improve the quality of medical care on offer.

### What problems still remained?

- Some people were opposed to change. Not everyone knew about germ theory and understood how Lister's ideas worked.
- Religious groups argued that pain was a part of a natural childbirth and was sent by God. Only when Queen Victoria used chloroform during childbirth did it become more acceptable.
- The death rate actually went up for a period of time because surgeons tried longer and more difficult operations that did not always work.
- They still did not know about blood groups so blood transfusions were still unsuccessful.

# Medicine, 1750 – 1900

## Snow, Cholera and Public Health

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People had begun to make the link between dirt and disease, but it was difficult to prove what it was.

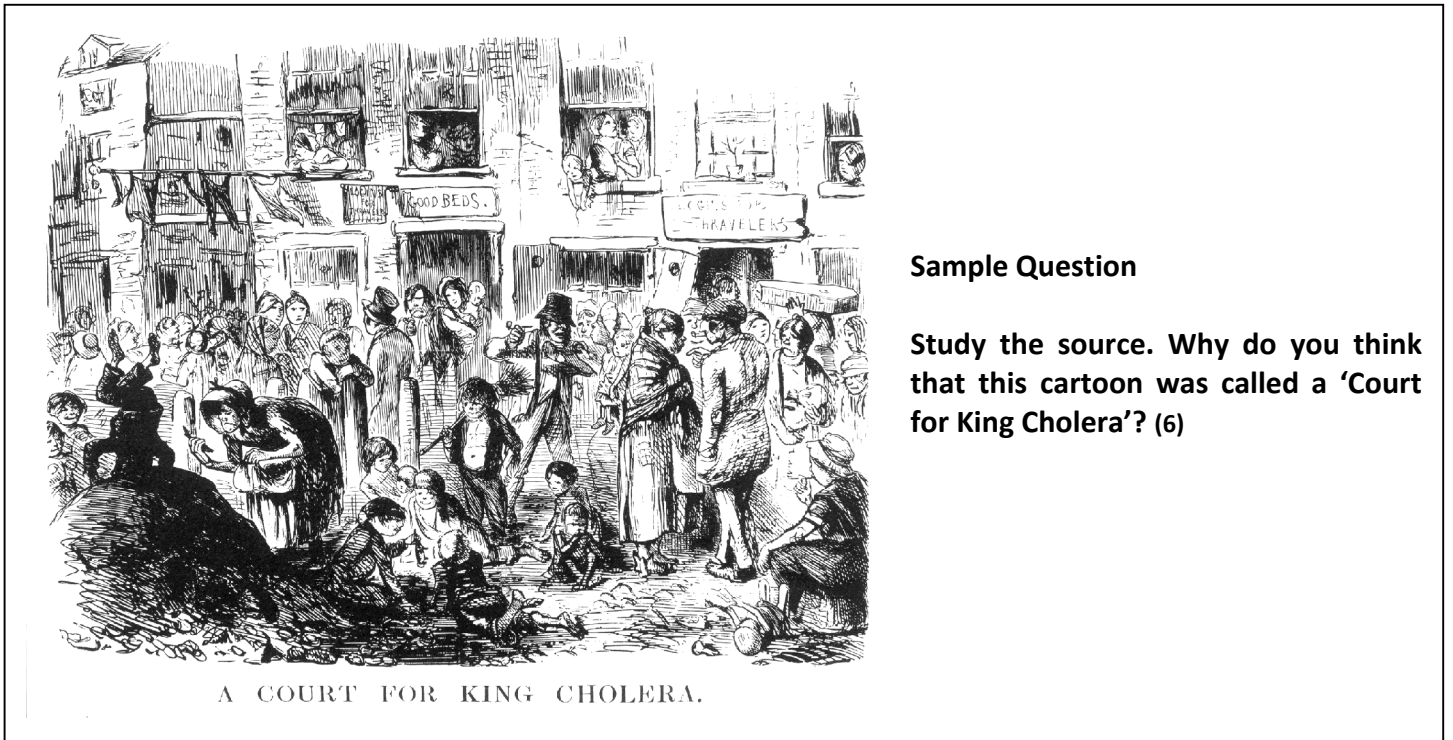
### Why were the towns so dirty?

- The population grew very rapidly at the beginning of the 19<sup>th</sup> century, which meant that towns could not provide enough housing.
- There was also no way of getting clean water or building sewerage systems to take waste away.
- People were split. Should the government make people clean up? Or should each area clean itself? This debate continued until cholera reached Britain for the first time in the 1830s. The symptoms were sickness and diarrhoea, with people dying quickly if they could not put back the fluids that they had lost.

### What caused cholera? (John Snow)

There were many ideas about what caused cholera, they included: -

- Sent as a punishment from God.
- Bad air that carried disease.
- Poor housing.



### Sample Question

Study the source. Why do you think that this cartoon was called a 'Court for King Cholera'? (6)

### The Work of John Snow

- Many studied the epidemic of 1832 and found a link between cholera and the water supply but no idea about germs.
- Snow worked as a doctor in London and researched a small area of the city using interviews, observations and research.
- He found that cholera was limited to people getting water from a particular pump, when he removed this there were no more deaths.
- It was later found that a cesspool lining had broken and sewage had got into the water.

## Public Health Act 1848

- Edwin Chadwick was employed by the Poor Law Commission to find out how to make looking after the poor cheaper.
- Chadwick found that most poverty was caused by ill health and that the government should try to make people healthier.
- The government did nothing until another epidemic of cholera in 1848.
- The Public Health Act meant that local areas could borrow money to improve facilities and many did.
- But it was not compulsory. Many local authorities made no changes. By 1872, only 50 councils had appointed Medical Health Officers.

## Why was the Public Health Act 1875 more successful?

- Studies like those of William Farr proved that there was a link between unhealthy living conditions and illness.
- In 1865, cholera came back but Pasteur's germ theory explained why.
- In 1867, working class men got the vote and they were more likely to be ill than the wealthy. As the government had to win votes, this meant that laws were passed to improve the living conditions of working class men.
- Cities like Leeds made big changes and were backed by pressure groups and newspapers. Others saw how they did it and wanted to make changes themselves.
- Most importantly, Public Health was not just sewers and water!

## Other Factors Leading to Success of Public Health

**1802 onwards**  
Factory Acts improved people's working conditions

**Measures taken by Government and Local Councils**

**1852**  
Compulsory vaccination

**1858**  
Regulation of doctors qualifications

**1870**  
Improved education: 1870 onwards  
From 1870 every local authority had to set up schools. Health education was taught at many schools. Improved literacy made it possible for people to read pamphlets from Medical Officers giving advice about drainage, ventilation, diet, personal cleanliness, care of children and care of the sick.

**1876**  
Building regulations

**1876**  
Laws against pollution of rivers

**1876**  
Food regulations improve the quality of food sold in shops

**1889**  
Isolation hospitals for infectious diseases

**SOURCE 22** Public health measures



### Sample Question

Study the source. Why were sewers built in many British cities and towns in the second half of the nineteenth century and not before? (6)

### Sample Question

Public Health provision in Britain was greatly improved in the second half of the nineteenth century.

