



History Revision Booklet

Medicine in Britain and The Western Front

Name: _____

Class: _____



MEDICINE IN BRITAIN & WESTERN FRONT TIMELINE

**Ancient Greece & Rome -
Hippocrates & Galen
influencing natural medicine**



1300s

**1348 - Arrival of
Black Death in
Britain**



1400s

**c1439 - Invention of printing
press**

1500s

**1543 - Vesalius' The Fabric of
the Human Body published**

**1536-40 - Dissolution of
monasteries**



1600s

**1628 - Publication of Harvey's
An Anatomical Account of the
Motion of the Heart and Blood**

1660 - Royal Society established

1665 - The Great Plague



**1676 - Thomas
Sydenham's
Observations
Medicae
published**



1700s

**1796-98 - Jenner's development
of smallpox vaccine**

1800s

**1854 - John Snow discovered cholera
was being spread through water pump**

**1847 - Simpson discovered
chloroform as anesthetic**

**1859 - Florence Nightingale's
Notes on Nursing Published**

**1857 - Mary Seacole published 'The
Wonderful Adventures of Mrs
Seacole in Many Lands'**



**1861 - Pasteur's
discovery of Germ
Theory**

**1860 - Opening of
Florence Nightingale's
School of Nursing**



**1866 - Lister began
use of carbolic acid**

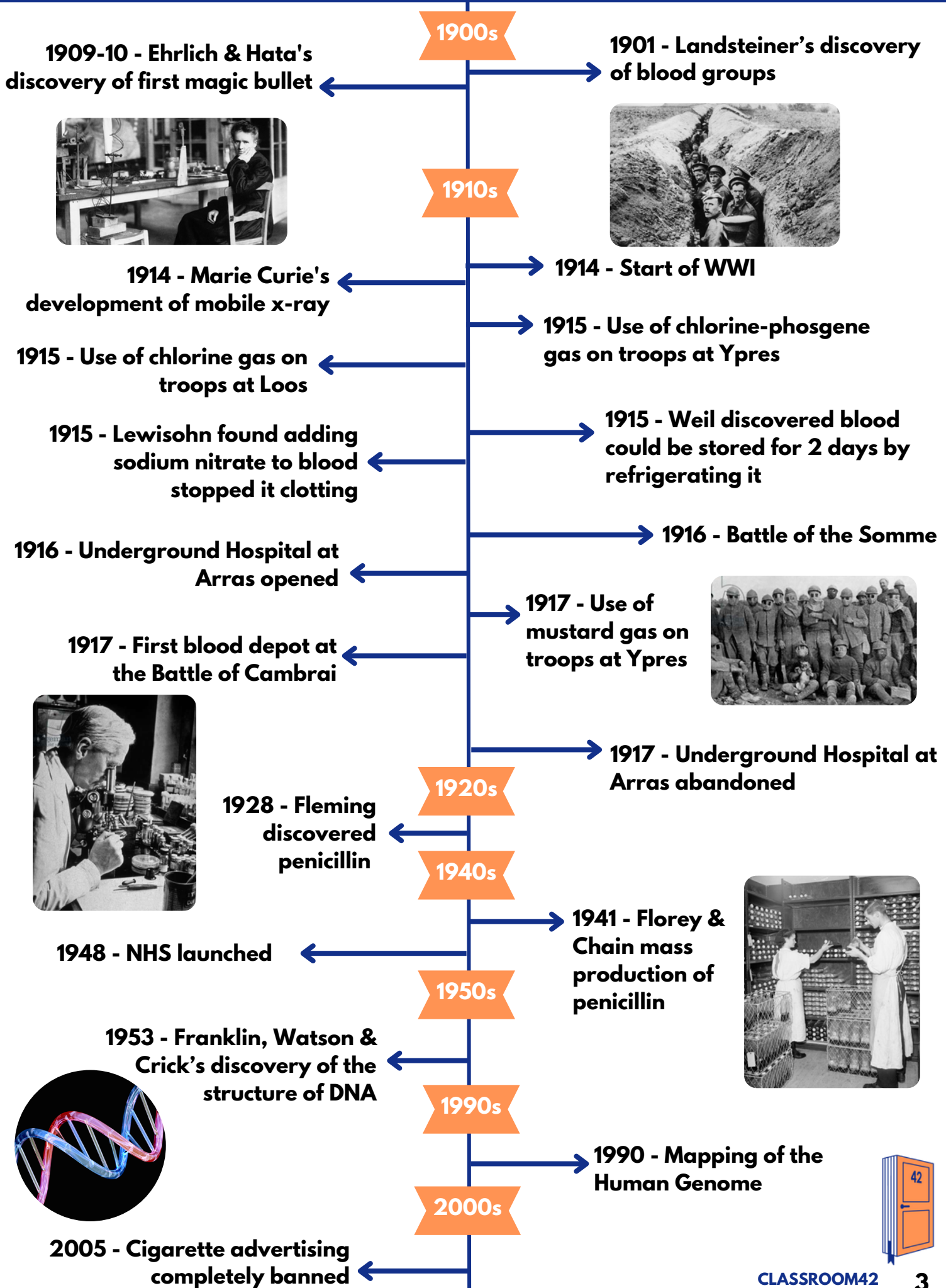
1875 Second Public Health Act

**1876 - Koch discovered
bacteria that causes
anthrax**

**1895 - Röntgen's discovery of x-
rays**



MEDICINE IN BRITAIN & WESTERN FRONT TIMELINE



Physicians → Trained at universities in Hippocrates, Galen and Arab medical writers (e.g., Rhazes), fewer than 100 in England in 1300 and charged high fees

Barber Surgeons → Not trained, learned through practice and carried out bloodletting and amputations and also cut hair

Apothecaries → Sold herbal remedies - cheaper than doctors

Hospitals → Ran by monasteries, the most ill were not admitted due to fear of disease spreading



Born in 460BC in Ancient Greece



Focused on natural causes

Hippocrates

Theory of the Four Humours
 • Black Bile
 • Yellow Bile
 • Blood
 • Phlegm

Put forward the idea of clinical observation

Patient was ill if humours out of balance - to be cured must restore balance

- **Purging** - Swallowing herbs and fat to make patient sick or taking a laxative to empty bowels
- **Blood-Letting** - Done by a surgeon who drew blood out often with leeches
- **Zodiac Charts** - It was believed the body was linked to the planets and zodiac charts showed doctors when to avoid treating each part of body

MEDICINE IN BRITAIN c1250- c1500



Doctor in Ancient Rome

Built upon Hippocrates' Theory of the Four Humours

Galen

Theory of Opposites - Patient must be treated with something opposite to restore balance

Not allowed to dissect humans so difficult to disprove him

Very influential ideas as supported by Church

Herbal Remedies
 Many remedies did actually help the sick, such as honey and plantain used in cuts which help fight infection



- The Black Death**
- Reached England in 1348
 - Spread via rats' fleas, however no one knew this
 - Believed to be a punishment from God, so people would practice self-flagellation
 - Some thought it had an astronomical cause
