Classroom activities

Edexcel IGCSE History: Medicine 1845-1945

Revision exercise

Aim: to reinforce knowledge for the key areas of medicine

Exercise can be completed:
. individually
. pair work
. against the clock
Variations:
. information can be replaced with blank cards which the student completes themselves
. cards can be completed by the student

1. Surgery

a. Four pages with **headings**: anaesthetics; antiseptics; asepsis & blood transfusions
b. Cut out the **names** of the people and place under the correct heading
c. Cut out the **information** and place with the correct person or under the correct heading
d. Place the **factors** with the correct person or discovery

2. Understanding causes of disease

a. Four pages with **headings**: anaesthetics; antiseptics; asepsis & blood transfusions
b. Cut out the **names** of the people and place under the correct heading
c. Cut out the **information** and place with the correct person or under the correct heading
d. Place the **factors** with the correct person or discovery

3. Public Health

a. Four pages with headings: anaesthetics; antiseptics; asepsis & blood transfusions
b. Cut out the **names** of the people and place under the correct heading
c. Cut out the **information** and place with the correct person or under the correct heading
d. Place the **factors** with the correct person or discovery

4. World Wars

a. Four pages with headings: anaesthetics; antiseptics; asepsis & blood transfusions
b. Cut out the **names** of the people and the areas of development then place under the correct heading
c. Cut out the **information** and place with the correct person or under the correct heading

Anaesthetics

Blood transfusions

Antiseptics

Asepsis

Ignaz Semmelweis	Horace Wells
Jon Snow	Gustav Neuber
Ernst von Bergmann	Humphrey Davy
Karl Landsteiner	James Simpson
Reuben Ottenburg	Joseph Lister
James Wood	Charles Chamberland

SCIENCE

INDIVIDUAL

GOVERNMENT

RELIGION

TECHNOLOGY

RIVARLY

PUBLIC PRESSURE

WAR

TEAMWORK

. experimented with carbolic acid before he knew about the germ theory

. tested 'laughing gas' (nitrous oxide) & suggested it could be used in surgery

. used chloroform in childbirth & surgery

. used chloride of lime as a hand wash

had a clinic which enforced strict rules on cleanliness for his rooms & equipment

. demonstration at the Berlin Medical Congress to visiting surgeons

. discovered blood groups
. blood needed to be same to transfer
. mixing blood types could cause clogging of blood vessels

. studied the use of chloroform
. amount given was important
. kept records of deaths from chloroform

. invented the steam steriliser, to kill germs on equipment, known as the autoclave

. suggested that patient & donor blood should be grouped and cross matched before a blood transfusion

. patients experienced less pain but more deaths with anaesthetics there was more surgery & more complicated surgery - more people died from blood loss & infection

. reduced deaths - less wounds became spetic but more complicated surgery was now performed with blood loss & infections leading to more deaths not less

. developed the hypodermic needle - made transfusions easier

. used laughing gas in dental work

Germ Theory

Vaccines

Anti-toxins

Magic Bullets

Louis Pasteur	Robert Koch
Paul Ehrlich	Gerhard Domagk
Emil von Behring	Alexander Fleming
Howard Florey	Ernst Chain
Louis Pasteur	

SCIENCE INDIVIDUAL

GOVERNMENT RELIGION

TECHNOLOGY RIVARLY

PUBLIC PRESSURE WAR

TEAMWORK

.worked for a local brewer
found bacteria could change alcohol to vinegar. He suggested heating to kill the bacteria

. one of the team, injected some chickens with some weakened chicken cholera
(it had been left out for several days)
. the chickens survived.

. disproved Spontaneous Generation theory

. stained specific microbes
to identify them under a microscope

. one dye could kill several diseases.
. French scientists realised it was one of a group of chemicals called 'sulphonamides'

Anthrax 1881:
public demonstration to prove it worked
Rabies 1884:
using another's work he used Rabies vaccine on a young boy used Rabies vaccine on a young boy

. By 1944 in mass production it was able to kill a variety of germs inside the body including blood poisoning in war wounds

. identified germs that caused 21 different diseases including:
. anthrax
. cholera
. tuberculosis

. following on from Pasteur's team who found that germs cause disease by producing toxins (poison) in the blood

. tried for ten years using 606 different dyes on the germ that caused the sexual disease syphilis until one finally worked

. people found it hard to believe that tiny microbes in the air could cause disease

. Proved in1844 that
unsterlised water had micro-organisms in it

. Salvarsan 606, cured syphilis

. whilst he discovered the effects,
he couldn't create enough of it to make it useful quantities

.looked for man-made chemicals that could kill microbes without harming the body

. US govt. gave $80 million to drug companies when USA joined the war in 1941

. a bacteriologist in London

. cured a boy of Diphtheria in 1891

. a student of Behring

. an assistant of Koch

. Professor of Chemistry in Lille, France

. German doctor & researcher

Cholera

Public Health Act 1848

Public Health Act 1875

Liberal reforms

. 66% of the men who volunteered for war were not fit enough for the army

. life expectancy less in towns than countryside
. said govt should act as disease caused by air pollution
. recommended:
. town councils clear away rubbish
. provide clean water
. improve sewers & drains
. each town have a medical officer
. taxes should pay for these things
.

. Report of Sanitary Conditions 1842

. Workers National Insurance Act 1911

. worker, employer & govt. all paid contributed to a fund (National Insurance Contributions)
. workers then got free medical treatment
. payment when they were sick

. Local Health Boards:

. 'Big Stink' 1858
. resulted in sewers being built across London

. study in York found that 28% did not have enough money to live on at some point in their lives:
. young children . old .
. sick . unemployed .

