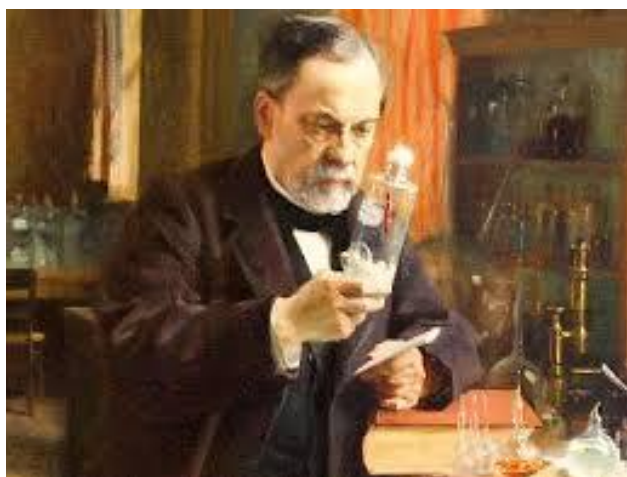
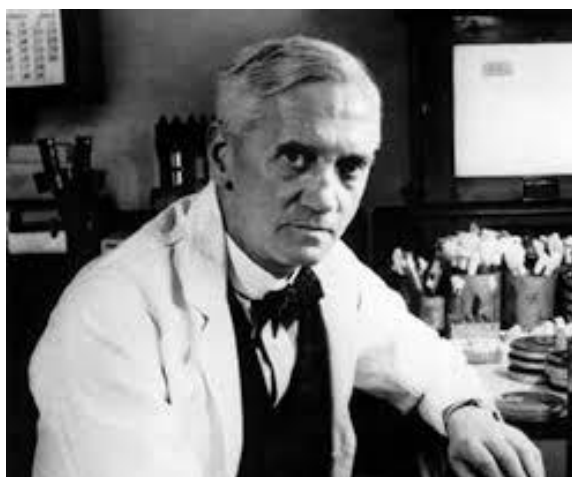


Health and the People: c1000 to the present day



Name: _____
Form: _____
History Class: _____
History Teacher: _____

Paper 2
Section
A
8th June
2018

Section	Date Due	Completed	Signed by Teacher
Before medieval			
Medieval			
Renaissance			
19 th Century			
20 th Century			
Summary			
Exam Questions			

Exam Paper



This is a thematic study and is about understanding how medicine and public health in Britain developed over a long period of time.

Key questions in this study are:-

- When did things change and why?
- When did things stay the same and why?
- When did things regress (get worse) and why?

This is examined in Section A of Paper 2.

There will be 4 compulsory questions.

1. How useful is Source A for a historian studying...(8 marks)

TOP TIPS!

- Say if it is useful or not based on content
- Say if it is useful or not based on source provenance
- Say why it may not be useful

WRITING FRAME

The source tells us...

This is useful to a historian because....

I know that....

The source does not tell us however that....

The provenance of the source is useful as it tells us that....

2. Explain the significance of....in the development of medicine. (8 marks)

TOP TIPS

- Think about what it was like before
- What was the short term and long term impact
- What was the context of the time (what was happening at this time generally that may have a bearing on your answer.

WRITING FRAME

.... means that....

Its discovery was significant because....

It was also significant because....

In the short term, this developed medicine because....

In the long term, this developed medicine because...

**3. Compare the.....with the.....
In what ways are they similar?
Make reference to both in your answer. (8 marks)**

TOP TIPS

- Find at least 3 points of comparison
- Think about cause
- Effects
- Attitudes to the event
- Do not write about differences

WRITING FRAME

.....was an important event because....

In addition,was another important event because....

They are similar because....

Another way they are similar is because....

Finally, they are similar because...

4. Has _____ been the main factor in the development of medicine in Britain since the medieval times ?

Explain your answer with reference to _____and other factors(16 +4 spag)

TOP TIPS

- Find evidence and examples from at least 2 different time periods
- Explain the factor given in the title but also look at 2 other factors of importance
- Use Point, evidence and explain each time .
- Try and link factors if you can
- Place in order of importance and say why.

WRITING FRAME

There have been many factors that have helped in the development of medicine in Britain. Religion,....., and have each contributed to medicine development and progression.

Before Medieval



Prehistoric Medicine:

From the prehistoric times onwards disease was explained by supernatural beliefs. Prehistoric people believed evil spirits caused disease and they would use crystals, shamans and local medicine men to scare evil spirits into leaving the body. Trepanned skulls have been discovered by archaeologists who believe prehistoric peoples may have cut holes into the skull to allow evil spirits to escape the body. Just like modern aborigines, prehistoric peoples may have buried their hair, nails and faeces so evil spirits would not use them to cast spells against them. They would also use herbal remedies to cure diseases and illnesses they could see.

Egyptian Medicine:

The ancient Egyptians believed in many Gods, some of which had the power to cause and cure diseases. Priests used prayers and charms to drive away evil spirits which they believed caused disease. They kept clean and practised mummification but this was for religious reasons, not medical. People in Egypt sought protection from illness by wearing amulets and building temples and shrines to worship God. The Egyptians were the first to develop writing - hieroglyphics on papyrus paper. They believed in the channel theory which was that the body was made up of series of channels, and when these channels become blocked, you would become ill. Archaeologists have found evidence of limestone bathtubs and latrines in the homes of rich Egyptians but plumbing was very simple.

Greek Medicine:

The Greeks also believed in many Gods. One God that was believed to cure illnesses was Asclepius. Many Greeks preferred to go to the Asclepion (a healing temple dedicated to Asclepius and his daughters Panacea and Hygieia) rather than a doctor. In the Asclepion the sick would offer a votive (present) to the Gods. They would then sleep in the temple and the gods will cure them or a priest would interpret their dream and treat them. Hippocrates developed the theory of the four humours: the body was thought to be made up of four humours: black bile, yellow bile, blood and phlegm. If the humours were out of balance the person would become ill. The Greeks also practised regimen, this was an idea of Hippocrates who recommended careful diet, moderate exercise- healthy body, healthy mind.

Roman Medicine:

The Romans believed in Asclepius too and temples dedicated to him could be found all over the empire. Gods were part of their everyday lives and were expected to be very powerful. Asking the gods for help would have been a first rather than a last resort. Galen developed on the ideas of the four humours and came up with the theory of opposites this meant that if a patient had had the flu (cold and wet/phlegm) they would be given something hot and dry to cure it, a hot chilli for example. The Romans were the first people to carry out an organised programme for public health.

Reasons for it were varied:

- Roman army created an Empire, the health of the army was vital in maintaining this empire
- Needed a healthy workforce, slaves, merchants and traders to maintain the empire
- Roman governments were well organised and efficient and could see plans carried through
- They were rich through taxation and conquest and could pay for projects to be built
- Had skilled engineers in the army to design and build aqueducts, bathhouses, latrines, public fountains, sewers
- Had vast army of slaves to act as cheap labour
- Recognised one way to keep conquered territories peaceful was to provide them with facilities they could be proud of.





Before Medieval: Activities

Statement	True or False?	Detail
Prehistoric people used herbal remedies to treat disease		
The Ancient Egyptians carried out mummification for medical research		
The Ancient Egyptians were the first people to use writing		
The Ancient Egyptians had some basic public health		
In Ancient Greek culture, Asclepiions daughter were called Hanacea and Pygiea		
In an Asclepion, patients would offer a votive to the Gods		
The Greeks believed in the three humours. If there were unbalanced this would cause illness.		
The Greeks used a combination of natural and supernatural treatments		
The Romans also used Asclepion temples		
Galen was responsible for the theory of opposites		
The only reason the Romans introduced a public health system was because of the large army		

Was there progress made between the Prehistoric period and the Roman period? Write a sentence with examples for the following categories.

- a) Knowledge of causes of disease
- b) Treatments uses
- c) Knowledge of anatomy
- d) Public Health

Medieval Medicine: Ideas about Disease

Causes of Disease

- Causes of disease - they believed in the ancient idea of the 4 humours. This related to the idea that the body was made up of four humours - black bile, yellow bile, blood and phlegm. In order to be healthy, the four humours need to be in balance in the body. Galen's ideas remained popular during the medieval times because Galen's development of the four humours revolved around the idea of a divine creator - this idea fitted into the medieval beliefs about an all powerful God.
- Some people noticed that bad smells or bad air surround disease. They came to the conclusion that bad smells in the air cause disease.
- There were also supernatural ideas about the causes of disease. Witchcraft was feared by many as they believed the world was full of demons trying to cause death and disease. The religious nature of medieval society also meant that there was a belief that God was punishing the sins of the people by giving the disease. If the whole of society was being sinful, God would send an epidemic or plague.



Treatment of Disease

- Medieval people did not understand the causes of disease and focused on treating the symptoms themselves, most followed the ideas of Hippocrates, and instead many doctors harmed their patients. These treatments involved bleeding and purging.
- Some herbal remedies were used by Anglo-Saxons and the work of microbiologists has found that, in many cases, the treatments would be effective.
- There was a belief in the doctrine of signatures. As they believed that God had caused illness, they thought that God had also created cures in nature, they just needed to be found. Saxifrage, for example, breaks up rocks as it grows between them, they therefore believed it would be perfect for treating kidney stones.

Who would treat the sick?

- Ordinary people would rely on the apothecary for treatment. They would buy and sell medicines and herbal treatments. Apothecary would train as apprentices for 7 years.
- They may also visit the local wise woman. Her knowledge would have been gathered over many years of experience and knowledge passed down through the family.