 - Others thought it was caused by miasma - bad air

Sufferers of the Black Death had:

- Fever
- Headache
- Vomiting
- Buboes

Disease developed very quickly



Black Death killed over **20 million people** in Europe, which was 1/3 of population



Medicine in Britain c1250-c1500

Quiz Questions

Take 5 minutes to study the Cheat Sheet on this topic, then see how many questions you can get right without looking!



1. Hippocrates' Four Humours were....

2. What fraction of Europe's population were killed by the black death?

3. What theory did Galen propose, building on Hippocrates ideas?

4. When did the black Death reach England?

5. What was the belief that disease spread through bad air?

6. What kind of surgeons were untrained and carried out amputations, as well as cutting hair?

7. What did apothecaries sell?

8. What was the practice of getting patients to swallow herbs and fat to make them sick?

9. Who ran hospitals in c1250-c1500?

10. Give one symptom of the black death:

/10

- Herbal remedies were still popular, many were written in a book called **The Complete Herbal**
- Healers had more access to travel to access ingredients such as rhubarb and tobacco from Asia and America
- Hospitals were run by monasteries so closed when Henry VIII dissolved them in the 1530s
- Hospitals were then run by physicians rather than monks and focused on treatment

Royal Society

Founded in 1660 and sponsored scientists to study physics, astronomy, botany and medicine

Printing Press invented in c1439 - scientists could publish their discoveries

- Paracelsus - Swiss doctor in early 1500s
- Criticised Theory of Four Humours and argued illness was caused and should be treated by chemicals
- Ideas were rejected



Catholic Church forbade human dissection

A judge allowed Vesalius to dissect executed criminals

Vesalius

Vesalius used evidence to disprove Galen's theories e.g. that the jawbone was made of two bones as this was true for the animals he dissected

Demonstrated importance of anatomical knowledge

In 1543 Vesalius published 'The Fabric of the Human Body'



MEDICINE IN BRITAIN c1500- c1700

Thomas Sydenham -

English doctor in late 1600s
Believed observation was essential and wrote book *Observationes Medicae* which described how to diagnose disease



Great Plague of 1665

- Cause of spread was still not understood
- Approx. 75,000 people died from the Great Plague in London
- Miasma still popular belief
- Stray animals were killed but this made plague spread faster as cats killed rats

Book 'An Anatomical Account of the Motion of the Heart and Blood' 1628 allowed ideas to spread

English doctor born in 1578

Carried out dissections on animals and humans

Challenged Galen's idea that blood was produced in liver and absorbed by body

Harvey

Ideas not immediately accepted

Proved heart acted like a pump and blood moved in a one way system around body



Medicine in Britain c1500-c1700

Quiz Questions

Take 5 minutes to study the Cheat Sheet on this topic, then see how many questions you can get right without looking!



