

Using the teaching notes for the Development Study

These notes have been written with NQTs and other new teachers of ‘medicine’ primarily in mind. However, while you may be new to the content, this doesn’t mean you lack initiative, the ability to plan for individual classes or to read and implement the activities in the Student’s Book for yourself. Therefore these notes do not simply repeat the details of the activities in the Student’s Book. If there is no mention in the following notes of a particular activity in the Student’s Book this doesn’t mean we have decided it’s no longer useful. We have just assumed you can read it for yourself and will use the Student’s Book and these notes to make decisions about exactly how to use the book.

Each section of these teaching notes does the following:

- Identifies the main features in the book and the main issues to think about in planning and teaching, based on many years experience of the problems students can have with this course.
- Identifies the available supporting resources in this TRB and on our CDs and websites.
- Assumes you can use the series of activities laid out in the Student’s Book but suggests

additional or alternative activities, often involving kinaesthetic versions of the textbook activities. Only you will know which of your classes will be suited to which approaches.

- Suggests ways of helping students identify the outline picture and key features of medicine in a period before going on to explore them in depth.
- Suggests methods of speeding up progress by, for example, dividing tasks amongst a class.
- Provides reminders of when to place the ideas, events and people of individual periods in the wider overview of medical history.
- Identifies opportunities to link to the over-arching enquiry ‘Why do people today have better health and live longer than people in the past?’

The activities in the Student’s Book all have the single heading ‘Activities’ and thus do not specify whether questions will be answered on paper or orally. This is because you may use the same questions for oral discussions with one class or as a written task with another, depending on the nature of the class, time of day, what lesson they had previously, etc. Only you can judge how best to use an activity at any particular time. However we have indicated in these notes which activities are intended to be done as fast overviews or more measured analyses.

Section 1: The Big Story of medicine through time

Overview

In the past we might have called this section ‘Introduction’, but we have used a different section title because we want to flag up its importance. It is all too easy to zip past an Introduction to get to the start of the ‘real’ work. This section is important for two reasons:

- a) It enables students to focus early on the overall enquiry question – ‘Why do people today have better health and live longer than people in the past?’
- b) It enables students to develop an outline understanding of medical history and to see how this outline helps create an answer to the core enquiry.

Experience shows that while spending time on an overview seems to make for a slow start, students do better in their exam if, at the beginning, they have built a stronger grasp of the overall story of the history of medicine.

Resources	<ul style="list-style-type: none"> • Student’s Book pages 4–15* • Activity Sheets 1–6[†] • Dynamic Learning 3 – ‘Living Graphs’ and ‘Medical Moments in Time’ illustrations.
Exam Busters	<p><i>Smarter Revision</i></p> <ul style="list-style-type: none"> • Using Living Graphs (pages 8–9). <p><i>Meet the Examiner</i></p> <ul style="list-style-type: none"> • Understanding the Development Study exam paper (pages 14–15).
Objectives	<p>By the end of this section students should have:</p> <ul style="list-style-type: none"> • Established clearly an outline of medical history which includes some key individuals, events and theories. • Identified how the Study in Development on the history of medicine fits into their overall GCSE History course and what it is aiming to achieve. • Identified the range of concepts and factors used in the study and begun to use some of the language of change and continuity. • Identified as the core question for this unit ‘Why do people today have better health and live longer than people in the past?’ and begun to suggest answers to this question.
New to teaching ‘Medicine’? Priority decisions	<ul style="list-style-type: none"> • Are you going to begin with personal medical stories or go straight into the Big Story activities? • How many lessons will you do on the Big Story to make sure students develop a strong grasp of the outline? • What level of detail in the outline is suitable for this class? • How will students record this outline for future use and how will you use classroom displays to keep it visible?

*Page numbers refer to the Student’s Book unless otherwise stated.

[†] ‘Activity Sheet’ refers to TRB Activities (i.e. activity sheets in this book).

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New to teaching ‘Medicine’? Priority decisions	<ul style="list-style-type: none"> • Are you going to begin with personal medical stories or go straight into the Big Story activities? • How many lessons will you do on the Big Story to make sure students develop a strong grasp of the outline? • What level of detail in the outline is suitable for this class? • How will students record this outline for future use and how will you use classroom displays to keep it visible?

Introducing the core enquiry for the whole Development Study

This book has been set up as an overall enquiry as well as coverage of an exam specification. Our core enquiry is:

‘Why do people today have better health and live longer than people in the past?’