Read through the information above and complete the activities:

Find 2 points of evidence to suggest that medical understanding had progressed from the ancient period

-
-

Find 2 points of evidence to suggest that medical understanding had stayed the same

-
-

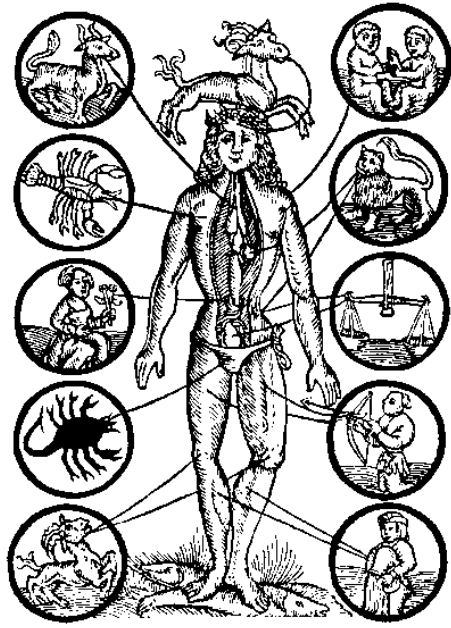
Find 2 points of evidence to suggest that medical understanding had regressed

-
-

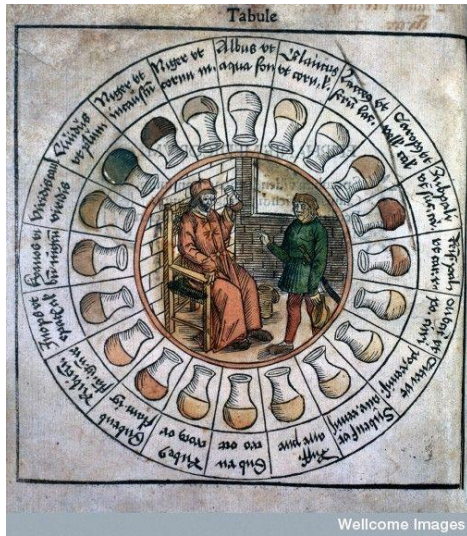
Medieval Medicine: Ideas about Disease

Diagnosis and treatment: Natural

During the Middle Ages doctors would examine urine, faeces and a patient's blood before making a diagnosis and prescribing treatments.



Doctors had 2 useful ways of diagnosing illness- can you guess what they are from the pictures?



Urine Color Chart

Urine Color	Possible Meaning
Clear	Good hydration, overhydration or mild dehydration
Pale Yellow	Good hydration or mild dehydration
Bright Yellow	Mild or moderate dehydration or taking vitamin supplements
Orange, Amber	Moderate or severe dehydration
Tea-Colored	Severe dehydration

Uroscopy - urine charts

Doctors would sample patients urine to make a diagnosis- by sample I mean LOOK, SMELL and taste it.



DIAGNOSIS

The Zodiac chart

This would say which parts of the body were associated with which sign. If you were Aries you may suffer more from head complaints- these charts would tell you what treatments were best and sometimes what time to carry out the treatment.

Complete the sentences:

1. The supernatural method of diagnosis was...

1. The natural method of diagnosis was....

Islamic Medicine:

- In the Islamic world individuals preserved the Greek and Roman medical works and developed them further.
- Avicenna wrote his own medical textbook, *The Canon of Medicine*, containing practical treatments for illnesses.
- Rhazes was the first doctor to tell the difference between measles and small pox. Rhazes also warned of the dangers of blindly following the works of Hippocrates and Galen.
- Islamic medicine used a variety of drugs made from animal and plant extracts and from chemicals such as copper sulphate.

Did Religion help or hinder the development o medicine in this period? Explain your answer.

Medieval Medicine: Public Health

Why was public health so bad?

- Attack on empire by barbarian tribes e.g. Goths, Vandals, Huns who had little time for public health saw people's health come under serious threat
- Absence of strong government saw filthy medieval towns, waste in streets, few public toilets situated next to wells or rivers which became polluted some improvements after 1200 cesspits lined with stone to stop them leaking.
- Houses packed closely together, unpaved streets impossible to keep clean
- Kings more interested in defending country and keeping law and order than promoting public health

How did they try to improve public health?

- Church and monasteries clean, bathed regularly and built water systems like in Canterbury cathedral to pipe water to different parts of the cathedral.
- Wealthy took care to keep clean - brushed their teeth, bathed. Poorer people in countryside had access to clean water.
- Towns councils or corporations passed laws to prevent urinating in streets and tradesmen dumping rubbish etc.
- Rakers were employed to clean out cesspits and some public latrines were provided.
- Edward III tried to get Lord Mayor to clean up city of London in 1429

Why were conditions better?

- Monasteries and Abbeys were wealthy in the Medieval ages: many people gave money, valuables and land to these institutions in return for prayers.
- In England, monks made a lot of money from the production of wool.
- The wealth gained by monks allowed them to develop good public health facilities.
- Monks were educated, disciplined and they had access to medical books in their libraries. They also had infirmaries where monks would train in the use of herbs for healing. Many of the medical books explained the simple ideas of regimen - sleep, exercise and moderation of diet - to balance the humours.
- Monks also learned from the ancient world that a basic principle of good sanitation was to separate the supply of clean water from the waste water that came from the toilets and wash places



Medieval Hospitals

- Most small hospitals were set up as alms houses to provide a home for the old and those who were unable to work who might otherwise have had to live on the streets. Most hospitals were funded by the church.
- There were many leper houses, often outside of the city walls and some hospitals for specific patients such as St Bartholomew's hospital in London, set up for poor pregnant women.
- Hospitals provided some care - on arrival most patients would be bathed and clothes would be washed. The care received would be carried out by nuns or elderly women. The main treatment provided was prayer. Patients would be expected to confess their sins to bring about recovery. Many sisters or monks would provide some medical care through herbal treatments. There is some evidence to suggest that medieval monks carried out successful amputations.

Medieval Public Health: Activities

Using the information from the previous page, find evidence to suggest that the Middle Ages were/were not dirty.

Smelly	Not smelly
	Medieval monasteries had a complex system of public health.

Make judgement. How far were the middle ages smelly?



Medieval Medicine: The Black Death

The Black Death

- Historians think that the plague arrived in England during the summer of 1348. During the following autumn it spread quickly through the south west. Few villages escaped. Churchyards were full with bodies.
- The plague spread quickly during the winter of 1348-1349 to the north of England. By 1350, nearly the whole of Britain was infected with the plague.
- At the end of 1350 nearly two and a half million people were dead!
- We now know that the most common form of the Black Death was the BUBONIC PLAGUE! This disease was spread by fleas which lived on the black rat. The fleas sucked the rat's blood which contained the plague germs. When the rat died the fleas jumped on to humans and passed on the deadly disease

Avoid disease:

- Prayer
- Making tall candles and burning them in church
- Avoid eating too much
- Avoid all plague victims
- Avoid bathing so you don't open up the pores
- Clean filth from the streets
- Carry a posy of sweet smelling herbs to keep away evil smells
- Attend church and pay for your soul everyday
- Bathe in urine three times per day



Causes and Treatments

Beliefs about the cause:

- Bad smells
- Four humours
- Gods punishment
- Alignment of the planets
- Earthquake
- Jews have poisoned the water

Treatments

- Pop buboes to release disease
- Attach a live chicken to buboes to drive away disease
- Drink a mixture of water and vinegar
- Carry out flagellation
- Bleeding

Which of the above prevention ideas and cures may have been successful in combatting the plague?

Source C: Robert of Avesbury, a chronicler at the Archbishop of Canterbury's court, wrote in 1349.

The pestilence, which had first broken out in the land of the Saracens (the Middle East), became much stronger; it visited all the kingdoms with the scourge of sudden death. It began in England in Dorset, and immediately advancing from place to place attacking men without warning. Very many of those attacked in the morning were dead before noon. And no one it touched lived longer than three or four days. And reaching London, it deprived many of their life everyday, and increased so greatly from February until April 1349 and there were more than 200 dead bodies a day buried in the new Smithfield cemetery. The grace of the Holy Spirit finally intervening, about May, 1349, it ceased in London

Read the source carefully. What does the source suggest about what made the epidemic so terrifying?

Medieval Surgery

Advancements in Medieval Surgery

- Surgery made some surprising leaps forward in Medieval times. This was thanks partly to ingenious barber-surgeons on the battlefield, and partly to the discovery of some natural anaesthetics and antiseptics.
- Medieval surgeons realised how to use wine as an antiseptic, and they used natural substances (mandrake root, opium, gall of boar and hemlock) as anaesthetics.
- However, they still had no idea that dirt carried disease, and most operations of Medieval times, if carried out today, would end in a suit for criminal negligence.
- Deep wounds still caused death from bleeding, shock and infection. Some surgeons even believed it was good to cause pus in wounds thinking this would prevent infection.
- One way of dealing with blood loss was cauterisation which meant applying heated iron to the wound. This was very painful. New methods were being developed in the Islamic world like using ligatures made from cat gut to tie off blood vessels.
- The surgeon would not have had university training, he would have learnt what he knew from other surgeons, from surgical texts or through operating on soldiers injured on the battlefield.
- Barber surgeons combined the role of hairdresser, dentist and doctor. Some were even butchers or animal doctors
- Surgeons guilds were later formed which required a surgeon to get a license. This separated the surgeons from the barber surgeons.
- Women were allowed to train as surgeons.
- A physician was university trained however a surgeon did not have to be. Surgery was looked down upon by physicians.
- The surgeon would have lots of surgical tools such as amputation tools, arrow pullers, cauterise (hot irons) for stopping bleeding, bloodletting tools.
- The most common form of operation was bloodletting which was done to restore the balance of the 4 humours, this could be done by draining blood from a small incision or using leeches which would also sometimes draw out infection as well.
- Operations for breast cancer, bladder stones and haemorrhoids were successfully carried out as well as trepanning (drilling a hole in the skull to cure epilepsy which they thought was caused by evil demons)
- Much of the skill of surgeons came from battle field experiences where they would use wound man diagrams to show how and where to operate.
- Galen's ideas still dominated medieval thinking. People were reluctant to criticise him because he had the support of the church
- There was a new interest in anatomy and dissections became more common in European universities. However they continued to follow Galen's ideas even though they were wrong (remember he based his findings on the anatomy of animals and not humans)

Important Medieval Surgeons:

- **Hugh and Theodoric of Lucca** criticised the idea that pus was a good thing and used wine as an antiseptic on wounds.
- **John of Ardenne** was a famous English surgeon who's manual contained pictures of his operations and instruments. He used opium and hemlock to dull pain. He came up with a method of dealing with anal abscesses which were common among knights who spent a long time on horseback.
- **Guy de Chauliac** was a French surgeon whose book dominated surgical practise. He criticised the Lucca brother's ideas about pus which meant their ideas were not widespread.