1. When was the Royal Society founded?

2. Who ran hospitals after 1530s?

3. Name one aspect of the heart that William Harvey proved.

4. Approximately how many people died from the Great Plague in London?

5. What was invented in c1439 that helped medicine develop?

6. What book did Vesalius publish in 1543?

7. True or False? Vesalius used animal dissection to disprove some of Galen's theories.

8. Which doctor wrote the book 'Observationes Medicae'?

9. When did Harvey publish his book 'An Anatomical Account of the Motion of the Heart and Blood'?

10. Which Swiss doctor argued that illness was caused by chemicals and should be treated with chemicals in 1500s?



- In **1842** **Chadwick** compiled a report on living conditions of poor citizens
- Argued there should be organised drainage and refuse collection and clean water
- **1848** outbreak of cholera pressured government to pass **Public Health Act** - but was not compulsory
- **Second Public Health Act 1875** - forced authorities to provide clean water and sewerage systems

Published Germ Theory in 1861 but spontaneous generation belief still popular



French chemist and microbiologist in mid-late 1800s



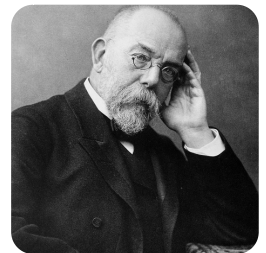
Louis Pasteur

Discovered that bacteria could be killed with heat - **pasteurisation**

In 1879 discovered exposing the germ that cause chicken cholera to air it weakened and injecting this weakened version prevented chickens catching the disease - **vaccine**

Robert Koch

- German doctor and microbiologist in late 1800s
- Applied Germ Theory to prove how bacteria caused disease and identified bacteria that caused anthrax, TB and cholera
- Found a way of isolating bacteria making it easier for future scientists
- Discovered using dyes to stain microbes



In 1847 Simpson first used **chloroform** successfully and was used for childbirth and operations



MEDICINE IN BRITAIN c1700- c1900

Mary Seacole

- In **1854** she travelled to England and asked to be sent to Crimea to care for soldiers but was refused
- Funded her own trip and established the **British Hotel** to provide care for soldiers
- In 1857 published 'The Wonderful Adventures of Mrs Seacole in Many Lands'



John Snow

Published 'On the Mode of Communication of Cholera' 1849
Plotted Cholera outbreak in 1854 in Soho
Discovered a **water pump** was cause of spread, when pump was removed spread reduced
However, could not explain why cholera was waterborne

Jenner heard milkmaids would not catch smallpox, but a milder form of cowpox

Very influential - Napoleon had French army vaccinated by 1805

Edward Jenner



In 1796, Jenner injected James Phipps with pus from a milkmaid's sores, then smallpox - Phipps developed cowpox but not smallpox

Florence Nightingale

- In **1854** during the Crimean War she went to Turkey and cared for wounded soldiers
- She significantly **improved hygiene** in the hospital e.g., washing bedding
- She also suggested opening the windows to circulate air and better quality food
- In 1859 wrote 'Notes on Nursing' which was a bestseller



Medicine in Britain c1700-c1900

Quiz Questions

Take 5 minutes to study the Cheat Sheet on this topic, then see how many questions you can get right without looking!



1. Who published Germ Theory in 1861?

2. Who applied Germ Theory and identified the bacteria that causes TB, anthrax and cholera?

3. What was successfully used as an anesthetic in 1847 for childbirth and operations?

4. Who first used the anesthetic mentioned above?

5. What did John Snow discover was the cause of a major cholera outbreak in 1854?

6. Which disease did Jenner create a vaccine for in 1796?

7. What was the name of the child Jenner successfully tested his vaccine on?

8. Name one improvement Florence Nightingale suggested in hospitals during the Crimean War:

9. What was the name of the establishment Mary Seacole opened to help soldiers during the Crimean War?

10. When was the Second Public Health Act that forced authorities to provide clean water and sewerage systems?

/10

People better understood how lifestyle can cause disease:

- Smoking
- Poor diet
- Alcohol
- Pollution
- Stress

Franklin, Watson & Crick mapped out structure of **DNA** in 1953 - led to better understanding of genetic diseases