(We know that the words ‘on average’ should be included, but they do take away much of the clarity and punch of the question.)

There are different ways of introducing this enquiry. One option is to do so as part of the activities on the Big Story (**pages 4–9**). A second option is to first use a more personal story or stories to open up the core question. This personal story approach could be taken in the very first lesson, or used after covering **pages 4–9** and before moving on to **pages 10–11**.

Personal stories are extremely effective in drawing students into topics, especially a personal story of your own or from your family, or one from

a colleague, your class or of a past student. Many teachers know the feeling of abandoning their teaching persona and talking about themselves to a class – suddenly students’ attention is deeper and more focused. However, if this doesn’t feel comfortable then Activity Sheet 1 provides an alternative in the form of two stories of other people. If you are an NQT with a new class, think carefully and discuss with colleagues how to approach a storytelling start – with some classes you might not wish to open up your own story so early and it may be better to play safe and use the stories on Activity Sheet 1. While surgery appears to be the dominant element in these stories behind surgery lie factors (see **page 11**) such as science and technology. Can students at this stage suggest how other factors might have helped or hindered medical progress?

The Big Story (pages 4–9)

Establishing a clear outline in students’ minds at the beginning of the course is important for exam success. The sooner they develop a sense of the overall story the more time they have to deepen their overall chronological understanding and knowledge. There is

also less chance of mistakes in exams as a result of putting periods in the wrong sequence or key developments in the wrong periods. An early grasp of the outline also makes it much easier to understand the full significance of developments in any individual period.

In addition, the core enquiry gives this outline a purpose – establishing some initial ideas about the answer (a hypothesis) to ‘Why do people today have better health and live longer than people in the past?’

Pages 4–7 help students create this outline and hypothesis for themselves. **Pages 4–5** are an introduction to the outline so you will spend a lot more time on **pages 6–7**, which enables students to tell the outline story for themselves and relate it to the core question.

Your first step in planning must be to clarify for yourself what constitutes a suitable outline for each class. Plan this in conjunction with a wall display that will be visible throughout the course (assuming classroom facilities make this possible).

Pages 4–5 present ten clues for students to set out into periods. This is about what they would expect to be happening in medicine in each major period and about establishing some of the major continuities. You can either tackle this activity from the book or copy Activity Sheet 2 from this book to create cards for moving and placing on a timeline.

- 1) Begin by focusing on the timeline and asking students which non-medical events, people or developments they associate with each period – this is to establish a sense of each period.
- 2) Then move on to placing the clues – either have small groups organise all ten clues and then compare results as a class, or give each group two or three clues to concentrate on and then report back to the class where they think they go on the timeline.

Here’s an answer guide – just in case it helps:

- A medieval but used until at least the early twentieth century
- B Second World War
- C Ancient Greece but the idea lived on
- D later nineteenth century
- E nineteenth century
- F 1948
- G example from mid-eighteenth century but typical of similar cures throughout history
- H medieval but continued afterwards

- I medieval but idea common from earlier and lasted into nineteenth century
- J later nineteenth century.

3) Having put the clues into periods pick out one or two items for discussion to introduce ideas of change and continuity. For example:

- Could Clues A or J have gone in any other period? Lead into ideas about continuity and how long-lasting some ideas were.
- How long do you think the ideas in Clue C lasted?
- Which clues suggest the period when there was most progress?
- Which clues tell us about a really important turning point in medical history?

Move through **pages 4–5** quite quickly – it’s a stimulus activity to the more detailed work on **pages 6–7**, which adds more key events, people and developments, including some relating to the Extension Study on public health. From this information stems the main Big Story activity in which groups of students present an outline answer to the core question by creating and telling their own outline history of medicine (**page 6** Activity 1), using some or all of the information on the graph. There is no need for students to use all the information if this creates confusion.

It is important to get two or three groups to make their presentations (so that students become used to seeing and thinking about the overview) and then discuss what they have in common and what the key features of this overview/answer are. Activity Sheet 6 (this book) can be used to sum up these key features.