Read the bullet points above, highlight the point using three colours to show evidence of progress, stagnation or regress from the ancient period.

Which of the individuals has had the greatest impact on the development of medicine? Explain your answer.

Medieval Surgery: Factors

Opium was developed as a pain killer but often was too strong and killed patients	Medieval age was one of conflict and battles and this led to great developments in surgery and treatment of wounds	The church preserved a great detail of ancient medical knowledge handed down from the Greeks and the Romans.	Robert Grosseteste worked on optics and developed glasses which would help with later development of microscopes
If a person was dangerously ill, it was more important to be blessed by a priest than by a doctor.	Wine was developed as an antiseptic to clean wounds as result of battle field injuries	Church oversaw the training of doctors in university schools.	Army surgeons became skilful at amputations without anaesthetics
The Church set up hospitals all over Western Europe, which treated the sick, including the poor. Hotel Dieu in Paris is a 7th century example as is St Giles Hospital in Norwich	The Church supported the idea of the four humours and the theory of the opposites. They defended Galen absolutely even though he was wrong	Scientists who tried to insist on scientific approaches to medicine were accused of being anti Church and faced being arrested like the monk Francis Bacon in 1277	Monks and Friars often acted as and trained as doctors, treating the sick. There is evidence they knew how to amputate limbs, induce births and stop scurvy.
It was regarded as a central part of a Christians duty to care for the sick.	Church did not like human dissections limiting knowledge of the human body	Church encouraged positive attitudes to health and hygiene by bathing and washing regularly	The Church developed, and benefitted from, the idea of pilgrimage as ideas from Islam were brought back.
The leprosy epidemics of 12th and 13th century stimulated growth of specialist church hospitals being established	New medical tools were developed to deal with deep wounds caused by arrow heads lodged in the body.	John Ardenne developed pain relieving ointments to apply to war wounds instead of cauterisation	

Read through the statements carefully, colour code them into the following factors:

- Religion
- Science and Technology
- Individual Genius
- War

Which of the factors had the greatest impact on the development of surgery during the medieval period?

Read through the Medieval surgery page. Can you find any more evidence to show how the factors impacted on surgery>

Medieval Exam Questions

How useful is source A for understanding Christian ideas about illness? (8 marks)



Source A

A 16th century painting showing Saint Elizabeth of Hungary (tending to the patient, bottom left) who was famous in the 13th century for helping the poor and sick

1. How useful is Source A for a historian studying....(8 marks)

TOP TIPS!

- Say if it is useful or not based on content
- Say if it is useful or not based on source provenance
- Say why it may not be useful

WRITING FRAME

The source tells us...

This is useful to a historian because....

I know that....

The source does not tell us however that....

The provenance of the source is useful as it tells us that....

This image shows a single sheet of white paper with horizontal black ruling lines. The lines are evenly spaced and run across the width of the page. There is no text or other markings on the paper.

Medieval Exam Questions

Compare public health in a medieval town with public health in a medieval monastery In what ways were they different? (8 marks)

3. Compare the.....with the.....
In what ways are they similar? Make reference to both in your answer. (8 marks)

In what ways are they similar? Make reference to both in your answer. (8 marks)

TOP TIPS

- Find at least 3 points of comparison
- Think about cause
- Effects
- Attitudes to the event
- Do not write about differences

WRITING FRAME

.....was an important event because....

In addition,was another important event because....

They are similar because.....

Another way they are similar is because....

Finally, they are similar because...

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no text or other markings on the paper.

The Renaissance

- The Renaissance led to the revival of all things Greek - Galen was regarded as the font of all medical knowledge, to be slavishly copied. However, as the nature of the Renaissance was questioning, many discrepancies were found between what Galen wrote, and what the surgeons found for themselves.
- Before the renaissance, books were rare and expensive because they were copied out slowly by hand. This meant that knowledge was slow to spread. In 1451, the printing press was invented allowing pages to be printed more accurately and quickly.

Who treated the sick?

- Only the wealthy could afford to visit a physician (doctor) or to use a surgeon. They could charge very high fees and many became quite rich out of their profession.
- Physicians had to study medicine for 7 out of 14 years spent at university. They studied the old Greek ideas, the works of Hippocrates and Galen, and the specialists of their own time such as Vesalius, Pare or Harvey.
- Only men could become physicians.
- Surgeons did not have to train as doctors first and did not have to go to university. They trained under an experienced surgeon. They did not command the same level of respect as physicians. Like physicians, though, they had to have a licence from the Church to practise.



Apothecaries (chemists) made and sold medicines prescribed by doctors. Some treated the sick although they were not allowed to.

Girls from rich families often treated their servants and village people using self-learnt methods from medical textbooks.

The village wise woman used ancient herbal knowledge to cure illnesses.

Who treated the sick?

Wives and mothers treated their families in the first instance.

'Quack' healers usually set up stalls in markets and fairs to sell potions to cure all illnesses

Midwives were available to deliver babies. A physician might be called in if there were difficulties.

Renaissance Medicine: Causes of disease

During the renaissance period of 1500-1750 many superstitious beliefs were challenged. The Church no longer enjoyed such a tight control over medicine due to the impact of the Protestant Reformation of 1517. Doctors found themselves able to dissect bodies and challenge ancient ideas! Meanwhile the emergence of new technologies and the printing press enabled new medical ideas to be advanced. Paracelsus challenged the theory of the four humours and Galen's work. He believed illnesses were caused by chemicals. This paved the way for more scientific thinking. Lady Grace Mildmay wrote many medical guides which had a large number of herbal remedies, balms and minerals. Other Natural discoveries were made especially in the fields of anatomy and surgery. The work of Vesalius, Pare and Harvey paved the way for scientific discoveries to be made. They had little impact in their own time but inspired scientists after the 1700's to continue developing their own natural explanations for the causes of disease rather than simply relying on the ancient works of Hippocrates and Galen. By 1700 people no longer accepted that being touched by the King (God's representative on Earth) would cure a patient of scrofula ('King's Evil').

The Renaissance

Match up the type of healer with the explanation of their role

Apothecaries		They usually set up stalls in markets and fairs to sell potions to cure all illnesses.
Girls from rich families		They made and sold medicines prescribed by doctors. Some treated the sick although they were not allowed to
'Quack' healers		It was their responsibility to deliver babies. A physician might be called in if there were difficulties.
Wives and mothers		They had to study medicine for 7 out of 14 years spent at university. Only the rich could afford to pay them. They had to have a license to practise.
Midwives		They often treated their servants and village people using self-learnt methods from medical textbooks.
Wise women		They treated their families in the first instance.
Physicians		They did not have to train and were not given the same respect as physicians. They had to have a license to practise.
Surgeons		They used ancient herbal knowledge to cure illnesses.

Find 2 points of evidence to suggest that medical understanding had progressed from the Medieval period:

-
-

Find 2 points of evidence to suggest that medical understanding had stayed the same

-
-

Find 2 points of evidence to suggest that medical understanding had regressed

-
-

The Renaissance: Vaccinations

Edward Jenner was born in 1749 and worked as a doctor in Gloucestershire.	Smallpox is spread from person to person by coughing and sneezing and by touching an infected person.	Quite often the family would keep the sufferer hidden from the outside world so they would not be found out.
Having a smallpox victim in the family could spell the end for the entire family. People no longer came to the house, including tradesmen like the coalman and the milkman.	Smallpox is so devastating that rumours are the present government has stock-piled enough vaccine to vaccinate the entire population in case of an emergency.	In Gloucestershire, people believed that you couldn't catch smallpox if you had already caught a mild, non-fatal disease called cowpox.
Cowpox was a disease which milkmaids caught from cows. Jenner decided to investigate why milkmaids never seemed to catch smallpox.	In 1798, Jenner performed an experiment on a young boy. He first infected the boy with cowpox and then infected the boy with smallpox. The boy did not become ill with smallpox.	Jenner repeated his experiment on 23 different people. Finally, he was able to conclude that cowpox did protect the body from smallpox.
Jenner had discovered the first vaccination, although he did not actually understand how it worked.	Fifty years after Jenner's discovery, other famous scientists like Pasteur and Koch went on to discover other vaccinations.	The smallpox vaccination was not free, so many people were not vaccinated against it and continued to die from the disease.
Before Jenner's discovery, the only way to prevent smallpox was by inoculation. This was too expensive for most people to afford.	Doctors making money from inoculations did not want to lose that income, so they were very hostile to Jenner's discovery.	Some people did not accept Jenner's evidence. They said it was unbelievable that a disease from cows could protect humans.
Vaccination was seen as dangerous. Some doctors mixed up their vaccines. Others used infected needles!	The horror of smallpox was not just the risk of death, but the deep scars it left on your skin if you survived.	Only in 1852 was the vaccination made compulsory.

Who was Edward Jenner and why was he important?

TASK: In the boxes above, put the number of the question (below) that the information answers.

Some could answer more than one question so you might put two different numbers.

Some questions have more than one answer.

- 1) How could you catch smallpox?
- 2) Why was smallpox such a nasty disease to get?
- 3) Before Jenner, how could you prevent yourself catching smallpox?
- 4) Who was Edward Jenner?
- 5) What discovery did he make?
- 6) How did he prove his discovery?
- 7) Why were some people hostile (against) to his discovery?
- 8) To what extent was his discovery important?

Now answer the following questions in your book:

- 9) Why did Jenner believe that vaccination was an improvement on inoculation? (Use page 118 in the red textbook to help you.)

The Impact of Vaccination:

- In 1840, vaccination against small pox was made free to all infants and in 1853 it was made compulsory. 1871, parents could be fined for not paying.
- In 1980, smallpox disease was eradicated.