- Briefly describe the state of public health in the early years of the nineteenth century. (5)
- Why were there great improvements to the public health provision in the second half of the nineteenth century? (7)
- Did the improvements to public health provision in the second half of the nineteenth century mean that there was little more to be done to improve public health in the twentieth century? Explain your answer. (8)

### Hospital Improvements – The Work of Florence Nightingale

**Women were important in nursing; however, it was not considered a respectable profession for women. Hospitals were dirty and overcrowded but women like Mary Seacole and Florence Nightingale reduced the mortality rate in hospitals and improved conditions.**

- In 1854, Florence Nightingale was sent to the Crimea to treat sick soldiers.
- She knew that dirt caused disease so she removed the rats. Boiled sheets and gave patients a good diet as well as rebuilding wards and making sure every patient had their own beds.
- In 1854, 50% of soldiers died but after Nightingale had been in charge for six months this was reduced to just 2%.
- In 1860, Nightingale published *Notes for Nursing*, which became a best seller.
- Nightingale set up training schools for nurses and helped the government design new hospitals.
- In many ways her ideas built on the work of people like Chadwick, enabling her ideas to become accepted much more quickly.
- However, there was opposition to her work; her parents were wealthy and did not expect their daughter to work as a nurse as well as the fact the soldiers and the army disliked listening to a woman on how to run things.

### Factors Which Led to the Success of Florence Nightingale

- **Religion** – She believed that God wanted her to be a nurse.
- **Government** – A member of the government arranged for her to travel to Crimea. She gave an 800-page report to the government telling them what needed changing and they acted on this.
- **Communication** – Newspapers back in Britain called her the ‘Lady with the Lamp’ and published her story, giving her work more support.
- **Training** – She had been to Germany to learn about the ideas of nursing. She wrote a book called *Notes for Nursing* that helped other nurses to learn from her.
- **Chance/Luck** – She travelled to the Crimea in disguise. If she had not been able to reach the war zone she would never have gained fame, which enabled her to introduce her new ideas on nursing.



# Medicine in the 20<sup>th</sup> Century

## World War 1

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**Although many problems had been solved, there was much to do. The average age of death was below 50 and 20% of babies died before they were one. Poverty was still a huge problem.**

How did World War 1 improve medicine and health?

- Soldiers were promised good housing when they returned home, which made slum-clearances happen much more quickly.
- Although surgeons now had antiseptics to kill germs and anaesthetics to stop pain, they still faced the problems of blood loss and internal infection.
- Surgeons found new ways to treat broken bones, graft skin (basis for plastic surgery) and successfully tried brain surgery.

Improvement 1 - X-Rays

- X-rays were invented before the war, but they were used to find bullets and shrapnel inside the body.
- They improved the success of surgery by allowing surgeons to see shrapnel and bullets deep inside the body.

Improvement 2 – Blood Transfusions

- Blood transfusions were used for the first time.
- In 1901, scientists discovered that there were different blood groups. They also realised that transfusions would only work if the donor and the recipient had the same blood group.
- The problem of storing blood was overcome by separating the plasma and cells. The cells were bottled and frozen, then diluted in warm saline to make usable blood.

Improvement 3 – Infection

- Aseptic (no germ) surgery was already done in hospitals, but on the frontlines this was difficult. Soldiers' wounds were often infected by pieces of fabrics and germs could cause gas gangrene in the wounds.
- By trial and error, surgeons cut away infected tissue and covered the wound with saline solution. However, there was only a small improvement.

# Medicine in the 20<sup>th</sup> Century

## Magic Bullets and Penicillin

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Scientists had successfully found which bacteria were responsible for several illnesses. They now hoped that they would also be able to prevent illness, rather than have to cure it!

### Salvarsan 606 (Paul Ehrlich)

- Ehrlich worked with Koch, where his job was to stain bacteria to see what happened. He observed the bacteria that caused diphtheria and noticed that the body produced antibodies that killed off this bacteria but nothing else.
- Ehrlich thought that he could make a chemical that would do the same.
- In 1905, he wanted to find a cure for syphilis and was using a mixture of chemicals including arsenic. He tried 605 different combinations and finally number 606 worked but it was very dangerous.
- His discovery was important because he showed that a chemical could be used to kill bacteria.

### Prontosil (Gerhardt Domagk)

- In 1932, Domagk experimented with Prontosil – a red dye which he thought would treat blood poisoning.
- His daughter developed blood poisoning and he tried out Prontosil for the first time. He gave her a large dose and she was cured.
- This was the second magic bullet but it was what was in Prontosil that killed bacteria. After the invention of the electron microscope it was found to be sulphonamide (from coal tar) and drug companies found cures for scarlet fever, meningitis, gonorrhoea and pneumonia within a few years.

### Penicillin

- First found in the early 19<sup>th</sup> Century by John Sanderson who noted that not very much grew near it. Lister later used it but it was difficult to grow enough and to apply it to the patient.
- When experimenting with staphylococci some penicillin got into the dish by accident. Fleming noted that it was killing the bacteria in the dish and wrote about it in 1929.
- Florey and Chain asked for government money in 1939 to research uses for penicillin. They tested 8 mice with diseases and the 4 that were given penicillin lived whilst the other 4 died.
- However, it was difficult to produce enough to test on humans.
- Florey asked the American government to find a way to produce penicillin because Germany was bombing Britain. Production began in 1943 and by 1944 there was enough to treat the casualties for D-Day.
- Penicillin was made available for civilian use and called antibiotics.

### What factors led to the success of magic bullets and penicillin?

- **War** – Sped up the process because it needed to treat soldiers and brought greater government funding.
- **Chance** – Took advantage of findings to make breakthrough. Florey and Chain were the first to properly recognise how penicillin could benefit and had the skill to test, research and report their findings as well as take the ideas of Fleming to a more positive conclusion.

### **Sample Question**

**There were several reasons why the importance of penicillin was identified and discovered in the twentieth century. Study the following list of factors:**

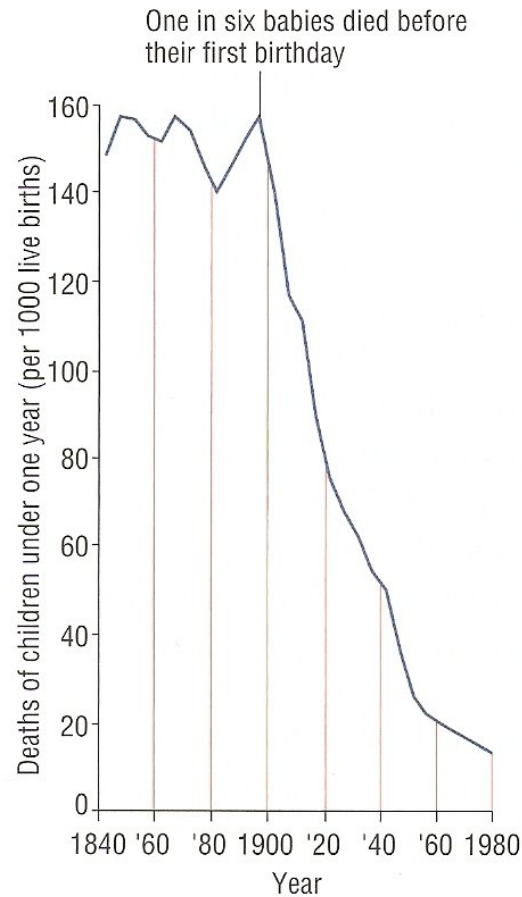
- + The work of Alexander Fleming**
- + The work of Howard Florey and Ernst Chain**
- + Chance**