This approach can be supported by using a simple kinaesthetic overview activity identifying the ‘Big Ideas’ of each period, e.g. enquiry for the Renaissance. This should take no more than 15 minutes. Some students wear tabards proclaiming a period Big Idea, and the task for the rest of the class is to put them into the right chronological sequence and explain in a sentence what each period Big Idea was. For full details see <http://www.thinkinghistory.co.uk/ActivityBase/MedicineBigIdeas.html>

Pages 8–9 focus more closely on the individual themes – ideas about causes of disease, treatments and public health (for the Extension Study) – and set up the first Smarter Revision task recording the development of each theme as a graph. Students will continue this throughout the course, adding more detail after working on each historical period. How long you spend on the graph at this stage depends on the nature of the class.

You could:

- a) Tackle the graph-building task outlined in the activity, sending groups of students on a treasure-hunt

through the five Medical Moments in Time pages, so that each group builds up a different graph.

- b) Start the graphs at this stage by using either **pages 16–17** (on Roman Britain) or **pages 54–55** (medieval England) to begin the four graphs. Your starting point depends on your choice of Extension Study.
- c) **Page 9** gives students the rationale for this activity and suggests different methods of recording the development of the graph. Activity Sheet 3 provides a template graph to complete.

Together **pages 4–9** provide the material to create wall displays outlining the history of medicine which are an important reference as each period is investigated in more detail. If you use a heading for the display consider using the core question as the heading rather than simply ‘The History of Medicine’. Keep a display board available to update this outline on a regular basis during the course, adding details to this initial pattern or amending the tracks of the graphs.

Helping students understand the context of ‘Medicine’ (pages 10–13)

Pages 10–13 are for brief reference early on in the course, but revisit them at least once later in the course to reinforce the ideas, certainly at the end of the Development Study. They aim to make clear to students how the Study in Development fits in their overall GCSE course and what are the main concepts they will use. **Page 10** should help students appreciate that this SHP course is not a mix of randomly chosen piece of content, but an introduction to a set of deliberately diverse approaches to history.

Understanding how the whole GCSE course fits together can increase students’ sense of

achievement. You could also use Activity Sheet 5 from this book to get across one of the main transferable skills that comes from studying History.

When you introduce the factors on **page 11** (and Activity Sheet 4 from this book), spend a little time exploring the role of factors in the story of medicine. Students may know the words ‘war’, ‘government’ etc. but they need to understand how these factors can affect the development of medicine. One way to do this is to kit a couple of students out with tabards saying e.g. ‘War’ and ‘Government’, then nominate another student as ‘The development of medicine’. This latter student moves across a timeline. Then physically show that these factors sometimes accelerate medicine’s progress, sometimes stop its progress, and sometimes work together to help or hinder progress.

Types of questions in the Exam Busters (pages 14–15)

Pages 14–15 help students to see the Development Study examination and begin to think about how to tackle these questions successfully. Now that students have been briefly introduced to issues of change and continuity and causation, they will see them in these sample questions. Return to this page when you tackle later Exam Buster pages so that students can see the context of individual questions. You may wish to use this page in conjunction with ‘live’ papers, once they have been set.

Outcomes to look for

- a) Students’ ability to give a simple but coherent account of medical history, using some conceptual language (e.g. change, continuity, progress, turning point) and referring to periods of history.
- b) Students’ ability to relate the information in the outline to the core enquiry.
- c) Students’ understanding of what factors are – not simply their names but their role in affecting events.

Section 2: Were medicine and public health better in Roman or medieval Britain?

Overview

This is the first of the two Extension Studies (the other being ‘Public health c.1350 to the present day’). Students must study one of the two. If you have chosen the Extension Study on public health then do NOT teach this section – but do look at it in case any of the material usefully augments your approach to Section 3, helping students to develop their understanding of medicine in 1350.

If you are not covering public health 1350 to the present – keep reading!

The focus in the specification is on changes and continuities from Roman to medieval Britain, so we have structured this section around a direct comparison, introduced on **pages 16–21**. These pages outline the issues and content, and help students create an initial hypothesis relating to the Section enquiry question. They then go into more depth about Roman Britain (**pages 22–33**) and medieval England (**pages 36–47**). This use of outline and depth enables you to choose whether every student tackles all of the in-depth material or whether to move through it by dividing topics amongst the class. For more discussion of this see below.

This section also contains two Smarter Revision activities listed in the grid below. They play an important part in building knowledge of major content areas and establishing a firm base for revision, as well as showing students techniques they can re-use in later sections.

Finally two Exam Busters units introduce students to specific types of exam questions (listed in the grid below).