The Renaissance: Public Health

The Plague, 1665

- In the summer of 1665 70,000 people out of a population of 140,000 died of the bubonic plague in London.
- The royal court, the rich and even the doctors fled the city to take shelter in the countryside
- Those who stayed attacked Dutch merchants as rumours spread they had brought the plague to London.
- The Lord Mayor of London built a special glass case where he sat and did his day to day administration - the glass would protect him from people visiting his offices
- Those that left London had to get a special medical certificate to say they were safe to travel (plague free)
- The Lord Mayor issued many rules in an attempt to stop the plague from spreading - too little, too late
- Ring-a-ring o' roses - a nursery rhyme you probably all sang at primary school was a rhyme describing the symptoms and the consequence for those who caught the plague

What did people think caused the plague?

- People made the link between dirt and disease and they though bad-air or miasma was the cause
- Many still thought that the plague was a punishment from God for their sins
- Some blamed the movement of the planets

How did people try to cure the Great Plague?

- Animals such as frogs, snakes and scorpions to draw out the poisons
- Bleeding patients
- prayer

How did people try to prevent the plague?

- To move to the countryside away from dirty cities and towns
- All public entertainment was stopped
- Pigs and other animals are not to be kept n the city
- All stray dogs and cats are to be killed
- Rubbish must be cleared from the streets
- Fires are to be lit to drive away bad air
- Houses containing plague victims are sealed up for 40 days and the door painted with a red cross
- No stranger is to be admitted into the city without a certificate of health
- Bodies are to be buried after dark outside of the town
- Public prayers are said on Wednesdays and Fridays
- Weekly fasting

Using the information on both the Black Death and the Great Plague, complete the comparison table below.

Similarities	Differences
In the 14 th and 17 th centuries, people believed the plague was a punishment from God	People in the 1665 plague made the connection between dirt and disease.

Renaissance: Surgery

Andreas Vesalius:

- Was a Belgian born professor of surgery at the university of Padua in Italy.
- Vesalius carried out his own dissection, which was rare at the time, and he found there were many mistakes made by Galen.
- Until this time doctors had believed Galen had given a correct description of anatomy, dissections had been carried out to prove Galen right, not to challenge him.
- The knowledge gained by Vesalius was made available through his book, *The Fabric of the Human Body* (1543). The illustrations are precise and focused on showing how different parts of the body worked
- Vesalius faced heavy criticism for claiming that Galen was wrong.
- Vesalius' work did spread to England and his book was used to train surgeons in London.
- Vesalius work overturned the reliance on Galen. He also championed the use of dissection and research.

Amboise Pare

- Pare was a French surgeon who published several books about his work.
- Guns were a fairly new invention and surgeons, thinking bullets were poisonous, sealed the wound which burning oil.
- On the battlefield, Pare ran out of hot oil and instead used an alternative ointment made up of rose oil egg white and turpentine. The ointment was a success, his patients were in less pain and their wounds healed quickly. Pare had challenged an accepted practises and proven its success using research and experimentation.
- Pare also promoted the use of ligatures in amputations as an alternative to cauterising the wound. This was using a hot iron to stop the bleeding. Instead he tied ligatures around individual blood vessels. This proved to be very effective. However ligatures could introduce infection into a wound and they took a long time to implement
- Pare also designed false limbs for battlefield victims.
- Pare's works on surgery was widely read by English surgeons and many followed his practises.



William Harvey

- Harvey was a British doctor who worked in hospitals in London
- According to Galen, blood was used up in the body and created in the liver. He said that blood passed from one side of the heart to the other through invisible holes.
- Harvey researched human hearts and experimented by trying to pump liquid the wrong way through valve sin the veins, proving that blood only went one way.
- However Harvey could not explain why the blood only flowed in one direction around the body or how the blood moved from arteries to veins. He also did not publish his finding straight away as many doctors still believed in Galen's theories and the idea of balancing the four humours.
- Harvey's discovery was not immediately useful as doctors could not transfuse blood until 1901 when they knew about blood groups. However many of the treatments provide today could not have been possible with Harvey's discovery.



John Hunter

- John hunter was an English doctor and surgeon. He trained hundreds of other surgeons across England.
- He promoted careful observation an the use of the scientific method in surgeries.
- He also advocated the practise of diverting the blood supply to damaged areas in the limbs to avoid amputation for aneurisms.

Renaissance: Surgery

Read through the information below. Using the words at the bottom on the page fill in the gaps.

Vesalius was a Belgian _____ of surgery who carried out his own _____. During the Renaissance it was rare for doctors to carry out their own dissections as their assistants would get their hands dirty. Vesalius found there were many mistakes made by Galen, such as the fact that the jaw is only made up of one bone. Until this time doctors had believed _____ had given a correct description of anatomy, dissections had been carried out to prove Galen right, not to _____ him. Vesalius wrote his findings into his famous book, *The _____ of the Human Body* (1543). The illustrations are precise and focused on showing how different parts of the body worked. Vesalius was important to surgery as he overturned the reliance on Galen. He also championed the use of dissection and research.

Amboise Pare was a _____ surgeon. During his time as a battlefield surgeon, guns were a fairly new invention and surgeons. Thinking bullets were _____, surgeons sealed the wound which burning oil. On one occasion, Pare ran out of hot oil and instead used an alternative ointment made up of rose oil, egg white and _____. The ointment was a success, his patients were in less pain and their wounds healed quickly. Pare had challenged an accepted practises and proven its success using research and _____. Pare also promoted the use of _____ in amputations as an alternative to cauterising the wound. _____ was using a hot iron to stop the bleeding. Instead he tied ligatures around individual blood vessels. This proved to be very effective. However ligatures could introduce _____ into a wound and they took a long time to implement

According to Galen, blood was used up in the body and created in the and that blood passed from one side of the heart to the other through _____ holes. However, **William Harvey** researched human hearts and experimented by trying to pump liquid the wrong way through _____ in the veins, proving that blood only went one way. He also calculated how much _____ was inside the body. However, Harvey could not explain why the blood only flowed in one direction around the body or how the blood moved from arteries to veins. He also did not publish his findings straight away as many doctors still believed in Galen's theories and the idea of balancing the _____. Many of the treatments provide today could not have been possible with Harvey's discovery.

John Hunter was an English doctor and surgeon. He was responsible for promoting careful _____ an the use of the scientific method in surgeries. He also advocated the practise of diverting the blood supply to damaged areas in the limbs to avoid _____ for aneurisms.

Galen, invisible, experimentation, infection, professor, amputation, dissection, turpentine, four humours, fabric, cauterisation, challenge, French, blood, poisonous, ligatures, valves, observation,

Renaissance: Exam Questions

Explain the significance of the work of William Harvey for the development of surgery. (8 marks)

2. Explain the significance of.....in the development of medicine. (8 marks)

TOP TIPS

- Think about what it was like before
- What was the short term and long term impact
- What was the context of the time (what was happening at this time generally that may have a bearing on your answer.

WRITING FRAME

... means that...

Its discovery was significant because....

It was also significant because....

In the short term, this developed medicine because....

In the long term, this developed medicine because...

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Renaissance: Exam Questions

Compare the black death of the 14th century to the great plague in the seventeenth century. In what ways are they similar? (8 marks)

3. Compare the.....with the.....
In what ways are they similar? Make reference to both in your answer. (8 marks)

In what ways are they similar? Make reference to both in your answer. (8 marks)

TOP TIPS

- Find at least 3 points of comparison
- Think about cause
- Effects
- Attitudes to the event
- Do not write about differences

WRITING FRAME

.....was an important event because....

In addition,was another important event because....

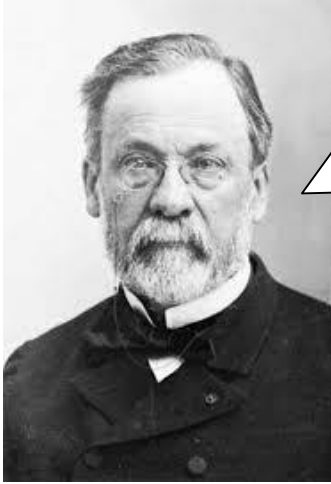
They are similar because.....

Another way they are similar is because....

Finally, they are similar because...

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no text or other markings on the paper.

19th Century: Causes and Cures



I am Louis Pasteur and I discovered (by using a swan-necked flask) that germs cause disease. Before I made this discovery, doctors had noticed bacteria, but they believed it was the disease that caused the bacteria (the so-called theory of 'spontaneous generation') rather than the other way round. One of the spin-offs of my discovery was the pasteurisation of milk, which prevented it from going sour by killing the germs and sealing it from the air.

I am Robert Koch. I developed Pasteur's work further. I have been able to link particular germs to particular diseases. I discovered the germs that cause TB (1882) and cholera (1883/1884). Following this my students went on to find the germs which caused many diseases.



My name is Paul Ehrlich. I am responsible for the first 'magic bullet'. It was called a magic bullet because it targeted the bacteria caused the disease, In 1906 he found the cure for syphilis, it was known as Salvarsan 606 as it was the 606th drug I tried.

Which is which?

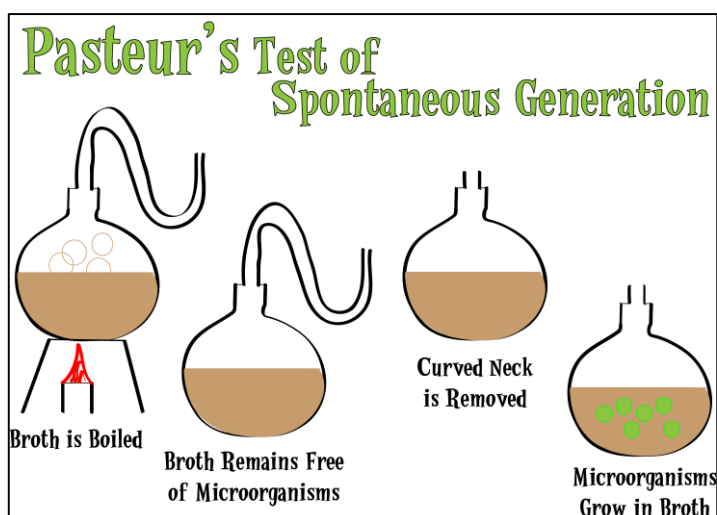
- _____ is the greatest as he developed a new method of killing specific germs without damaging the rest of the body. He developed a treatment that saved millions of lives.
- _____ is the greatest as without his scientific techniques to identify and grow specific bacteria no one else could have targeted them and developed vaccinations to cure people.
- _____ is the greatest as without his discovery of the germ theory no one else would have thought about looking for germs that caused disease and therefore things like vaccinations and magic bullets would not have happened.