Magic Bullets - idea of killing germs inside body without harming healthy tissue
Ehrlich and Hata tested various substances that could be used to cure a rabbit from **syphilis**

They found Salvarsan worked - this was the first magic bullet which went onto the market in 1910

Booth and Rowntree published reports to demonstrate need for a welfare state

Bevan (Minister of Health) launched creation of NHS in 1948

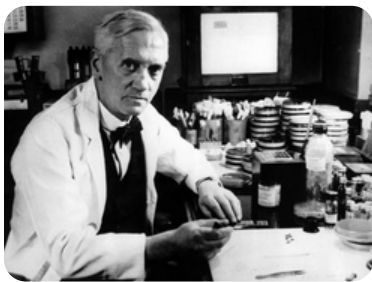


NHS

Introduced healthy living campaigns - Smokefree and Change4Life

Made healthcare free at the point of delivery

- **Blood Groups** discovered in 1901 by Landsteiner
- Röntgen discovered **X-rays** in 1895
- Hounsfield created **CAT scanners** in 1972
- **Self monitoring** - patients can measure own blood pressure and blood sugar levels with tech such as Apple Watches



MEDICINE IN BRITAIN c1900-PRESENT



Lung Cancer

- In 1950 the British Medical Research Council published research connecting lung cancer to smoking
- Each lung cancer patient costs the NHS more than £9000
- In 2005 cigarette advertising was completely banned
- In 2012 cigarettes were removed from display in shops



Alexander Fleming

In 1928 Fleming left a window open in his lab and bacteria had been killed by a mould - penicillin

Margaret Hutchinson Rousseau

Developed technology to mass produce penicillin

Florey & Chain

They were given funding by government to produce penicillin for war
In 1941 USA entered war and gave \$80 million to fund research
By 1943 penicillin was mass produced



Current treatments for lung cancer:

- Radiotherapy
- Chemotherapy
- Transplant
- Immunotherapy



Medicine in Britain c1900-Present

Quiz Questions

Take 5 minutes to study the Cheat Sheet on this topic, then see how many questions you can get right without looking!



1. When was the NHS launched?

2. Who discovered blood groups in 1901?

3. Give one current treatment for lung cancer.

4. How much does each lung cancer patient cost the NHS?

5. What did Fleming accidentally discover after leaving a window open in his lab?

6. Name one individual who published a report demonstrating the need for a welfare state.

7. The first magic bullet helped to cure which disease?

8. Which individuals mapped out the structure of DNA in 1953?

9. Name one lifestyle aspect that is now understood to cause disease.

10. When did Röntgen discover X-rays?





X-Rays

Discovered by Röntgen in 1895
Used in hospitals from 1896
Not fully understood

Aseptic Surgery
Lister used carbolic acid to kill infection from 1865
Required to wash self and surgical instruments sterilised

Medical Developments Before WWI

Blood Transfusions

First performed by Blundell in 1818
In 1894 Wright found chemicals which prevented it from clotting
In 1901 Landsteiner discovered blood groups

The Underground Hospital at Arras

- Opened in 1916
- Fully operational
- 700 spaced for stretchers and beds
- Operating theatre, electricity and water
- Abandoned when water supply was destroyed in Battle of Arras 1917



BRITISH SECTOR OF THE WESTERN FRONT 1914-18 P1

Shelling → Destroyed roads

Battlefield → Used to be farmland so bacteria from fertiliser remained

Ambulance Wagons → Drawn by horses but shaky so worsened injury

Base Hospitals → On the coast, had operating theatres



Chain of Evacuation

Stretcher Bearers - collected wounded from frontline

Regimental Aid Posts - gave immediate first aid, aimed to get soldiers back to combat

Main Dressing Stations - dealt with more serious injuries in bunkers and tents

Casualty Clearing Stations - dealt with more critical injuries in old factories or schools

Base Hospitals - near the coast so wounded could travel back to Britain, doctors specialised in specific injuries



Royal Army Medical Corps (RAMC)

- included doctors, ambulance drivers and stretcher bearers

First Aid Nursing Yeomanry (FANY)

- sent women volunteers to work as nurses on Western Front



Trench Foot - caused by standing in cold water and mud for long periods

Trench Fever - caused by lice

Shrapnel and Bullet Injuries - caused by explosions and combat

Shellshock - caused by stress of warfare

Medical Conditions

Gas Injuries - caused burning skin, blisters & suffocation

Gas Gangrene - wounds infected by bacteria from soil



3 Ways of Dealing with Infection:

1. **Debridement** - removing dead or infected tissue
2. **Carrel-Dakin Method** - killed infection using sterilised salt solution
3. **Amputation** - removing infected limbs