Resources	<ul style="list-style-type: none"> • Student’s Book pages 16–51 • Activity Sheets 7–17 • Dynamic Learning 1 – activities on both Ancient and medieval medicine (see page 00 of this book). • Dynamic Learning 2 – Hippocrates and Galen: short films on medieval healers at work. • Dynamic Learning 3 – Smarter Revision templates: How long did the ideas of Hippocrates and Galen last? Making inferences from sources about medieval medicine
Exam Busters	<p><i>Smarter Revision</i></p> <ul style="list-style-type: none"> • Memory maps (pages 20–21) • Using your digital camera (page 33) <p><i>Meet the Examiner</i></p> <ul style="list-style-type: none"> • De-coding exam questions; tackling ‘Describe Key Features’ questions (pages 34–35) • Analysing and evaluating change (pages 48–49)
Objectives	<p>By the end of this enquiry pupils should have developed their knowledge and understanding of:</p> <ul style="list-style-type: none"> • The key features of medicine and public health from Roman Britain to c.1350. • The major developments in: <ul style="list-style-type: none"> • ideas about the cause of disease • treatments and prevention of disease and illness • public health

	<ul style="list-style-type: none"> • which factors helped and hindered the development of medicine in the period • the influence of Hippocrates and Galen • how changes in society affected medicine, treatments and public health. <p>Students should also be able to relate developments in this period to the overview and core enquiry by being able to explain why lives were, on average, much shorter than today.</p> <p>Students should also have begun creating revision materials by using the Memory Map, developing graphs and perhaps using digital photographs.</p>
<p>New to teaching ‘Medicine’? Priority decisions</p>	<ol style="list-style-type: none"> 1. How will students quickly establish a picture of the main developments in Roman and medieval medicine? 2. Will you set all students working in depth on every topic or divide up the in-depth topics amongst the class? 3. How will you make key topics memorable so the students retain their knowledge of them? 4. How will you help students to understand the impact of changes in society (factors)? 5. How will you relate medical developments in these periods to the overall core enquiry?

Introduction (pages 16–21)

These pages enable students to identify the key features of medicine in Roman and medieval Britain, compare the two and then create a hypothesis answering the overall question in the Section title.

Begin with the Medical Moment in Time illustration on **pages 16–17** to identify the main features of medicine in Roman Britain. For pace and interest, turn Activity 1 into a team game, with each team of students taking one of the four topics a–d and competing against the clock (e.g. give them three minutes) to see how much evidence they can find, before feeding back their results to the whole class.

Turnip mash was still used for chilblains into the twentieth century (see **pages 116–117** and the video in Dynamic Learning 1 featuring objects from the Thackray Medical Museum).

Students can use Activity Sheet 7 from this book to record their findings. Then discuss Activity 2 from **page 00** of the Student’s Book before turning to **pages 18–19** and following the same pattern for identifying the key features of medieval medicine. These pages and activities give students all the information they need to create their hypothesis by following the ‘washing-line’ activity on **page 20** (Activity Sheet 9). Students should be able to suggest where to place each of the topics on the washing line, using the information collected in Londinium and medieval London.

Finally, for this introduction start students collating their information about key features on two Memory Maps (Activity Sheet 10) – one for Roman Britain and one for the Middle Ages. Detail can then be added to these Maps as you work through the rest of this section, so that they form the main information-collecting activity.

Medicine and public health in Roman Britain (pages 22–33)

The main teaching decision for **pages 22–33** is whether you want:

- a) All students to work on every page – able students will cope with this but there is the danger for other students that the density of detail will obscure the main points. Or
- b) Groups to tackle the individual topics identified on **page 20** and report back their findings to the whole class. This is speedier and less likely to result in students getting bogged down in detail. It gives a sense of pace and develops important skills of teamwork and individual responsibility.

Given that students have already built up outline knowledge, have begun Memory Maps and created a hypothesis (so clarifying the overall task), we suggest that you strongly consider option (b). If you want to follow option (b) but feel that students need a model to tackle the Public Health topic (**pages 22–25**) with the whole class so that they are clear what is required, then divide the remaining topics amongst groups.

Pages 22–25: you can use Activity Sheet 11 to collect evidence of the impact of Roman public health systems in Britain. This will help students reach a balanced judgment, as it is easy to get carried away by the supposed efficiency of Roman engineering. Though it was far in advance of anything before the Victorians, the Roman public health system still did not protect people from epidemic disease and was far from universally available. One way to get across both sides of the argument is to set up a game of ‘verbal tennis’ between two teams – two halves of the class. The first team begins serving by stating one of the strengths of the Roman system, (e.g. ‘aqueducts brought fresh water to towns’), then the other team returns with a weaknesses (‘sewers sometimes didn’t have enough water running through them to clean them out and this spread disease’).