- a) Describe how Fleming discovered penicillin. (5)**
- b) Explain whether or not the factors in the list were equally important in discovering the importance of penicillin. (7)**
- c) Do you agree that no more work needed to be done to develop penicillin after Florey and Chain had shown its importance? Explain your answer. (8)**

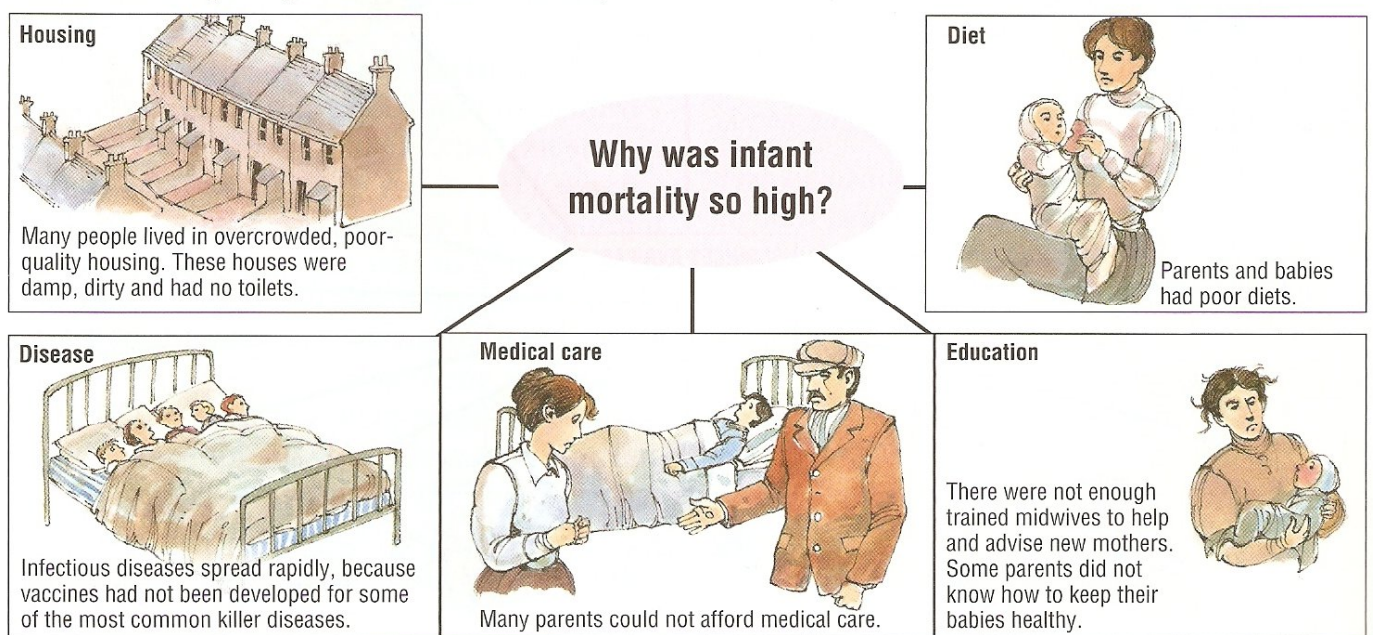
# Medicine in the 20<sup>th</sup> Century

## Infant Mortality and the National Health Service

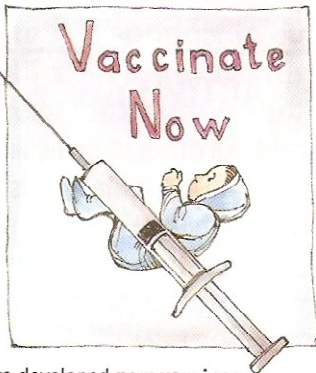
▼ **SOURCE 1** Infant mortality, 1840–1980



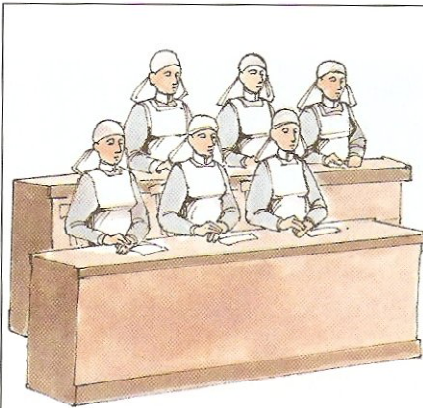
### Problems leading to high levels of infant mortality



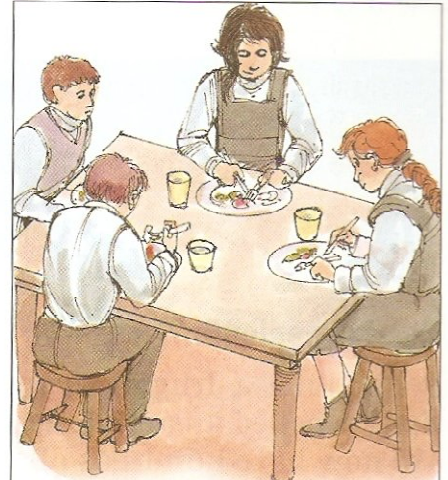
## Solutions to the problems leading to high infant mortality



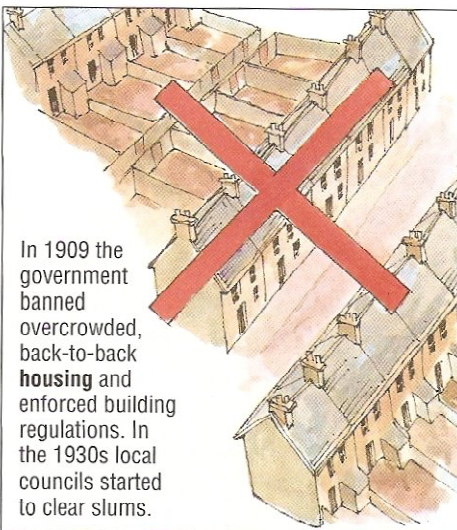
Scientists developed **new vaccines**. Governments ran national campaigns to make sure that all children were vaccinated. For example, compulsory vaccination against diphtheria in 1940 reduced deaths from 300 per million to less than 10 per million.



In 1902 the government said that all **midwives** had to be trained.



In 1906 the government started to provide **school meals**, so that children of poor families could get some good food.

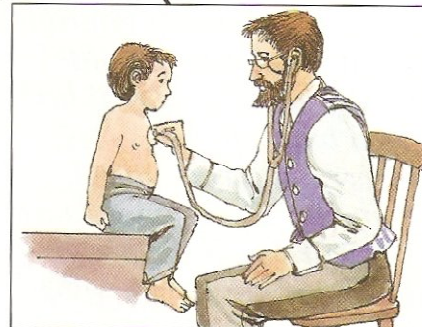


In 1909 the government banned overcrowded, back-to-back **housing** and enforced building regulations. In the 1930s local councils started to clear slums.