Which of the three individuals is the most significant in the development of medicine? Reach a judgement and explain your answer.

19th Century: Causes and Cures

Pasteur's germ theory not only had an impact on disease and infection, but also on surgery and public health. Read through the statements below and colour code into the three categories:

- Disease and infection
 - Surgery
 - Public
- Germ Theory explained how diseases spread and showed how massive epidemics could be stopped.
 - Germ Theory was a massive reason for the 1875 Second Public Health Act as it was clear that poor housing, dirty water encourage germs and spread diseases.
 - These vaccines gradually began to wipe out these killer diseases, especially in the 20th Century when government enacted mass vaccination programs.
 - John Snow had shown Cholera spread through water in 1854 but not how or why.
 - Ever since this a clear understanding of germs has had a big impact on keeping streets clean from sewage, rubbish etc...
 - He used carbolic acid as an antiseptic to soak bandages and then developed a spray to soak the air, surgeons hands and instruments.
 - Koch links particular germs to particular diseases.
 - This then led to aseptic surgery which is where surgeons keep germs away from the operating theatre/patient by using rubber gloves etc.
 - Germs identified as causing disease.
 - 'Microbe hunters' began searching for particular germs e.g. leprosy.
 - Death rates from infection fell massively. Used alongside anaesthetics these antiseptics made surgery much safer.
 - The French and German governments set up institutes for medical research.
 - Knowledge used to spark research into vaccines.
 - Vaccines developed for Chicken Cholera, Anthrax, Rabies, Diphtheria.
 - Without Pasteur's discovery of germs this may have taken a lot longer to develop and many more may have died in surgery.
 - Germ Theory dealt with infection in surgery - before Germ Theory the 'Black period' of surgery saw many patients die from infection.
 - Joseph Lister read Pasteur's work and realised that germs caused infections that killed his patients after surgery.



19th Century: Surgery

There had been attempts to relive pain in the medieval period. The most successful of which had been hashish, mandrake and opium. Although these drugs did alleviate pain, it was difficult to administer the correct dosage. There was alcohol, however this actually makes the heart beat faster and the blood run quicker leading to greater problems for the surgeon,

Humphrey Davy used nitrous oxide or laughing gas an anaesthetic to relieve pain during operations, but it was difficult to control the dosage

Anaesthetics

Robert Liston began to use Ether as an anaesthetic but there were issues with the dosage and one of his patients woke up part way through the operation. Ether was also highly flammable.

Simpson used chloroform as an anaesthetic in 1847. Simpson and his friends were testing a number of substances and found chloroform was an effective anaesthetic as it induced unconsciousness in patients. The drug had to be administered very carefully.

Opposition to Anaesthetics

- Doctors objected to the use of anaesthetics as most were accustomed to operating quickly on a conscious patient.
- There were some in the medical profession that thought that patients should experience pain, especially on the battlefield.
- In the early days of chloroform, some patients died. Doctors needed to administer the correct dosage, which altered depending on the size and weight of a patient.
- There were religious objection to anaesthetics. It was believed that pain in childbirth was god's will as a punishment for Eve's sin.
- There was a great deal of opposition to Lister's work, but when Queen Victoria used chloroform during childbirth use of the drug became much more widespread.



Match up the anaesthetic with the description

Ether		Humphrey Davy published an account of its impact in 1880;
Nitrous Oxide		First used by James Simpson in 1847
Chloroform		An effective anaesthetic used by Liston, but could be very dangerous is administered incorrectly.

19th Century: Surgery

Lister

- He realised operations went well as long as wounds were free from infection.
- Lister had seen the work of Pasteur on germ theory which explained the problems of infection he was having.
- Lister experimented with carbolic acid, and rather than amputating a boy's broken leg, he set the fracture and placed bandages soaked with carbolic acid on the wounds. The boy made a full recovery.
- He also sprayed surgical instruments, the hands of the surgeons and the wound.
- Lister did, however, receive significant opposition to the use of carbolic acid.

Colour code the statements below into the different factors:
Religion, opposition to the individual, scientific, attitudes to conservatism

Lister's carbolic spray soaked the operating theatre irritating the patients and the surgeons' skin. It was expensive and slowed down the operation when speed was still seen as important. Operations became hard work and less pleasant for the surgeons.	Pasteur's ideas had spread very slowly. Even trained surgeons found it difficult to accept that there were tiny microbes all around which caused disease. One surgeon regularly joked with his assistants that they should shut the door of the operating theatre in case one of Mr Lister's microbes flew in.
For many centuries surgeons had accepted that many of their patients would die. When Lister said he achieved high survival rates, their first reaction was disbelief. Then defensive, as if Lister was criticising them.	Due to the continued problem of blood loss, many surgeons still saw speed as essential. Lister's antiseptic methods (was hands, carbolic spray and antiseptic ligatures) slowed down operations.
Lister was not a show man like Pasteur. He appeared cold, arrogant and aloof and was sometimes critical of other surgeons.	When some surgeons did copy Lister's methods, they did not achieve the same results. This was usually because they were less systematic. They criticised Lister for their failures. Some surgeons believed the antiseptic spray was working against the immune system.
Lister was always changing his techniques. He was attempting to find a substance that would work like carbolic acid but would not corrode the skin. His critics accused him of changing his methods because they did not work.	Many surgeons believed miasma and spontaneous generation caused wounds to become infected. It took a long time for Pasteur's germ theory to become accepted.

Aseptic surgery

- In 1878 Robert Koch discovered that bacteria in the blood caused septicaemia which led to greater support for the use of antiseptic.
- Koch introduced 'aseptic surgery' after discovering that hot steam killed more germs than carbolic acid. This discovery ensured that all germs were removed from the operating theatre and as a result, strict hygiene soon became part of the operating theatre routine.
- Bandages, instruments and clothes were all steam-sterilised to remove dirt and germs.
- More ambitious operations could now be attempted the risk of infection had lessened.

19th Century: Public Health

Public Health after 1750

- 1750-1900 saw increase in the urban population caused new problems for the Government when considering Public Health.
- Sanitation was poor and inefficient. Toilet facilities were crude in these conditions, water was often contaminated and unfit to drink and so it comes as no surprise that death and disease were commonplace.
- Running water was a luxury the poor could not afford. They would have to take water from the communal pump in the street. The flush toilet was patented in 1819, but was not mass produced until the 1880's.

The Great Stink

- In the summer of 1858, a heatwave caused the filthy River Thames to smell worse than ever. The smell was so bad that the politicians in the houses of parliament (which is situated on the Thames) demanded to met somewhere else.
- This forced the MPS to act on a clean up of the city.

Using the image below, identify all of the public health problems of the 19th century:

-
-
-
-
-
-
-
-
-



A COURT FOR KING CHOLERA.

19th Century: Public Health

Individuals

Cholera and John Snow

- Cholera new and deadly disease, painful and spread rapidly- epidemic hit 1831- 1832 and terrified Britain. There were further epidemics hit in 1848 and 1854
- Snow was a London doctor who mapped an area where cholera victims lived and saw a cluster around water pump at Broad Street
- Removed handle and saw deaths drop dramatically
- Many refused to accept his findings that dirty water source of infection because had no proof- no Germ theory yet

Edwin Chadwick

- 1842 published report on sanitary conditions of the Labouring population that proved poor people living in towns in overcrowded and unhygienic conditions could expect low life expectancy and illness
- Solution was for government to provide clean water, drains and sewers and to appoint medical officers to ensure measures carried out- paid through raising taxes to fund this.
- Recommendations formed basis of 1848 Public Health Act but not compulsory and was severe opposition to it.
- Opposition to Chadwick: Rich taxpayers objected to paying for improvements designed for poor, local governments resented central government telling them what to do, belief of laissez faire- non government intervention

Joseph Bazalgette and Great Stink of 1858

- Hot summer led to Thames stinking as water levels dropped upset MPs as Houses of Parliament next to river bank and realised need further public health reforms
- Got Bazalgette to design and build a new sewage system, 1000 miles of innovative engineering including use of large oval tunnels.
- He ensured that the tides of Thames carried waste away from town to pumping stations that carried it out to sea.
- Original design still forms part of London's sewage system today.

Octavia Hill

- 1865 bought slum housing and made them into healthy homes for working people
- Was a philanthropist whose good works led to Artisan Dwellings Act of 1875 which forced local councils to clear away slums and build better quality housing for the poor.

Government

1848 Public Health Act

- Set up national boards of health for 5 years
- Medical officers of health and local boards set up to supervise
- Not compulsory many councils ignored it.

1867 Reform Act

- In 1867 working class men are given the right to vote. These were the same people who had been suffering most from poor conditions. Soon political parties realised that if they wanted the working class to vote for them, they would have to promise change in relation to public health.
- This is seen as the end of the laissez faire attitude displayed by the government.

1875 Public health Act

- This act made it compulsory to:
 - Provide systems of water, drainage and sewage
 - Appoint a medical officer for health to enforce rules
 - Improved quality of housing and inspectors to check provided public parks to increase exercise
 - Street lighting to prevent accidents

Factors that led to improvements in public health

- Knowledge - Germ theory published in 1861- accepted by 1865 gave proof to Snow, Chadwick and Hills ideas. Therefore more people, willing to pay higher taxes to fund necessary reforms
- Pioneering local councils - Birmingham and Leeds started to clean up streets in 1860's and 1870's before legislation forced them to- creative accounting saw Birmingham pay for improvements in lighting and pavements through profits from local gas corporation
- Technology - improvements in engineering, building and construction made possible construction of sewers and public toilets
- Government - 1867 electoral reform gave working class men the vote for first time - they put pressure on governments to do something.- shift in attitudes away from laissez faire

19th Century: Public Health

Who am I?