Pages 28–33: focus on the work of Hippocrates and Galen. It is important that students get a strong grasp of the work and influence of these pioneers if they are to understand fully how difficult it was to change attitudes in the Renaissance period. A good way to begin is a short role-play with you in the role of Hippocrates, explaining and demonstrating your Theory of the Four Humours. For details see <http://www.thinkinghistory.co.uk/ActivityBase/FourHumours.html>

This role-play has been kept simple because for most students simplicity and clarity is the key. It needs about ten minutes, plus any follow-up recording you wish to do. Focus on:

- the idea that having too much or too little of a humour was believed to cause illness; and
- treatments therefore focused on restoring the balance, e.g. by bleeding.

Having introduced this theory, students can complete the table on **page 28** (Activity Sheet 12). Teachers with a dramatic streak could don a toga to build understanding of Galen. Gather students around a skeleton borrowed from the science department. Recount your efforts to find human bodies to study (using Source 1 on **page 31**) and then explain your achievements. Make sure you stay in character as short-tempered and boastful.

From this performance students could begin to tackle the activity on **page 33** (Activity Sheet 13 of this book) before completing it from **pages 30–32**.

Alternatively students could create their own record of Hippocrates and/or Galen using their own cameras. This is particularly worth doing because it is such a memorable activity and so facilitates recall of detail. Just to be on the safe side, the points made in the photograph are:

- books labelled Hippocrates – Galen built on Hippocrates’ work
- bleeding cup – he used bleeding based on the Theory of the Four Humours
- Roman sword – he learned about anatomy as a doctor to gladiators
- skull – he emphasized the importance of studying human bodies
- monkey – where he could not use humans he used the most closely related animals
- books labelled Galen – he wrote many books
- cucumber and pepper – treatment by opposites.

Galen’s work can also be recorded using a ‘Role of the Individual’ chart (Activity Sheet 14). These charts will be used again a number of times to record the significance of individuals, so it is not essential to use one here, but the chart again provides a good revision model.

Finally, before moving onto the Exam Busters on **pages 34–35**, focus your plenary session on completing the Memory Map for Roman Britain from **page 21**. This ensures that students have a strong body of evidence to use when comparing Roman and medieval medicine.

Exam Busters (pages 34–35)

These pages provide the first detailed guidance on answering exam questions and focus on answering questions about the key features of medicine within a period or the key features of an individual’s work. Activity Sheet 15 provides the text of the student answers on **page 35** for annotation and improvement. You could continue to consolidate students’ ability to answer this kind of question by setting any of the following:

- What developments in medicine were made by William Harvey during the Renaissance?
- What did Edwin Chadwick do to bring about changes in public health?
- What improvements in nursing were made by Florence Nightingale?

Medicine in the Middle Ages (pages 36–49)

The second half of this section again offers a choice of strategies. **Page 36** introduces the theme of Change or Continuity. Students can place the listed topics on a Progress–Regress washing-line (Activity Sheet 16) and identify the effects of the collapse of the Roman Empire on **page 37**. After this you again have a choice of all students studying all topics or dividing topics amongst groups as described for the Roman Britain section.

Having completed their research it is again important to end with an effective plenary, completing the students' washing line by adding evidence to justify the placement of each topic and then using these details to compile a Memory Map for medieval medicine. The washing line and Memory Map will together give students the key information they need without them becoming overloaded with detail.

Finally **pages 48–49** pull together the whole section, focusing on the reasons for changes.

Exam Busters (pages 50–51)

This exam advice helps students answer questions, asking them to analyse and evaluate change. Activity Sheet 17 provides a copy of Approach A to get students thinking about this structure before they read the critique of it in the book.

Outcomes to look for

The review activities will help you identify students' understanding and knowledge of:

- a) the key features of medicine in each period – Roman and medieval
- b) ideas about causes of disease, especially the Theory of the Four Humours
- c) methods of treating and preventing disease, including public health measures
- d) Galen's importance in influencing medicine over a long period and the strength of his influence on the training of doctors
- d) the roles of factors in affecting medicine e.g. religion and the church, wars, government.
- e) why health was poorer and lives were, on average, much shorter than today.