### Why has infant mortality fallen?



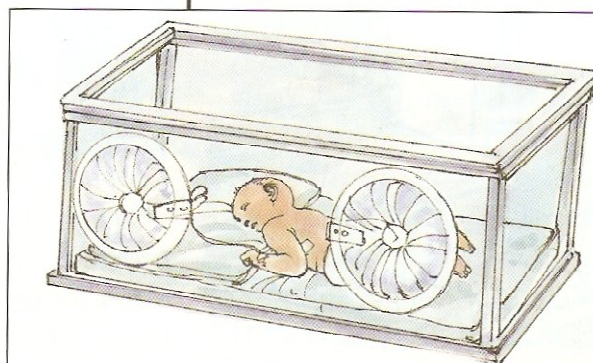
In 1919 local councils started **clinics** for mothers to be. They appointed **health visitors** to visit families and advise on health and hygiene.



In 1944 the development of penicillin began the story of **antibiotics**. Since then antibiotics have protected babies and young children against infections that might have killed them in 1900.



In 1948 the **National Health Service** was set up. It provided free medical treatment and medicines for everyone.



Since the 1970s **technology** has advanced greatly: babies can now be scanned before they are born to check that they are healthy and premature babies can be kept alive when they would have died in 1900.

## Impact of World War 2 on Medicine and Health

- Rationing improved some people's diet.
- Evacuation took 1.5 million children (often living in poverty) out of the cities and into rural areas.
- The government put up posters advising people on healthy eating and vaccination as well as health and hygiene.
- Antibiotics, improved transfusions and surgery.
- The birth of the National Health Service or NHS.

### **Sample Question**

**There were important advances in surgery in the nineteenth and twentieth centuries.**

- a) Describe the problems which faced surgeons in the early nineteenth. (3)**
- b) Explain how far these problems were overcome by the end of the nineteenth century. (7)**
- c) Do you agree that war has been the most important cause of progress in surgery in the twentieth century? Explain your answer. (8)**

## Improvements in Public Health

- Back-to-back housing was banned and new houses were built with better ventilation and an internal water supply.
- Housing Act 1919 meant that local authorities built new housing for returning soldiers. To do this thousands of poorly built houses were cleared away.
- There was less air pollution as the government controlled what fuels people could burn in their homes.

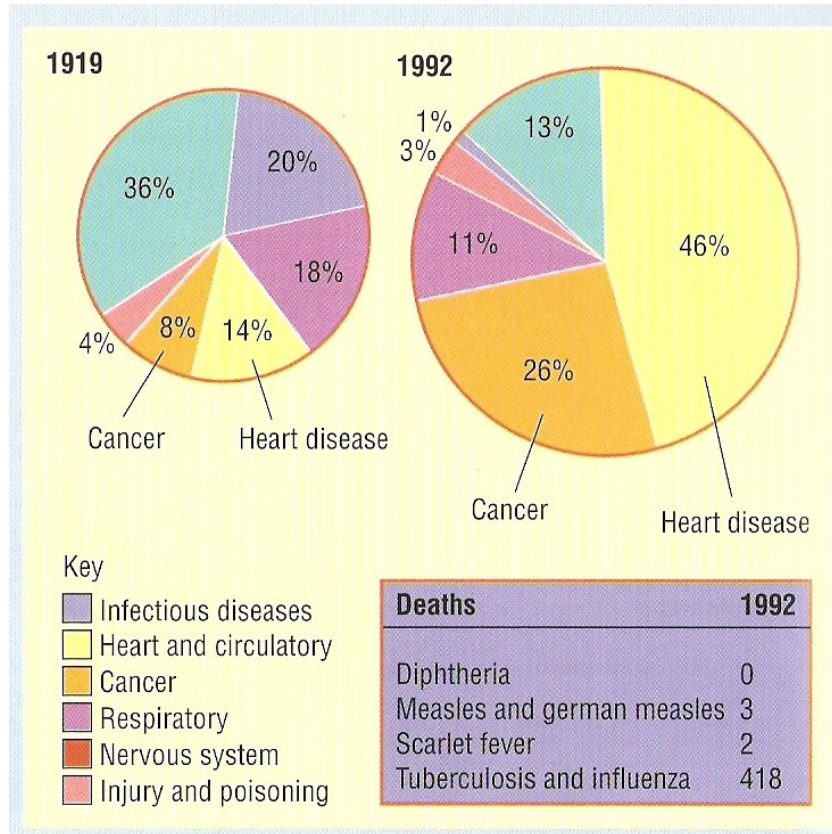
## From Cradle to Grave – The Birth of the NHS

- **1911** – National Insurance Scheme provided health care for those in employment schemes but women, children and the unemployed were not included.
- During the Depression the number of people who could not afford health care increased. Many people still relied on families for care when they were sick.
- The amount of money put into the scheme by the government increased when people were hurt by German bombing raids during World War 2.
- **1945** – William Beveridge wanted a free health service for all.
- **1946** – The new Labour government got parliament to pass a law that allowed the formation of the National Health Service (NHS).
- The NHS included: medical training and research, maternity and child care, health visitors, health centres, vaccinations, ambulances, family doctors, medicines and appliances, dental care, blood transfusions, hospitals and specialists.
- **Opposition** – The NHS was an expensive service to run and the British Medical Association (BMA) said that doctors did not want to be told where to work and how much they were going to get paid.
- **Improvements** – Women lived longer and were healthier, and family doctors became part of a team of caregivers.
- **Problems** – Its expense meant that prescriptions had to be paid for by patients in the 1950s and some treatments were considered too expensive to be done.