Match up the individual with their contribution to 19th Century public health

I am responsible for designing London's sewers after the Great Stink of 1848. Some of my designs remain functional in London today

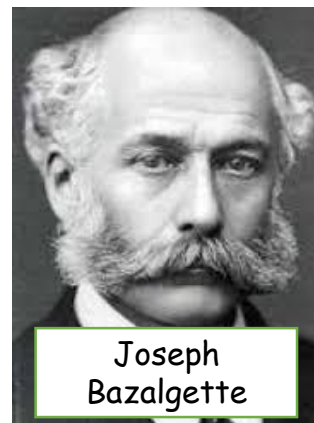
I investigated the slum housing in London. I campaigned for changes to housing conditions and the Artisan Dwelling Act was passed in 1865.

In 1842, I published report on sanitary conditions of the Labouring population that proved poor people living in towns in overcrowded and unhygienic conditions could expect low life expectancy and illness. I am responsible for the 1848 Public Health Act.

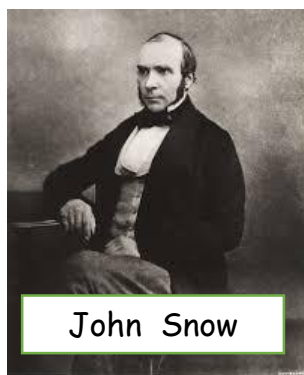
I was a London doctor who mapped an area where cholera victims lived and saw a cluster around water pump at Broad Street. I had the pump handle removed and the deaths dropped dramatically. Many refused to accept my findings that dirty water was a source of infection because I had no proof.



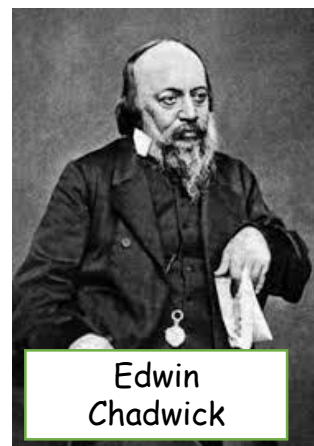
Octavia Hill



Joseph Bazalgette



John Snow



Edwin Chadwick

Read the information on the government response to public health.

Fill in blanks:

The ____ Public Health Act did provide some benefits to public health as it established national boards of health for ____ with medical officers of health and local boards set up to supervise. However, this was not that successful as it was not ____ and many ____ ignored it.

Things did start to change with the 1867 ____ as working class men are given the right to _____. These were the same people who had been suffering most from poor conditions. Soon political parties realised that if they wanted the working class to vote for them, they would have to promise change in relation to public health. This is seen as the end of the _____ attitude displayed by the government.

A compulsory public act was passed in ____ Public Health Act. The Act ensured there were systems of _____, drainage and sewage. There were also _____ for health appointed to enforce rules

5 years, 1875, water, medical officers, vote, laissez faire, compulsory, councils, reform act, 1848

19th Century Exam Questions

How useful is source A for understanding 19th Century public health? (8 marks)

Source A
Excerpts of conclusions of Chadwick's 1842 report on the 'Sanitary conditions of the Labouring Population of Great Britain':

Source A
Excerpts of conclusions of Chadwick's 1842 report on the 'Sanitary conditions of the Labouring Population of Great Britain':

Disease is caused by bad air and these diseases are common all over the country.

The bad air is caused by rotting animals and vegetables, by damp and filth, and by overcrowded houses. When these things are improved, the death rate goes down.

A medical officer should be appointed to take charge in each district.

More people are killed by filth and bad ventilation each year than are killed by wars.

People cannot develop clean habits until they have clean water

The poor cost too much; the rich pay to feed and clothe orphans. Money would be saved if fewer parents died of disease. A healthier workforce would work harder too.

The poor conditions produce a population that doesn't live long, is always short of money and is brutal and rough.

1. How useful is Source A for a historian studying....(8 marks)

TOP TIPS!

- Say if it is useful or not based on content
- Say if it is useful or not based on source provenance
- Say why it may not be useful

WRITING FRAME

The source tells us...

This is useful to a historian because....

I know that....

The source does not tell us however that....

The provenance of the source is useful as it tells us that....

19th Century: Exam Questions

**Explain the significance Lister's work for the development of medicine.
(8 marks)**

2. Explain the significance of....in the development of medicine. (8 marks)

TOP TIPS

- Think about what it was like before
- What was the short term and long term impact
- What was the context of the time (what was happening at this time generally that may have a bearing on your answer.

WRITING FRAME

.... means that....

Its discovery was significant because....

It was also significant because....

In the short term, this developed medicine because....

In the long term, this developed medicine because...

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19th Century: Exam Questions

Compare a Medieval town with early nineteenth century London. In what ways are they similar? (8 marks)

3. Compare the.....with the.....
In what ways are they similar? Make reference to both in your answer. (8 marks)

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In what ways are they similar? Make reference to both in your answer. (8 marks)

TOP TIPS

- Find at least 3 points of comparison
- Think about cause
- Effects
- Attitudes to the event
- Do not write about differences

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WRITING FRAME

.....was an important event because....

In addition,was another important event because....

They are similar because.....

Another way they are similar is because....

Finally, they are similar because...

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20th Century: Treatments

Penicillin: Discovery

- It is a mould, and also an antibiotic. An antibiotic is a drug made from bacteria that kill other bacteria and so cure an infection or an illness.
- In 1928, bacteriologist Alexander Fleming made a chance discovery from an already discarded, contaminated Petri dish. The mould that had contaminated the experiment turned out to contain a powerful antibiotic, penicillin. However, though Fleming was credited with the discovery, it was over a decade before someone else turned penicillin into the miracle drug for the 20th century.

Penicillin: Development

- Florey and Chain applied for money from the British government to develop penicillin. They received £25. unfortunately Britain was involved in WWII and could spare little for academic research. However, they managed to extract enough to successfully test in on 8 mice.
- They then grew enough to test the antibiotic on a human. Albert Alexander had contracted a nasty infection an the penicillin had started to clear the infection, however after 5 days, the antibiotic ran out and the patient died.
- The American government saw the potential benefits of penicillin when they became involved in the war. Florey and Chain received funding for the further development of the drug and they agreed to pay several huge chemical companies to create the drug on a mass scale. By the end of the war, 250,000 soldier had been saved because of penicillin.
- The need to produce the drug in a large scale led to the development of the pharmaceutical industry.

DNA

- It took a series of discoveries over a long period to discover DNA. In the 1800s, scientists knew that DNA existed and that somehow it controlled what we are like. However, they did not know how it did this.
- The first step came in 1953, when two scientists in Cambridge, Francis Crick and James Watson, discovered the structure of DNA. They proved that this DNA structure was present in every human cell and showed how it passed on information from parents to children. This was the launch pad for further discoveries.
- The complete set of genes in a living person is called a genome. In 1986 the human genome project began to identify the exact purpose of each of the genes in the human body, compiling a complete map of human DNA. The task was completed in 2001, fifteen years later.
- This research was so complicated it needed teams of scientists in 18 countries to take part. Each team worked on different parts of human DNA. This work could not have been done without computers. The information carried in human DNA would fill over 80,000 books.

Complete the table below:

Event	Factors involved in the Development
Penicillin: Discovery	
Penicillin: Development	
DNA	Sci and Tech: ICT allowed for the digital imaging of DNA and the communication of 18 countries in the Human Genome Project.

20th Century: Surgery

WWI

Blood Transfusions

- In 1901 blood groups were discovered by Karl Landsteiner and blood transfusions could be done successfully. However it wasn't possible to store blood for any length of time. During the First World War scientists discovered how to store blood. Albert Hustin found that adding sodium citrate and glucose stopped the blood from clotting. It could then be taken to the field hospitals close to the front line.

Plastic Surgery

- There were also developments in skin grafts and in plastic surgery. Harold Gillies set up a special unit to graft skin and treat men suffering from severe facial wounds. Gillies and his colleagues had treated over 5000 service men by 1921. He wrote a book in 1920 called 'surgery of the face'.

X-Rays

- X-Rays were invented in 1895. However, it was during the First World War that X-rays become really important. Mobile x ray machines were used near battlefields to find out exactly where in the wounded soldier's body the bullets or pieces of shrapnel had lodged without having to cut him open.

Fighting Infection

- There was a significant problem of gas gangrene. Eventually discovered that if a surgeon cuts away infected tissue and soaked the wound with saline solution this prevented infection. However limited as infection still rife-needed to operate quickly so back to amputation.

Broken Bones

- New techniques were development during WWI to repair broken bones. For example the Army Leg Sprint was developed which elevated and extended the broken leg 'in traction'. This helped the bones knit together more securely. The splint is still used today.

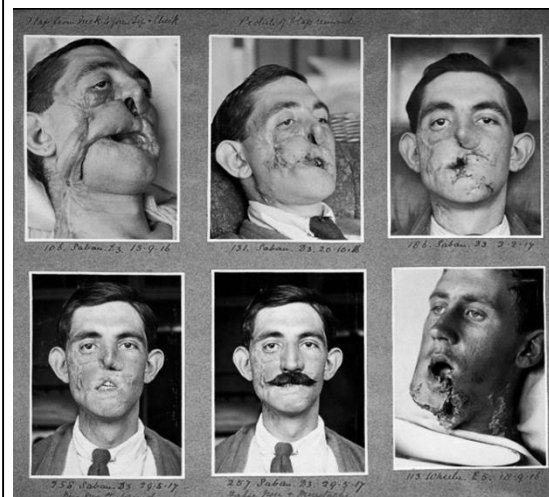
Other Developments

- Bullets and shrapnel caused devastating injuries-gave opportunities to experiment with new techniques
- Broken bones commonplace-new techniques to repair broken bones
- Surgery of eye, ear, nose and throat improved rapidly
- Brain surgery advanced
- Surgeons work together in war rather than in competition
- Surgeons who learnt their skills on the battlefield went home and became specialist surgeons
- HUGE problem with infection led to research better ways to fight infection

WWII

The Guinea Pig Club

- McIndoe was Gillies cousin and he built on his work.
- Terrible injuries caused in WWII due to aviation fuel burns and tank fires.
- McIndoe not only worked on the physical appearance of his patients but also their emotional well being
- He organised trips and events to improve patient confidence - the patients formed the guinea pig club which supported each other socially and financially
- Archibald McIndoe used plastic surgery and psychology to treat his patients



20th Century: Surgery

Read the notes on the previous page. Identify if the statements are true or false.