Blood Banks - in 1915 **Lewisohn** found adding sodium nitrate to blood prevented it from clotting, and **Weil** discovered it would be stored for 2 days by refrigerating it

➡ **Thomas Splint** kept limbs and joints still during surgery - wounded soldiers often died from wounds in legs if not kept still as lost so much blood and infections

➡ **Improved survival rates** from leg injuries from **20% to 82%**

➡ **Blood Transfusions** - used from 1915 on Western Front

➡ A British doctor in RAMC - **Keynes** - designed a portable kit so could be carried out near front-line

Marie Curie - spent WWI building mobile x-rays units to be used to detect shrapnel on the frontline

The Battle of Cambrai

- November - December 1917
- 1st successful, large-scale use of tanks (nearly 500)
- Advanced on German position
- Success limited by lack of infantry



BRITISH SECTOR OF THE WESTERN FRONT 1914-18 P2

1st Battle of Ypres

- Oct-Nov 1914
- Salient = 3 sides of the area surrounded by enemy
- British lost >50,000 troops

The 2nd Battle of Ypres

- April - May 1915
- British unprepared for use of gas as a weapon
- Used urine-soaked cloths as gas masks
- British lost 59,000 troops



The Battle of Passchendaele (3rd Battle of Ypres)

- July - November 1917
- British aimed to break out of the Ypres Salient
- The ground was waterlogged due to bad weather; many men drowned in the mud
- 245,000 British casualties

The Battle of the Somme

- July - November 1916
- 20,000 British troops died on the 1st day of the battle
- >400,000 British soldiers died altogether
- British used the creeping barrage = launching artillery from the trenches just in front of advancing British troops

The Battle of the Arras

- April - May 1917
- With help from New Zealand, Britain dug a network of underground caves at Arras
- 24,000 British troops attacked from the tunnels
- Nearly 16,000 British and Canadian casualties



British Sector of the Western Front

Quiz Questions

Take 5 minutes to study the Cheat Sheets on this topic, then see how many questions you can get right without looking!



1. When did the Underground Hospital of Arras open?

2. What is the first step in the chain of evacuation?

3. What does RAMC stand for?

4. What was gas gangrene caused by?

5. Why were ambulance wagons problematic?

6. What was the Carrel-Dakin Method?

7. Who kept limbs and joints still in surgery which greatly increased survival rates of leg injuries?

8. What did soldiers use as masks when they did not have gas masks during 2nd Battle of Ypres?

9. What could be added to blood to prevent it from clotting for blood banks?

10. Which scientist built mobile x-ray units to be used on the frontline?





Paper 1 - Question 1

**4
Marks**

1. Describe two features of ...

- Identify one **valid feature** = 1 Mark
- Give **supporting evidence** for the feature - names, dates, events, places, statistics = 1 Mark
- Do this twice for two different features
- Keep it brief - don't forget it is only worth 4 marks!

Use this guide and your own knowledge to answer the question below:

1. Describe two features of the evacuation route which helped injured soldiers to be treated quickly. (4 marks)



Paper 1 - Question 2a

**8
Marks**

**2a. How useful are sources a & b
for an enquiry into...**

Answer Structure:

2 x CONC paragraphs: 1 on first source and 1 on second source

C - Content

O - Own Knowledge

N - Nature, Origin & Purpose (NOP)

C - Conclusion

Content - What can you learn/infer from the source - describe key points of source and what they tell us

Own Knowledge - Is the content of the source accurate? I know this to be accurate/inaccurate because...

NOP - How does the nature, origin and purpose of the source effect the usefulness.

Be specific! Think about who wrote the source, what their intentions were, what form the source is and what date it was published

Conclusion - Final sentence of paragraph to make a judgement on the usefulness of the source for the enquiry - Therefore, this source is extremely/somewhat/fairly useful because...

Does not need a separate introduction and conclusion, and you do not need to compare the sources

Source A

An extract from a letter, sent by a soldier on the British Western Front in 1915.

Dear Bert,

To tell you the truth, while writing this letter I am wet through to the skin and not a dry thing for a change. We have got our winter fur coats and gum boots, but the latter cause more curses than you can imagine, for instance last night I was sent off to select dugouts for our platoon, which is number 37. It was pitch dark, no light allowed and in a strange place, well honestly I fell over at least 20 times got smothered in mud from head to feet and on the top of that wet though for it rained in torrents.

While in the trenches last week John and I were up to our knees in water and got our gum boots half full. The line is a bit quiet lately and only now and again do we get a shelling, but one gets used to it. That, to give you an idea, is like sitting at Paddington and hearing the engines screech.