# Medicine in the 20<sup>th</sup> Century

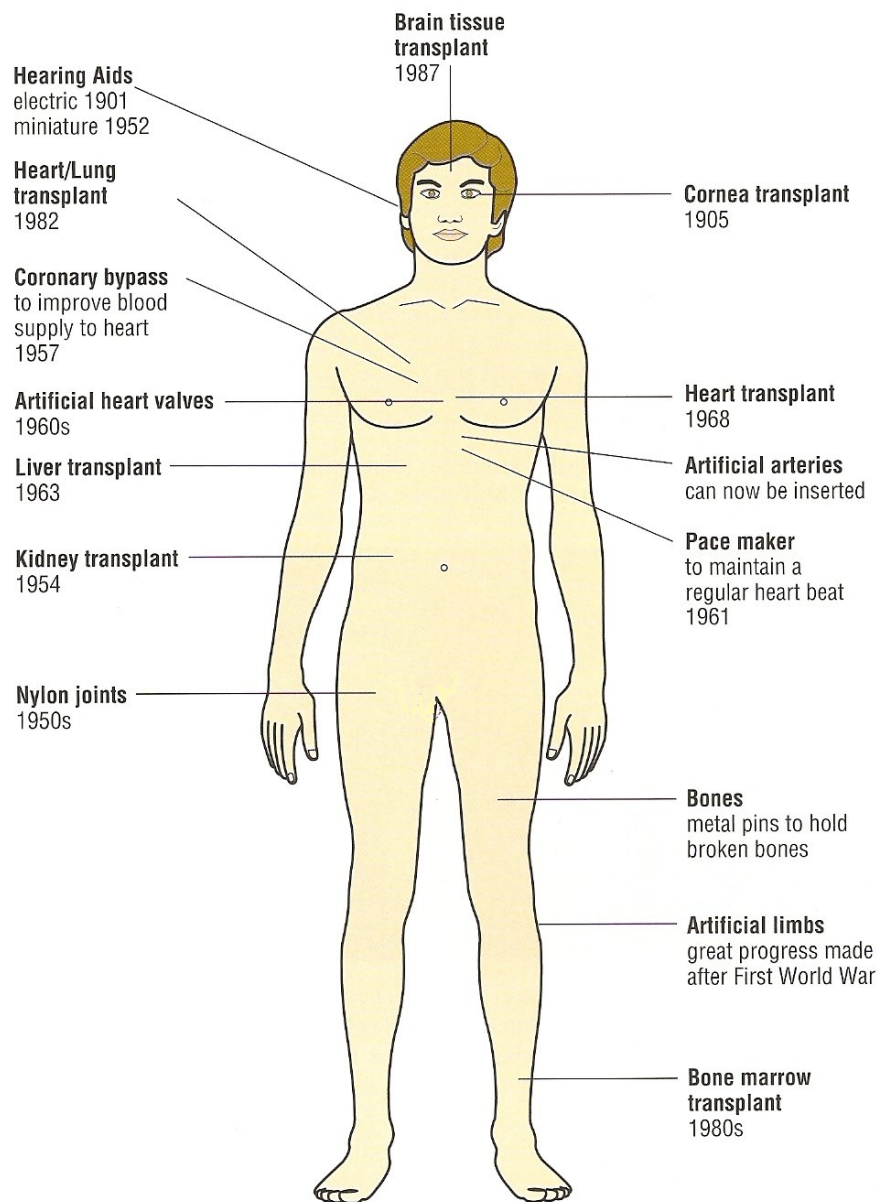
## Medicine Today

### Why have things changed?



- Increased life expectancy.
- Instead of dying from pneumonia, people are living longer and developing illnesses like cancer which is more difficult to cure.
- Deaths from cancer and heart disease were underestimated in the past.
- Changes in the lifestyle and diet.

## Why has surgery improved so rapidly in recent years?



## DNA

The discovery of DNA in the 20<sup>th</sup> Century brought new opportunities. It is like a computer program containing a long list of instructions that operate your body. It is in every cell of your body and is a code within your genes that decides everything about you.

- **1953** – Francis Crick and James Watson discovered the structure of DNA and how it passed on information from parents to children.
- **1990s** – The Human Genome Project was undertaken and took 10 years to complete with the work being done in 19 countries. It worked out the exact contents of the DNA in the human body, and figured out that the information in our DNA could fill 160,000 textbooks.
- DNA has led to the field of genetic engineering, where scientists could be able to identify the exact gene that passes on hereditary diseases from one generation to the next.
- **International Teamwork** in the 20<sup>th</sup> Century helped scientists work together and make discoveries in much shorter time periods.
- **Technological** breakthroughs in things like biochemistry make this possible and only modern day computers can carry out the work as it is extremely complex.



## Conclusion

- Mortality has been reduced but we now face new killers – rise in the number of deaths from heart disease and cancer which are linked to age and lifestyle (smoking, skin damage from holidays).
- The gap between the rich and the poor is getting wider with large numbers of people still being malnourished.
- War has caused a huge numbers of casualties.
- Bottle-feeding in the Third World is responsible for the death of many infants.

# What impact did WAR have on the development of medicine?

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## The Romans

Medicine and medical facilities were focused on the army. Army was responsible for the best medical facilities and surgeons.

## Middle Ages

War destroyed the public system developed by the Romans as well as destroyed the medical libraries. Chaos of the Dark Ages saw the kingdoms develop their armies at the expense of spending on medical research. Travel became dangerous – restricting the spread of medical communication between doctors and the spread of ideas. Education was disrupted and the training of doctors abandoned.

Crusader wars allowed the West to come into contact with Arab medicine enabling new ideas to be used for progress.

## Renaissance

Paré – Surgeon in the army. Boiling oil had always been used to deal with gunshot wounds. Oil ran out during a battle, ointment was used as a substitute. Without battlefield situation change may never have been tried.

Richard Wiseman – Surgeon to King Charles II. Had been a surgeon in the Navy/Army meant he was able to develop his skills in war. War gave opportunities that did not occur during peacetime.

## 1750-1900

Florence Nightingale – Crimean war created the circumstances that enabled the development of her methods.

Koch vs. Pasteur – Nationalism and military rivalry spurred on Pasteur to show his country France was superior to Koch's country Germany.

## World War One

X-rays became the routine method of finding bullets/shrapnel in the body. Blood transfusions were used for the first time. Many surgeons learnt skills quickly on the battlefield, setting up specialist practices when they returned home after the war and improving the standards of treatment available.

Boer War and World War One showed how unfit and unhealthy recruits were from the working classes. Helped encourage the government to introduce Public Health reforms to help solve this problem.

Bullet wounds carried infections deep into the body. Not solved during the war but inspired many doctors to research after the war.

## World War Two

Due to the looming war, governments gave far more money to medical research including Florey and Chain in 1939. This government-funded research into penicillin meant that production could be started in 1942 to aid the war effort.

### Conclusion (Two-Sided Argument)

- Gave loads of opportunity to practise skills on serious wounds which was rare outside of war.
- Inspired research and identified areas that needed to be improved.
- Gave opportunity for chance discoveries to be made.
- Increased money spent on medical research as it became a priority in war.
- Very destructive because each experiment is taking place on a real live person who is dying.
- Great numbers of medical facilities were destroyed during periods of war.

# What impact did GOVERNMENT have on the development of medicine?

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## Romans

Improved the health of all by introducing wide range of Public Health reforms. Sewers, fresh water brought by aqueduct. Also had baths and toilets.

## Middle Ages

Collapse of the Roman Empire led to the end of the Roman system and chaos in the Dark Ages where there was no effective government. Led to decline in public health in the early Middle Ages.

Begins to improve later in the Middle Ages as governments do begin to act to improve hygiene. Laws against throwing rubbish in the streets were introduced while gutters and sewers were developed. But only had a limited impact and did not have much effect against the Black Death when it returned.

## Renaissance

Outbreak of the Plague in 1665 killed 65,000 out of a 400,000 population in London but much less than previous outbreaks due to the impact of government. Infected housing was shut, people with infections were quarantined and assemblies of people banned.

## 1750-1900

Edwin Chadwick's 1848 report gave local government powers to make improvements but was not compulsory so many did nothing.

1875 Public Health Act provided clean water and proper drainage/sewers. Some improvement but Charles Booth investigated the East End of London in 1889 and found appalling poverty and poor living conditions still remained.

Funded the work of Jenner enabling him to make his big breakthrough in the field of immunology. This also extends to the works of Pasteur and Koch, who were funded by their national governments.

## 20<sup>th</sup> Century

Period of the greatest government works.