Meet the Examiner pages help you identify the strengths and weaknesses of students' ability to answer questions describing key features of a period or an individual's work, or analysing and evaluating change.

Section 3: Medicine in 1350 – why was the Black Death so devastating?

Overview

The Core content begins *c.*1350, so you may well be starting detailed work here rather than with the Extension Study in Section 2. However, even if you are not using Section 2 in detail, look at it carefully to see if any of the activities could help with this section – for example the Memory Map (**pages 20–21**) and the digital camera activity on Galen (**page 33**).

This section provides an overview of the ‘state of medicine in 1350’, a launch pad from which to move into the Renaissance. It uses the Black Death as the focus for investigating ideas about the cause of disease, treatments and methods of preventing illness and the continuing and powerful influences of Galen and the Catholic Church. The key points are all pulled together in the Review Activity on **page 61**, where you can also link to the overall core enquiry question of why lives were shorter and health poorer in the past.

If you have used the Extension Unit in Section 2, then this section acts as a summary via the new topic of the Black Death. You will probably not use the Medical Moments in Time material on **pages 54–55**, since students will have seen it before.

Resources	<ul style="list-style-type: none"> • Student’s Book pages 52–61 • Activity Sheets 8, 9, 18, 19 • Dynamic Learning 1: four activities (see page 00 of this book) • Dynamic Learning 2: short films of medieval healers at work • Dynamic Learning 3: activities on how Galen’s work was preserved and on making inferences from sources about medieval medicine.
Exam Busters	<i>Smarter Revision</i> <ul style="list-style-type: none"> • ‘Role of the Individual’ chart (page 57).
Objectives	<p>By the end of this enquiry students should have developed their knowledge and understanding of:</p> <ul style="list-style-type: none"> • the nature of medicine <i>c.</i>1350 • ideas about the causes of disease • treatments and ways of preventing illnesses • events and factors that affected the development of medicine, particularly the collapse of the Roman Empire and the continuing influence of the Galen. <p>Students should also be able to relate the nature of medicine in this period to the overview and to the core enquiry by being able to explain why health was poorer and lives still, on average, much shorter than they are today.</p>
New to teaching ‘Medicine’? Priority decisions	<ol style="list-style-type: none"> 1. How will you introduce this period to make an impact, create interest and get students thinking about what kinds of medicine they expect in the Middle Ages? 2. If you have covered Section 2, how will you maintain pace and interest? For example how will you organize the detailed work on pages 56–60? Will everyone do everything or will you divide topics amongst groups? 3. How will you relate medieval medical developments to the overall core enquiry?

Introduction

From your point of view:

- You will tackle this section differently depending upon whether you have covered Section 2 or you are beginning here.
- Look first at **page 61** – the Review – so that you know what the target activity is.

Now on to working with your students! It is a new period of medical history so you need to check students' chronological understanding. Use a timeline or classroom display to identify the Middle Ages and where the 1340s and the Black Death lie in relation to the whole course.

It is also important to get students into the habit of thinking for themselves, not waiting to be told things and given conclusions. A good starter is the predictive activity 'Introducing the Middle Ages' in Dynamic Learning 1, which will get students thinking about how key aspects of medieval life affected medicine and hence why medicine did not improve in this period. This is important because:

- it requires real thinking about the connections between the nature of life in the Middle Ages and the kinds of medicine available; and
- it provides students with the chance to establish the key features of medieval medicine.

This helps reduce the chance of students seeing this and other sections as being solely about the acquisition of information. Instead it supports the idea of the whole Development Study being an enquiry to which understanding of each period contributes.

An alternative opening is to use a role-play in which you play the part of a medieval physician – a medieval hat and maybe a black gown is all the costume you will need. Focus on the news of the approach of the Black Death but be confident and reassure your patients – you, the great physician, know how to deal with this pestilence. Then explain your thinking and methods. How long you take on this depends on your own confidence in your role, the class's reaction, and how much detail you want to get across. However, brevity (say five minutes) is a good idea for less experienced teachers. In planning this, start with a list of points you want students to take away and create a recording sheet for them (based on **page 61**). The degree to which students take this seriously depends at least as much on the clarity and usefulness of this task as on your dramatic recreation – although remember that confidence in your own performance and eye-contact that communicates your belief that you really are a fourteenth-century physician is vital!

See <http://www.thinkinghistory.co.uk/ActivityBase/MeetOswaldMedievalPhysician.html>

Here again, this is fun with a purpose. After a debriefing from the meeting with the physician, students should be able to suggest reasons why the Black Death was so devastating.