[<https://www.nationalarchives.gov.uk/education/resources/letters-first-world-war-1915/trenches-knees-water/>]

Source B

A photograph of British soldiers standing in deep water in the trenches. The photographer is not known.



[<https://www.theworldwar.org/learn/wwi/trenches>]



Exam Question

Use this guide and your own knowledge to plan your answer for the question below:

2a. Study Sources A and B.

How useful are Sources A and B for an enquiry into conditions for soldiers in trenches on the Western Front?

Explain your answer, using Sources A and B and your knowledge of the historical context. (8 marks)

Plan your answer using the prompts below:

Source A:

Content of Source:



Own Knowledge:



Nature, Origin, Purpose:

Nature →

Origin →

Purpose →

Conclusion:

Circle your conclusion

This source is fairly, somewhat, very, extremely useful.

Source B:

Content of Source:



Own Knowledge:



Nature, Origin, Purpose:

Nature →

Origin →

Purpose →

Conclusion:

Circle your conclusion

This source is fairly, somewhat, very, extremely useful.



Exam Question

Use this guide and your own knowledge to answer the question below:

2a. Study Sources A and B.

How useful are Sources A and B for an enquiry into conditions for soldiers in trenches on the Western Front?

Explain your answer, using Sources A and B and your knowledge of the historical context. (8 marks)



Paper 1 - Question 2b

**4
Marks**

2b. How could you follow up Source A/B to find out more about...

Detail in Source A that I would follow up:

1 Mark = Selecting a **detail in the **source** that could be followed up**

Question I would ask:

1 Mark = A **question this detail is linked to - specific to source**

What type of source I could use:

1 Mark = Identifying an **appropriate source that could answer your question**

How this might help answer my question:

1 Mark = Explain **why this source would help to answer you answer your follow-up question**



Exam Question

Use this guide and your own knowledge to answer the question below:

Study Source A.

How could you follow up Source A to find out more about medical conditions on the Western Front?

In your answer, you must give the question you would ask and the type of source you could use.

**Complete the following questions.
(4 marks)**

Detail in Source A that I would follow up:

Question I would ask:

What type of source I could use:

How this might help answer my question:



Paper 1 - Question 3

**4
Marks**

3. Explain one way in which X was similar/ different to Y

1 x PEEEEEL paragraph

P - Point

E - Evidence for X

E - Explain X

E - Evidence for Y

E - Explain Y

L - Link

Point - One way in which X is similar/different to Y is ...

Evidence - Stats, Places, Events, Names, Dates for X

Explain - Explain X

Evidence - Stats, Places, Events, Names, Dates for Y

Explain - Explain X

Link - Link X and Y together and decide if they are the same/different

You only need one paragraph, don't forget this is only worth 4 marks so it doesn't need as much detail as the higher mark questions



Exam Question

Use this guide and your own knowledge to plan your answer for the question below:

**3. Explain one way in which treatment of plague was similar in medieval Britain to the early modern period.
(4 marks)**

This question is only worth 4 marks so bullet point 1-3 words for each prompt

1st Point:



1st Evidence:



1st Explain:



2nd Point:



2nd Evidence:



2nd Explain:



Link:





Exam Question

Use this guide and your own knowledge to answer the question below:

**3. Explain one way in which treatment of plague was similar in medieval Britain to the early modern period.
(4 marks)**



Paper 1 - Question 4

**12
Marks**

4. Explain why....

You may use the following in your answer:

- Point X
- Point Y

3 PEEL paragraphs: one on point X, one on point Y and 1 on your own idea

P - Point

E - Evidence

E - Explain

L - Link

Point - One reason for [wording of question] is ...
Make sure to do one paragraph for each of the given points, and one paragraph on a point of your own