. Improvements compulsory
. towns & cities now had to provide:
. rubbish removal . clean water .
. sewers & drains
. each town have a medical officer
. taxes should pay for these things

. increase taxes for money to spend on improved public health e.g. sewerage, water
. make laws for better building standards e.g. drains & toilets
BUT: action was voluntary
& many towns thought it was too expensive

Aim
. to speed up reform as voluntary action was very random across the country

. On the mode of communication of cholera
. 1849 wrote that cholera caused by drinking dirty water
. 1855 more research showed that dirty water from certain pumps = higher death rate

Seebohm Rowntree	Lloyd George
Jon Snow	Boer War
Joseph Bazalgette	Labour Party
Edwin Chadwick	Edwin Chadwick
Liberal Party	

SCIENCE INDIVIDUAL

GOVERNMENT RELIGION

TECHNOLOGY RIVARLY

PUBLIC PRESSURE WAR

TEAMWORK

World War One

World War Two

Archibald McIndoe

Robert Thomas

Agote & Hustin

Marie Curie

Charles Drew

Harold Gillies

Sulphonamides

X rays

Plastic surgery

Blood transfusions

Plastic surgery

Blood plasma

Morphine

Splints

Anti-malaria drugs

Tetanus vaccine

Prosthetic limbs

Mobile hospitals

. mobile x-ray machines were developed for the French army, near to the front line

. they found broken bones, bullets & shrapnel

. added sodium citrate to stop clotting

. during the war several strains were developed
. it was 20 x more potent
. mass produced in the USA then Britain

. largest scale of vaccinations given to troops prior to fighting
. of 17,000 troops injured at Dunkirk none got it

. developed mass production of dried plasma

. usually treated with tannic acid & tannafax jelly, but changed to saline baths, which had less complications

. with fighting in the pacific this was major problem for USA
. developed atabrine a synthetic drug, though soldiers complained of bad side effects
. British developed mepacrine

. used pedicle tubes to help reconstruct faces and established a specialist unit for his work

. used extensively:
. 1914: 80% with broken thighs died
. 1918: 80% survived

. lighter & better designed they were developed from light metal

. understood the need to get injured quickly into surgery

. mass production of M+B 693 & M+B 760 which were effective against several infections

. used as a pain killer, injected into the patient

Classroom activities **Edexcel IGCSE History: Medicine 1845-1945**

"WHO AM I?"

Aim: to reinforce knowledge of the key people in medicine

Each student to find out who they are

1. Print the names onto sticker paper e.g. Pasteur, Chadwick, Koch, Nightingale etc
2. Stick a sticker name on the back of each student - do not let them see their name
3. Students view names of others, but not their own names
4. Each student can ask anyone else (who can see names of others) one question - the answer can be: YES , NO or Don't Know
5. Can only ask one student one question
6. Win when student has correctly guessed their own name

Classroom activities **Edexcel IGCSE History: Medicine 1845-1945**

"PLEASED TO MEET YOU?"

Aim: to reinforce knowledge of the key people in medicine

Each student to find links between different key people & events

1. Print the names onto sticker paper e.g. Pasteur, Chadwick, Koch, World War One etc
2. Stick a sticker name on the front of each student
3. Students have to introduce themselves to others, say who they are and say how they are connected e.g. "Hi, I am Jon Snow, and I am connected to you ……"
4. Some connections are easy, some more difficult but students can be very inventive to find a connection. If no connection then they are out.
5. Can set number of introductions they have to make e.g. 3 people, 4 people etc

Louis Pasteur

Robert Koch

Paul Ehrlich

Gerhard Domagk

Emil von Behring

Alexander Fleming

Howard Florey

Ernst Chain

Archibald McIndoe

Robert Thomas

Agote & Hustin

Marie Curie

Charles Drew

Harold Gillies

Edwin Chadwick

Ignaz Semmelweis

Horace Wells

Jon Snow

Gustav Neuber

Ernst von Bergmann

Humphrey Davy

Karl Landsteiner

James Simpson

Reuben Ottenburg

Joseph Lister

James Wood

Charles Chamberland

Elizabeth Blackwell

Mary Seacole

Florence Nightingale

Elizabeth Anderson

Seebohm Rowntree

Lloyd George

Jon Snow

Joseph Bazalgette

"I PACK MY MEDICINE BAG"

Aim: to reinforce knowledge of the medicine topic

Individual or pairs if a large class

1. Simple game based on the 'I pack my bag and in it I put …'

2. Each student has to pack the bag with a person / event / discovery / development

3. Each time the student has to say what is already in the bag
   e.g. I pack my medicine bag and in it I put, Pasteur, Koch and I add Public Health Act 1848
   Out when you cannot add anything or get the previous items in the bag incorrect (inc. correct order)

4. To make it more difficult each item added to the bag has to be connected to the last item
   e.g. vaccinations, Pasteur, Germ Theory, Koch etc
   Anyone can object to the added item, but if there is a connection (teacher to judge!) the objector is out!

Classroom activities

Edexcel IGCSE History: Medicine 1845-1945

FLASH CARDS

Aim: to reinforce knowledge of the medicine topic

Individual or pairs or small groups

1. Each A4 card has a key word on it - a person, a key event or key discovery/development e.g. Pasteur, Germ Theory, Jon Snow, Public Health

2. Teacher holds up the card and either:

   . students write down key words or features linked to that card - can limit the number of features
   . students can shout out key words or features (can be chaotic - but can also be fun)

3. Flash Cards can be placed around the room and students can go round and write key words and features on each card - a clever twist is to give each student a different coloured pen or pencil crayon, then you can see who has written what

4. As part of the review students can write down the people topics they know well and those that need more revision