Statement	True or False?	Explanation
Blood groups were discovered by Karl Landsteiner in 1901 and blood transfusions could be done successfully		
During WWI, Albert Hustin found that adding sodium citrate and glucose stopped the blood from clotting.		
Harold Gillies was responsible for the development of sin grafts in WWII.		
X rays were invented during the First World War.		
Surgeons were bale ti deal with infectiosn successfully during WW1.		
During the First World War, the Army Leg Sprint was developed which elevated and extended the broken leg 'in traction'.		
Archibald McIndoe used a combination of plastic surgery and psychology to aid the recovery of his patients during WWII.		

Science and Technology or War>?

Find evidence to suggest that the two factors contributed to the development of surgery in the 20th Century

Science and Technology	War

20th Century: Public Health

Public Health since 1900

- Governments had accepted the responsibility to maintain public health. Laissez faire attitudes had disappeared. Many improvements had been made as a result of the 1875 Public Health Act in improving the environment but there were still some problems remaining.
- Problems**
- thousands of people lived in poverty
 - lack of money for decent food
 - lack of money for decent homes
 - high infant mortality rate
 - people were generally unhealthy
 - 3 factors saw the need for further change
 - Boer war 1899-1902 saw 40% of volunteers medically unfit to serve
 - Individuals like Rowntree and Booth who changed people's attitudes towards the poor by publishing reports and surveys showing true causes of poverty were sickness, long term unemployment and death rather than laziness.
 - Recognition by politicians like Lloyd George and Winston Churchill that for Britain to compete economically with foreign countries like Germany she needed a healthier work force and measures like sickness benefits and old age pensions.

Liberal Social Reforms

- 1906 - Free School Meals: local councils had to provide school children with a meal everyday.
- 1907 - School Medical Inspections: Children were examined and provided with treatment
- 1908 - Children's Charter: Children were protected persons and parents could be convicted of neglect.
- 1908 - Old age pensions introduced
- 1909 - Labour Exchanges (job centres) were established
- 1911 - National Insurance

Beveridge Report

- Towards the end of WWII, Sir William Beveridge wrote report about the state of Britain's health. In the 1942 he published his findings, saying that people all over the country had the right to be free of the '5 giants' that often ruined lives: disease, want, squalor, ignorance and idleness.
- The report suggested ways to improve the quality of life and said that the government should take charge of social security from 'the cradle to the grave'.
- The Labour party promised to follow Beveridge's advice after the war and won the election

Liberal Reforms: Using the information above and your own notes, explain what each of the reforms were and how significant the development was in improving public health

Reform	Purpose (what did it do? Who did it help?)	Significance
1906 - Free School Meals		
1907 - School Medical Inspections		
1908 - Children's Charter		
1909 - Labour Exchanges		
1911 - National Insurance		

20th Century: Public Health (NHS)

Creation of the NHS

- The Labour government followed Beveridge's advice and established the National Health Service
- Aneurin Bevan was the Minister of Health appointed by the labour government. He was responsible for creating the NHS.
- When the NHS was set up in 1948, 8 million people had never been to a doctor. Mostly because they could not afford to.
- The NHS provided free medical attention for all.
- Hospitals were now under national ownership with government funded equipment, drugs and research
- Doctors paid by government but could charge for private work
- The NHS was an immediate success.

Limitations to the NHS

- The NHS has been expensive. All workers had to pay for the NHS through taxation.
- People believed governments were taking away individual responsibility - the 'nanny state'
- Doctors didn't like NHS because they didn't want government interference in their jobs and risked losing money.
- Huge range of free treatments NHS offered at the start was far too costly and led to introductions of prescription charges for glasses and false teeth.
- Now some services are oversubscribed - takes long time to access therefore are prioritised or not offered universally e.g. fertility treatments

Long term success of the NHS

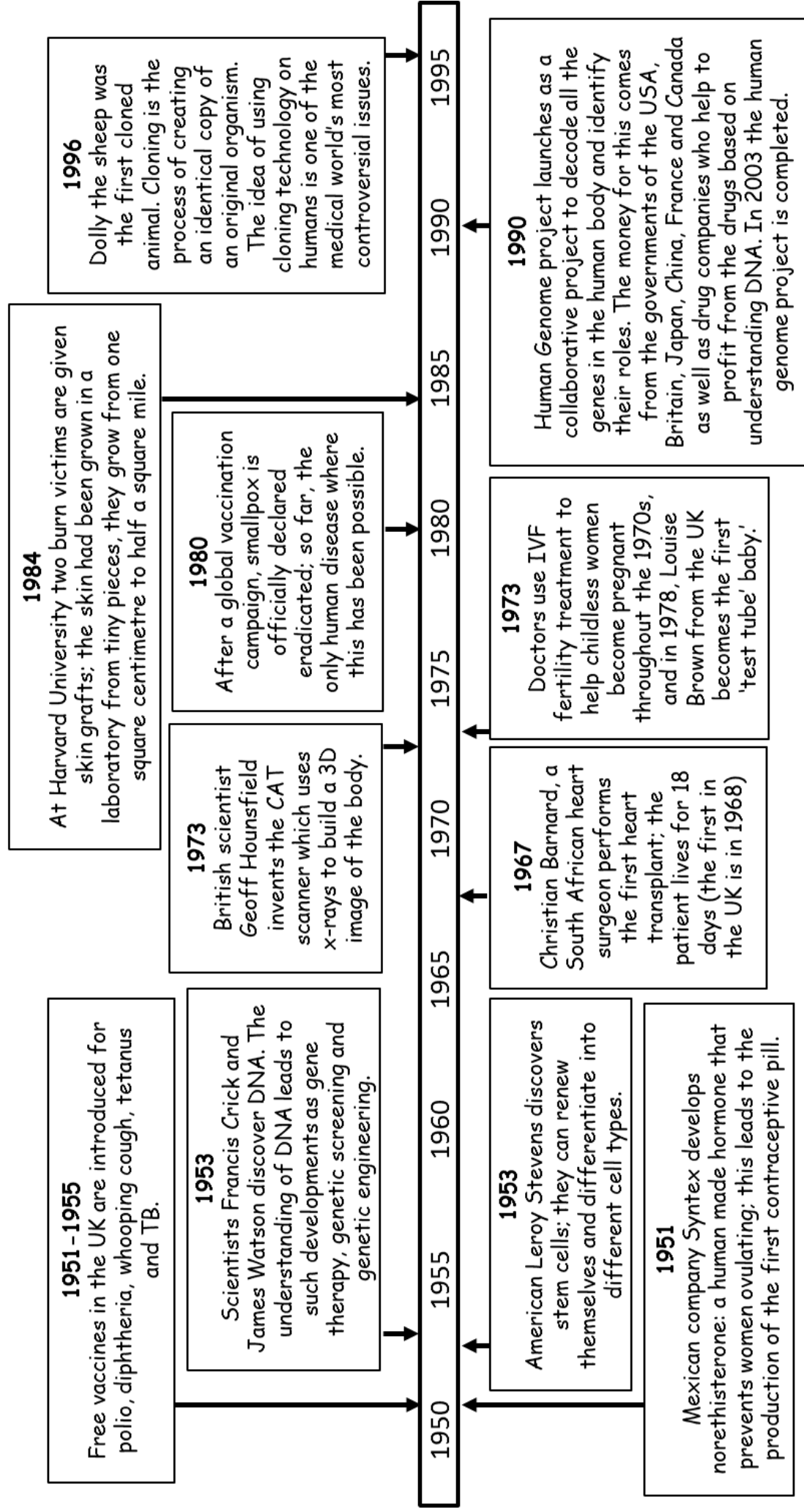
- New technology has enabled complicated surgery to be performed, more expensive drugs and treatments to be carried out e.g. transplants all which cost money and raise ethical questions e.g. should you give a new liver to someone who has abused their old one by being an alcoholic?

What are the similarities between 19th century public health and 20th century public health?

Complete the table below.

Similarities	Differences

20th Century: Developments



- On your timeline, use three colour to identify
 - Boxes relating to the body
 - Boxes relating to surgery
 - Boxes related to disease and treatment
- Identify the three most important developments in medicine on the timeline. Explain your rationale.

20th Century: Exam Questions

Explain the significance of the Liberal Social Reforms for the prevention of disease. (8 marks)

2. Explain the significance of....in the development of medicine. (8 marks)

TOP TIPS

- Think about what it was like before
- What was the short term and long term impact
- What was the context of the time (what was happening at this time generally that may have a bearing on your answer.

WRITING FRAME

... means that...

Its discovery was significant because....

It was also significant because....

In the short term, this developed medicine because....

In the long term, this developed medicine because...

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20th Century: Exam Questions

Explain the significance of the discovery of penicillin on the development of medicine. (8 marks)

2. Explain the significance of....in the development of medicine. (8 marks)

TOP TIPS

- Think about what it was like before
- What was the short term and long term impact
- What was the context of the time (what was happening at this time generally that may have a bearing on your answer.

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Summary Activities

Using the events below, complete the table. State why these events were significant in the development of public health

- a) Reform Act gave working class men the vote
- b) Boer war in south Africa began
- c) National Insurance Act gave some workers free medical treatment and sick pay
- d) First Public Health Act
- e) National health service Set up
- f) First cholera epidemic
- g) First old age pensions act introduced
- h) Artisans dwellings Act
- i) Free school meals for some children introduced
- j) Beveridge Report published.