Evidence - Stats, Places, Events, Names, Dates

Explain - Show how this evidence links your point to the question

Link - Link back to the question

Does not need a separate introduction and conclusion



Exam Question

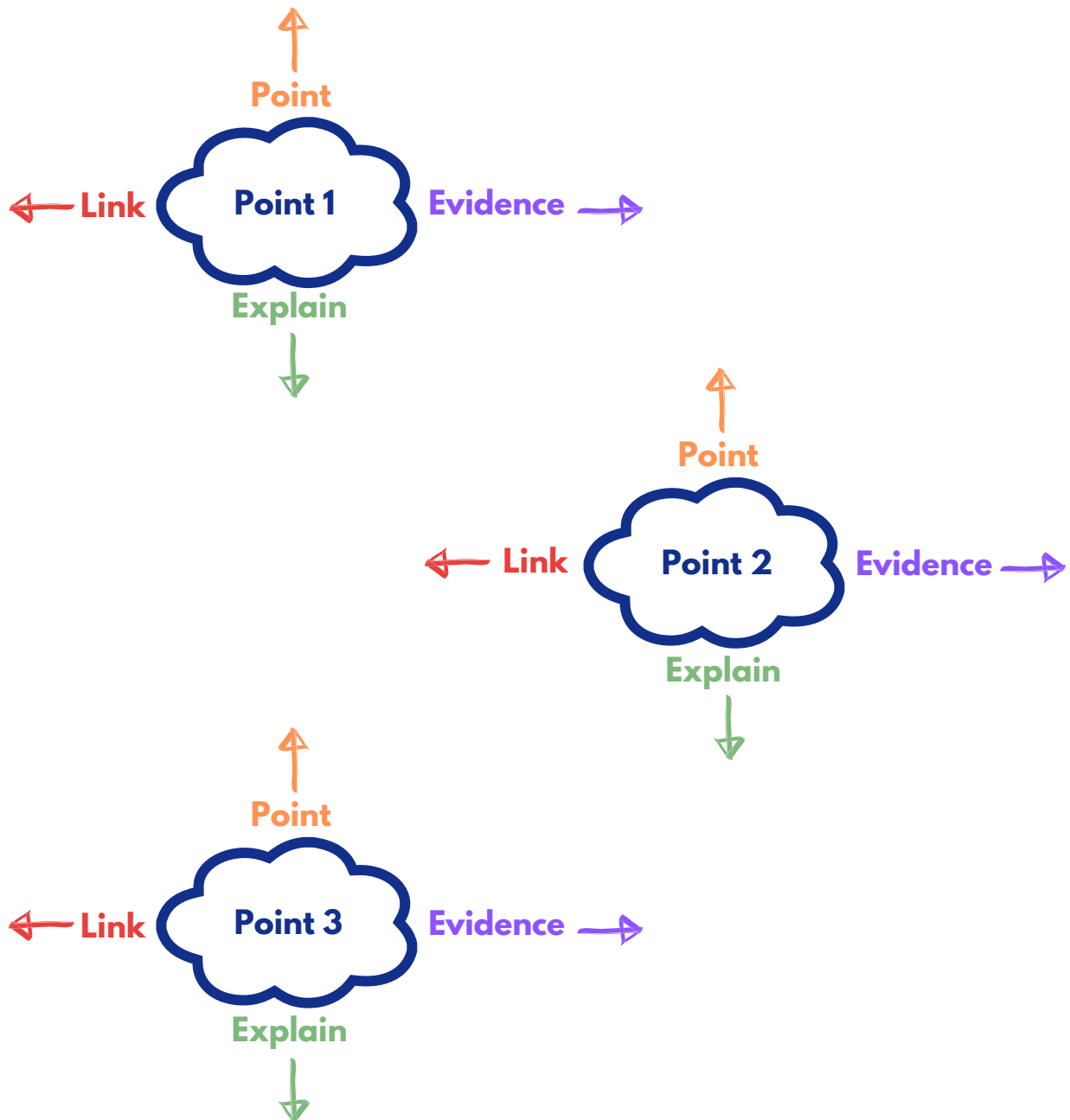
Use this guide and your own knowledge to plan your answer for the question below:

Explain why approaches to treatment changed in the period c1700-c1900.

You may use the following in your answer:

- Florence Nightingale
- James Simpson

You must also use information of your own. (12 marks)





Exam Question

Use this guide and your own knowledge to answer the question below:

Explain why approaches to treatment changed in the period c1700-c1900.

You may use the following in your answer:

- Florence Nightingale
- James Simpson

You must also use information of your own. (12 marks)



Paper 1 - Question 5/6

**16 Marks
+4 SPaG**

**5/6. [Statement] How far do you agree?
You may use the following in your answer:**

- Point X
- Point Y

3 PEEL paragraphs: one on point X, one on point Y and one on your own point - this can either be two points agreeing and one point disagreeing with the statement, or vice versa

Introduction
P - Point
E - Evidence
E - Explain
L - Link & Mini Judgement
Conclusion

x3 {

Intro - One or two sentences - wording of question, give the three points you are going to make and give your judgement

Point - Make sure to do one paragraph for each of the factors given in the question, and one paragraph on a point of your own

Evidence - Stats, Places, Events, Names, Dates

Explain - Show how this evidence links your point to the question

Link - Show how this evidence links your point to the question, and add a mini judgement e.g. Therefore I agree/disagree with [Statement] because [Point]

Conclusion - Briefly explain whether you agree or disagree with the statement - why this factor was most convincing and why other was not

4 Marks for SPaG - Make sure you read through your answer and check for any spelling or grammatical mistakes and include key terminology