Major reforms passed through parliament. Education Acts in early 1900s improved childcare. The 1911 National Insurance Act improved worker's treatment if they made a contribution. 1930 Housing Act cleared the slums.

Funded work of Florey and Chain, enabling the discovery of penicillin.

Establishment of the NHS in 1948 brought free medical care to all and made a massive improvement to people's health and life expectancy. Also improved housing with the introduction of council housing across UK.

## Conclusion (Only in certain periods have government helped)

- Health improvements were very expensive and took great deal of organisation, which meant could only realistically be done with government help.
- Best periods of health improvement therefore have taken place due to positive government intervention – Roman and 20<sup>th</sup> Century.
- Other times, government only had a limited impact because of lack of laws or fact not compulsory.

# What impact did RELIGION have on the development of medicine?

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## Pre-History

Aborigines prayed to the spirits which they also used to explain why people became ill. Medicine men prayed to the spirits to cure the sick. Wore charms to ward off evil. Buried waste to stop the evil spirits from using it, helping to improve hygiene as a result. Beliefs caused no problems and did not hold medicine back.

## Ancient Egypt

Increased medical knowledge but believed in life after death and that they would need the body in the afterlife. Bodies were embalmed with parts like the liver taken out and preserved. Helped to get a better understanding of the body.

## Roman

Prayed to Gods, chiefly Salus but also to the Greek God Asclepius. Caused no harm.

## Middle Ages

Power of the Church held back medical research. Supported Galen and would not allow anyone to challenge his ideas. Banned books, which restricted the spread of ideas. Encouraged belief in the supernatural, encouraged people to believe that illness was a punishment for their sins which proved harmful during the Black Death.

Maintained education, keeping many ideas alive in their libraries that would otherwise have been lost. Set up universities where doctors could be trained. Set up hospitals from the 1100s, though only 10% actually cared for the sick.

## 1750-1900

Religion led opposition to use of anaesthetic. Said that pain was a part of the religious experience of labour and should not be interfered with.

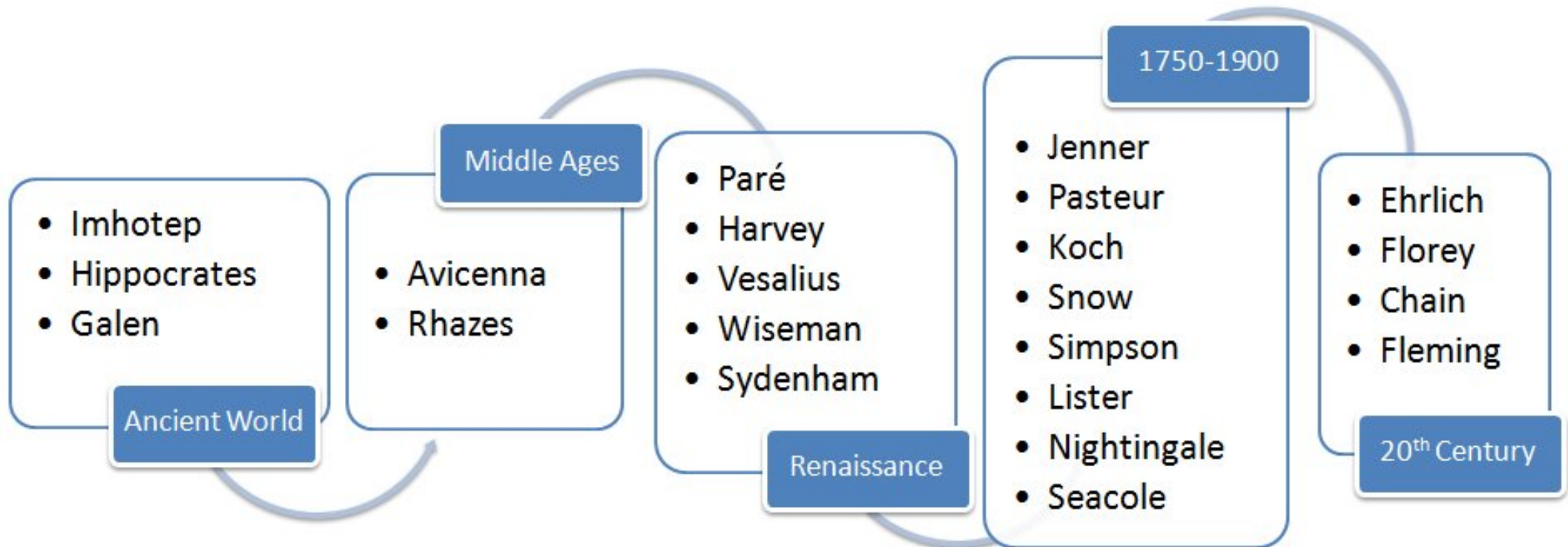
Many entered the profession because of their religious beliefs, for example Florence Nightingale.

## Conclusion (Two way argument but overall more of a positive)

- Religion has always played a part in medicine.
- At times the Church did hold back progress but also played a key part in the funding and education of medicine.

## Factor Four – Individual Genius

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# How much have HERBAL REMEDIES been used in medicine?

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## Pre-History

Aborigines used herbs and plants to treat sickness. Native Americans also used them.

## Egyptians

Used herbs from India, China and parts of Africa brought by merchant traders. Honey was especially important.

## Middle Ages

Most illnesses were treated by herbal potions. Doctors and women healers used them. Many of the ingredients were locally grown but foreign herbs were popular. Sugar was also widely used. Anglo-Saxon leech books show use of herbs.

Many of the remedies used did help people to recover.

## Renaissance

Used regularly by many people such as the Lady Grace Mildmay. After 1492, new herbs were brought back from places in the Americas and they had a great impact on health, more so than Harvey, Paré or Vesalius did at the time.

## 1750-1900

Herbal remedies still used in the home by many, particularly the poor due to the high cost of medicine.

# How did CHANCE help medical progression?

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## Paré

Using boiling oil to treat gunshot wounds. When this ran out during battle he took a chance by using an old Roman ointment he had read about, finding a much better treatment in the process.

## Pasteur

Accidentally left some Chicken Cholera solution unused during the summer holiday and when he came back injected chickens with it by mistake. He discovered that the longer exposure to air had weakened the bacteria and allowed the chickens to become immune to it.

## Jenner

Found out that cowpox acted as immunity against smallpox. Only found this out by chance because he worked in the countryside, and noticed that milkmaids hardly ever caught smallpox.

# Exam Skills and Preparation





# Paper One



# Overview of the Paper

Paper One is divided into two sections, with six questions in total. You will be expected to answer four questions, two from each section.

You will have 2 hours for this paper.

Before you start to answer any of the questions, read through the paper and study the sources carefully so that you understand what each question is asking of you.

# Section A

In Section A you will need to answer two questions. Question 1 is source based and you must answer this. For the second question, you will be asked to select and answer one of three questions.

The topic for Section A is *Medicine Through Time*.

# Section B

In Section B you will need to answer two questions. Question 1 is source based and you must answer this. For the second question, you will be asked to select and answer one of two questions.

The topic for Section B is *The American Mid-West*.