DATE	EVENT	SIGNIFICANCE IN THE DEVELOPMENT OF PUBLIC HEALTH
1833		
1848		
1867		
1875		
1899		
1906		
1908		
1911		
1942		
1948		

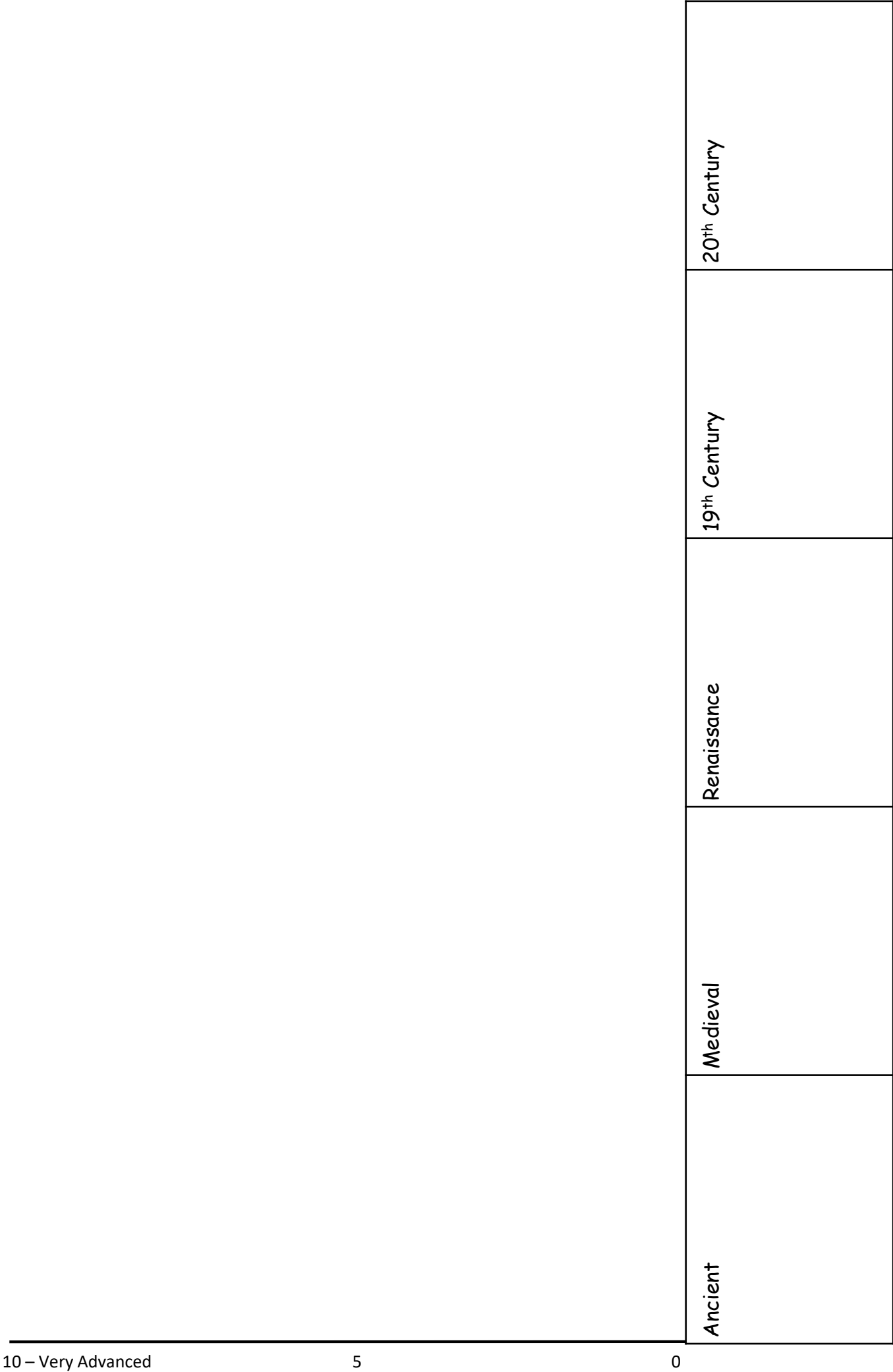
How would a germ feel? Using the three emojis, decide how a germ would feel in each of the time periods.



When?	How would a germ feel?	Why?
Prehistoric		
Ancient Rome		
Medieval		
Renaissance		
19 th Century		
20 th Century		

Summary Activities: Surgery

Consider the understanding of surgery and anatomy over the period studied. Plot how advanced you think their understanding was at each stage. Use the space below the graph to explain your reasoning using specific examples.



Summary Activities: Factors

Complete the table below. Use two different colours - one for factors helping the development of medicine, and a different one for hindrances caused by factors.
Try to include an example from each time period.

	Disease and Infection	Surgery	Public Health
Science and Technology			
Religion			
War			
Chance			
Individual Genius			
Government			
Attitudes			

Summary Activities: Key People

Key Individual	Role (date/significance)	Factors affecting individual
Hippocrates		
Galen		
John of Ardenne		
Andreas Vesalius		
William Harvey		
Amboise Pare		
John Hunter		
John Snow		
Joseph Bazalgette		

Summary Activities: Key People

Key Individual	Role (date/significance)	Factors affecting individual
Octavia Hill		
Edwin Chadwick		
Harold Gillies		
Archibald McIndoe		
William Beveridge		
Aneurin Bevan		
Alexander Fleming		
Florey and Chain		
Crick and Watson		

Summary Activities: Key Terms

Key Term	Definition
Anaesthetic	
Antiseptic	
Asclepion	
Aseptic	
Cauterisation	
Doctrine of Signatures	
Endemic	
Epidemic	
Hereditary	
Hippocratic Oath	
Immune	
Inoculation	
Laissez-faire	
ligature	
Purgatory	
Sterile	
Vaccination	
Welfare state	

Summary Exam Questions

Has the role of the individual been the man factor in the development of medicine in Britain since the medieval times? Explain your answer with reference to the role of individuals and other factors. (16 marks & 4 SPaG)

4. Has _____ been the main factor in the development of _____

Explain your answer with reference to _____and other factors(16 +4 spag)

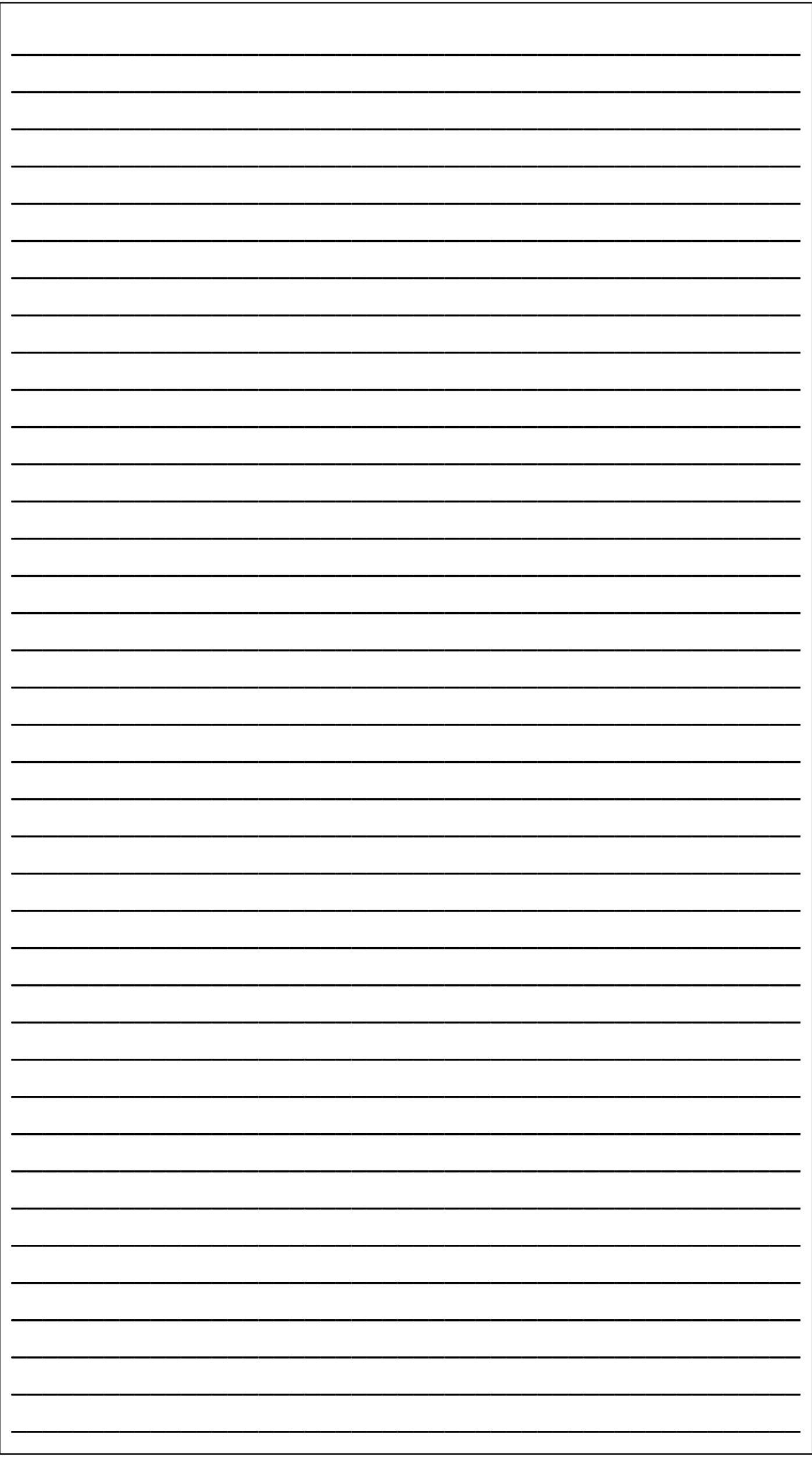
TOP TIPS

- Find evidence and examples from at least 2 different time periods
- Explain the factor given in the title but also look at 2 other factors of importance
- Use Point, evidence and explain each time .
- Try and link factors if you can
- Place in order of importance and say why.

WRITING FRAME

There have been many factors that have helped in the development of medicine in Britain. Religion,....., and have each contributed to medicine development and progression.

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Summary Exam Questions

Has the role of war been the man factor in the development of surgery in Britain since the medieval times? Explain your answer with reference to the role of individuals and other factors. (16 marks & 4 SPaG)

4. Has _____ been the main factor in the development of _____

Explain your answer with reference to _____ and other factors(16 +4 spag)

TOP TIPS

- Find evidence and examples from at least 2 different time periods
- Explain the factor given in the title but also look at 2 other factors of importance
- Use Point, evidence and explain each time .
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