Exam Question

Use this guide and your own knowledge to plan your answer for the question below:

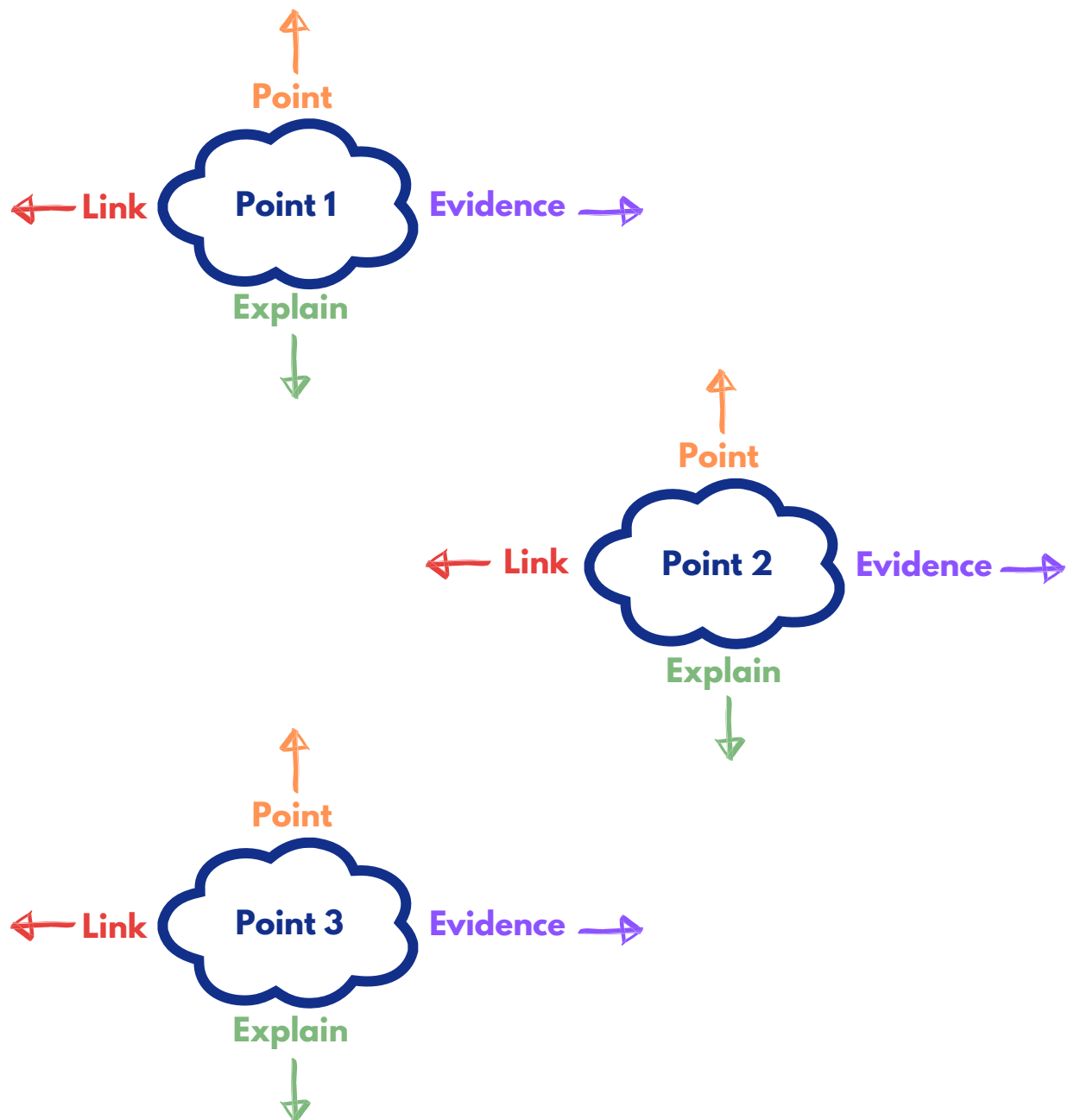
'The work of Vesalius was the most significant factor in the progression of medical knowledge in the years c1500-c1700.'

How far do you agree? Explain your answer.

You may use the following in your answer:

- Vesalius' book, The Fabric of the Human Body
- The invention of the printing press

You must also use information of your own. (16 marks + 4 marks for SPaG)





Exam Question

Use this guide and your own knowledge to answer the question below:

'The work of Vesalius was the most significant factor in the progression of medical knowledge in the years c1500-c1700.'

How far do you agree? Explain your answer.

You may use the following in your answer:

- Vesalius' book, The Fabric of the Human Body**
- The invention of the printing press**

You must also use information of your own. (16 marks + 4 marks for SPaG)