# Source-Based Questions

The source-based questions in each question allow for you to interpret information and apply your own knowledge.

In Paper One, you will be expected to answer two source-based questions – one on *Medicine Through Time* in Section A and another on *The American Midwest* in Section B.

The main focus of the questions will be on:-

- the usefulness of the source
- how reliable it is

## What do we look for in a source?

Each source will come with a description underneath it. This will give you the background of the source.

To help you understand the source and answer the questions, you will need to highlight certain pieces of information. These are:-

- **The year or time it was produced.**
- **The place it was produced.**
- **The person who wrote or drew the source.**
- **The reason that the source was produced.**
- **The type of source.**
- **Does it support or contradict any of the other sources?**

Remember that you must use evidence from the sources when you answer the question and compare this with your own knowledge.

If you use quotes, keep them short and snappy – don't copy large amounts of text!

# Source-Based Questions

The source-based questions in Paper One will be focused around certain ideas. These will be:-

- **A comparison between sources:** you will need to discuss how they support and contradict each other as well as giving your own knowledge.
- **An explanation of what the source shows us:** give a description of the source and what you can learn from it, relating it to the question.
- **The reliability of the source:** looking at how trustworthy a source is.
- **The usefulness of the source:** discuss how useful the source is in addressing a topic or issue.

All of the source-based questions on Paper One require you to study the sources for information as well as using your own knowledge to answer the question.

# Non Source-Based Questions

The two non source-based questions you will be expected to answer all follow the same format. This format will be:-

- Question a -**
- A **What** question or **Describe**.
  - State the key features or parts of something.
  - Will be worth 5 marks.
  - 1 Point = 1 Mark
  - 1 well explained point can get you 2 marks.
- Question b -**
- An **Explain why** question.
  - Use the question stem.
  - State reason and then explain it with details.
  - There will always be more than one reason
  - Will be worth 7 marks.
  - Use connectives.

# Non Source-Based Questions

**Question c** may come in a variety of different ways. These are:-

- A **How far** question – you need to evaluate the degree of success or the importance of something compared with others.
- A **most important** question – you will need to examine different reasons for something, saying which is the most important and how they are connected together.



# Paper 2



# Overview of the Paper

Paper Two is made up of 6 questions, which are all source based.

You will have 1 hour 30 minutes to complete this paper.

To help you, the paper comes with a section titled **Background Information**. It is important that you read this to give you an insight of what is expected of you.

Before you start to answer any of the questions, read through the paper and study the sources carefully so that you understand what each question is asking of you.

## What do we look for in a source?

Each source will come with a description underneath it. This will give you the background of the source.

To help you understand the source and answer the questions, you will need to highlight certain pieces of information. These are:-

- **The year or time it was produced.**
- **The place it was produced.**
- **The person who wrote or drew the source.**
- **The reason that the source was produced.**
- **The type of source.**
- **Does it support or contradict any of the other sources?**

Remember that you must use evidence from the sources when you answer the question and compare this with your own knowledge.

If you use quotes, keep them short and snappy – don't copy large amounts of text!

## Answering Questions on Paper Two

Questions will focus on specific themes, except for the very last question. These themes are:-

- What can we **learn** from the source and how does it **compare** to your own knowledge?
- Is the source **useful** in telling us about a particular topic?
- How **reliable** is the source in sharing its information?
- **Compare** and **Contrast** – How similar/different are the sources to each other and/or your own knowledge?

# The Last Question

The last question on Paper Two requires a lot more understanding than the previous ones. It is a collection of all the information and source discussion you have engaged in so far. The last question will:-

- Require you to study all the sources.
- Have a statement which you will be expected to support or dismiss using the sources.
- Use your own knowledge as well as the sources.
- Remember, it will never be a straight forward yes or no – so you need to give a balanced answer.
- Compare and contrast sources in relation to the statement.
- Make sure that you include a conclusion.
- Evaluate the sources for extra marks – comment on which sources are reliable or unreliable and why.

# Answering Exam Questions



**MARK SCHEMES**

# Briefly describe the impact of religion on medicine in Egyptian times.



**1 mark for each valid example identified, 2-3 marks for any features that are described or explained.**

**Award a maximum of 1 mark to general answers lacking in specific contextual knowledge.**

Examples might include: preserve organs for afterlife and learn about structure of the body, human dissection not allowed, kept clean for religious reasons, use of spells.

*E.g. 'The Egyptians shaved their bodies to prevent lice and washed twice a day. This was done for religious reasons but kept them clean. Another way religion affected medicine was they believed you needed your organs like the liver in the next life and so these were taken out of the body and preserved. By doing this they learned a lot about the body. (5)*

# Explain how Galen contributed to the development of medicine.

## **Level 1 General assertions (1-2)**

Valid, but general answers. No specific contextual knowledge.

## **Level 2 Identifies what Galen did - fails to explain its contribution to the development of medicine (2-4)**

Specific contextual knowledge demonstrated but contribution to the development of medicine not considered (i.e. how he improved on what had been believed/done before or his impact on the future). Examples include: anatomy, the nervous system, used dissections, importance of the heart, theories about blood, revived Hippocratic methods, use of opposites, blood-letting, his influence in the Middle Ages.

## **Level 3 Explains one specific contribution to the development of medicine (allow explanations of negative impact) (3-5)**

Contribution to medicine, (either positive or negative) will be considered.

## **Level 4 Explains more than one specific reason / contribution to the development of medicine (allow explanations of negative impact) (6-7)**

Award 6 marks for one reason explained and another identified.

Award 7 marks for two reasons explained.



# How far did the homesteaders and the Mormons face the same problems once they had settled in the West? Explain your answer.

## **Level 1 General assertions (1-2)**

### **Level 2 Identifies specific problems—similar or different (2-3)**

Specific contextual knowledge demonstrated but no explanation.  
Examples might include: similar - finding water, difficulty in growing crops climate and hard soil, lack of timber for building ;  
different - isolation of homesteaders, Mormon problems with the government, Mormon problems other settlers passing by, problems over polygamy, homesteaders having by themselves.

### **Level 3 Identifies specific problems—similar and different (4)**

Specific contextual knowledge demonstrated but no explanation.

### **Level 5 Explains how some problems were similar and others were different (6-7)**

**Level 6 As for Level 5 but in addition explains a reason why overall they were more similar or more different (8)**

# Answering Exam Questions



**MODEL ANSWERS**

# Briefly describe the impact of religion on medicine in Egyptian times. (5 marks)



## Answer A

Religion had a big impact on medicine during the Egyptian times. The strong belief of the Egyptians in the afterlife meant that they felt that their bodies were needed in the afterlife. For medicine, this meant that religion influenced medicine by preventing dissections of humans to further knowledge of the body. However, religious beliefs also called for the internal organs to be preserved after death in jars, which provided people with the chance to study the organs and where they were found in the body.

## Answer B

Religion in the Egyptian time had a big impact on medicine, affecting the knowledge and understanding that they had on the body and the position of organs. It also prevented people from learning more about the body.

# Explain how Galen contributed to the development of medicine. (7 marks)



## Answer A

Galen was very important in the history of medicine and made lots of important discoveries that have had a lasting impact on medicine.

## Answer B

Galen was very important in the development of medicine. He carried out experiments to show how the nervous system worked. He experimented on pigs to show that the brain was connected to the nervous system and that the nervous system controlled movement and the voice. However, he had to use animal dissections most of the time and so sometimes got things wrong about the anatomy of the human body. He thought that human jaws were made from two bones like animals. However, his books were believed in the Middle Ages - no one dared question him and so he ended up preventing further progress for a long time.

**How far did the homesteaders and the Mormons face the same problems once they had settled in the West? Explain your answer. (8 marks)**



Answer A

I think they had the same problems. They were living in the west of America and so the problems were going to be the same.

Answer B

I think that their problems were very different. The homesteaders were often on their own miles from their nearest neighbours. This meant that they had no one to help them farm their land. It also meant that they often could not afford by themselves the machinery they needed. Sometimes the isolation was simply too much for them. The Mormons did not have this problem. They moved as a community and solved their problems together. For example they shared all the work and all the land.

# Answering Source-Based Exam Questions



**EXAMPLE QUESTIONS WITH MARK SCHEMES**

What can we learn about the attitudes of American settlers towards the Plains? Use the source to explain your answer.



*An illustration called 'Across the Continent: Westward the Course of Empire Takes its Way', published in 1868.*

**Level 1** - Answers based on the surface information of the source (1)  
**OR** General assertions about American settlers attitudes towards the Plains. (1)

**Level 2** - Answers making suggestions about attitudes towards the plains but no knowledge. Ideas could include buildings, technology, farming, etc. (2-3)

**Level 3** - Answers using knowledge and evidence from source to answer question. (4-5)

## Study Sources C and D.

Are you surprised that people behaved in these ways during the plague of the fourteenth century? Use the sources and your knowledge to explain your answer.

SOURCE C



A drawing of a doctor during the plague in the fourteenth century. The 'beak' was filled with sweet-smelling substances.

4

SOURCE D



A group of flagellants whipping themselves during the plague in the fourteenth century.



Study Sources C and D.

Are you surprised that people behaved in these ways during the plague of the fourteenth century? Use the sources and your knowledge to explain your answer.



- Level 1** - Uses information from the sources to highlight ways in which behaviour is surprising. (1-2)
- Level 2** - Explains how people had no real understanding of the causes behind the disease and how it spread. (2-3)
- Level 3** - Explains reasons why the people behaved as they did. (4-5)
- Level 4** - Level 2 and 3 (5)

# Paper 1 Question Bank

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## Medicine Through Time

### Question a

- Briefly describe ways in which prehistoric people treated illness
- Briefly describe ways in which religion has affected medicine
- Briefly describe how Fleming discovered penicillin
- Briefly describe the medical advances of the Ancient Greeks
- Briefly describe the advances the Romans made in public health
- Briefly describe the problems faced by surgeons at the beginning of the nineteenth century
- Briefly describe the medical progress made by the Ancient Egyptians
- Briefly describe the work of Vesalius
- Briefly describe how Jenner discovered smallpox vaccination
- Briefly describe the medical treatments provided at a Greek Asclepeion
- Briefly describe the impact of religion on medicine in Egyptian times
- Briefly describe the main problems of public health in the early nineteenth century

### Question b

- Explain how Galen contributed to the development of medicine
- Explain ways in which chance has had an impact on the development of medicine
- Explain why there was so much improvement in public health in the second half of the nineteenth century
- Explain why bloodletting was widely used in the Middle Ages
- Explain why Vesalius was able to make so many discoveries about the human body at that time
- Explain why there was so much opposition to smallpox vaccination throughout the nineteenth century
- Explain how the way of life and the beliefs of the Egyptians helped them to make advances in medicine
- Explain how war has helped progress in medicine
- Explain how factors other than Fleming's work contributed to the development of penicillin
- Explain why it was possible for advances to be made in medicine during the Medical Renaissance
- Explain why it was possible to make advances in public health in nineteenth century Britain
- Explain why there was opposition to advances in surgery in the nineteenth century

### Question c

- Were the medical advances made by the Greeks more important than those made during the Medical Renaissance? Explain your answer
- Were the advances in public health made by the Romans more important than those made in nineteenth-century Britain? Explain your answer
- Was Lister more important than Simpson in the development of surgery? Explain your answer
- How far were Greek ideas about medicine accepted in the Middle Ages? Explain your answer
- "Chance, by itself, has never helped progress in medicine." Explain how far you agree with this statement
- Who is more important in the history of medicine, Pasteur or Fleming? Explain your answer
- Why did the Ancient Greeks make more progress in medicine than people in the Middle Ages? Explain your answer
- Who is the more important in the history of medicine, Ambroise Paré or William Harvey? Explain your answer
- Who contributed more to the development of vaccination, Jenner or Pasteur? Explain your answer
- Who is the more important in the history of medicine, the Greeks or the Romans? Explain your answer

- “Since Roman times religion has hindered, rather than helped, medical progress.” Explain how far you agree with this statement
- The second half of the nineteenth century saw important developments in public health. How far were these improvements more important in the development of medicine than the work of Fleming? Explain your answer
- How far was Galen more important than Hippocrates in the development of medicine? Explain your answer
- How far did people in the seventeenth century deal with plague more successfully than people did in the fourteenth century? Explain your answer

### **The American Mid-West**

#### Question a

- Briefly describe how the Plains Indians used the buffalo
- Briefly describe the main beliefs of the Mormons
- Briefly describe the problems that settlers faced during their journey westwards
- Briefly describe the dangers faced by cowboys in their work
- Briefly describe the problems faced by homesteaders on their journey across the plains
- Briefly describe the problems of law and order in mining towns

#### Question b

- Explain why the Mormons went west to settle at the Great Salt Lake
- Explain why there was so much conflict between the American government and the Plains Indians
- Explain why the American government passed the Homestead Act of 1862
- Explain why cattle ranching spread to the Plains
- Explain why the Plains Indians disliked living on government reservations
- Explain why the Mormons faced many difficulties under Joseph Smith’s leadership
- Explain why cattlemen and homesteaders came into conflict

#### Question c

- How far did the homesteaders and the Mormons face the same problems once they had settled in the West? Explain your answer
- The cattlemen and the homesteaders were often in conflict with one another. Who were more to blame, the cattlemen or the homesteaders? Explain your answer
- Who was more successful in the West, the Mormons or the homesteaders? Explain your answer
- “Custer lost the Battle of the Little Big Horn only because of his mistakes.” How far do you agree with this statement? Explain your answer
- How successful were homesteaders in overcoming the problems of living and working on a homestead? Explain your answer
- Three reasons for the decline of the cowboys’ traditional way of life were the invention of barbed wire, the harsh weather of 1886-7 and the Johnson County War of 1892. Was one of these reasons more important than the others? Explain your answers
- How far was the Battle of the Little Big Horn in 1876 a victory for the Plains Indians? Explain your answer
- Which was Brigham Young’s most important contribution to the Mormons: deciding to go west and organising the journey, or organising the community at Salt Lake? Explain your answer
- Which was the more important in the final defeat of the Plains Indians: the slaughter of the buffalo or the setting up of the reservations? Explain your answer