Identifying changes and continuities (pages 50–57)

Pages 52–53 introduce the Black Death, although students should be able to remember something of this event from Key Stage 3. Before using the book ask what they can remember and praise good recall, especially about its impact. Then move into this material, using Activity 1 on **page 52** as a group competition against the clock. The story can be recapped using the decision-making activity on the Black Death in Dynamic Learning 1. Activity Sheet 18 can be used to record answers during their Speed Test hunt.

Pages 54–55 then uses the Medical Moments in Time approach to provide an overview of the main features of medieval medicine. If you covered Section 2 then you will have used this before, so you may well omit it this time. If you do use this page, then pace is important in the activities on **page 54** – use clear time limits as students hunt for evidence (perhaps noted on Activity Sheet 8 from this book) and count the time down to maintain a sense of urgency. The specific examples in the speech bubbles all come from medieval sources. At this stage you could use Activity Sheet 19 to build up evidence to answer the Section enquiry question or you could use a Memory Map for the same purpose, modelled on **pages 20–21** (Activity Sheet 10), which can then build it up across the rest of this section.

Pages 56–60 then build up detail of the main features of medicine *c.*1350, consolidating the outline created so far. Students need to understand the nature of medieval medicine and also be aware of the extent to which it was still based on centuries-old methods and learning, and particularly that the work of physicians was based on Greek and Roman writings, hence the focus on Galen.

If you have not covered Section 2, then all students need to work through **pages 56–60** and create a 'Role of the Individual' chart for Galen. This is the first Role of the Individual chart in the book (Activity Sheet 14 from this book and Dynamic Learning 3), so model this by working with the class to build up a draft version on the board to which they can add details to create their own final version. You may also

want to use the digital camera activity on **page 33** as part of this work – it is a fun and effective way to record Galen’s importance (see **page 00** in this book for details).

If you have done Section 2 then this material provides a useful means of summarising medicine in 1350, but you can speed things up by asking groups to tackle individual topics (the Four Humours, the importance of Galen, ideas about causes, the impact of the church and methods of treatment and prevention) and report back their findings to the whole class. It also gives a sense of both teamwork and individual responsibility across the class – transferable skills to impress SMT!

If you are introducing the Theory of the Four Humours, a good way to do this is to use a short role-play with you in the role of Hippocrates, explaining and demonstrating your theory. For details see <http://www.thinkinghistory.co.uk/ActivityBase/FourHumours.html>

This role-play has been kept simple because for most students simplicity and clarity is the key. It needs about ten minutes, plus any follow-up recording you wish to do. Focus on:

- the idea that having too much or too little of a humour was believed to cause illness
- treatments therefore focused on restoring the balance, e.g. by bleeding.

Page 61 – the Review Activity – provides students with a summary of the key points, but asks them to transfer these into another format – a Memory Mapage. If they have already begun to draft this, so much the better. Transferring information from one format to another can be a very powerful revision tool.

Also at this stage, go back to your Living Graph summaries from **pages 8–9** and update them. Also review your classroom display and relate work on this period to the Big Story established earlier.

Outcomes to look for

The Review and ‘Meet the Examiner’ activities will help you identify students’ understanding and knowledge of:

- a) the continuities in everyday medical treatments and ideas for ordinary people, e.g. belief that God sent disease, use of herbal remedies
- b) continued belief in the Theory of the Four Humours among qualified physicians and dependence on Galen’s books
- c) the roles of the Catholic Church and religion in influencing medicine
- e) why people were unable to understand the cause of the Black Death and prevent its spread
- f) why health was still poorer and lives were still, on average, much shorter than is the case today.

Section 4: Why were the Medieval Renaissance and Scientific Revolution so important when they didn't make anyone healthier?

Overview

The major problem faced by students working on this period is establishing an accurate sense of the balance of change and continuity. Students can be misled by the teaching time spent on new discoveries and techniques into thinking that medicine had been transformed by 1700. They can also assume that because new ideas were an improvement they were automatically taken up straightaway. In part their own age and being accustomed to novelty mean it's hard to give due weight to the power of conservatism. Therefore this section tackles this problem head-on by building the central activity around the clash of ideas between conservatism and enquiry. The concluding Exambuster material grows directly out of this issue by asking students to explain why these discoveries did not lead to better health. This in turn enables you to link into the overall core enquiry for the whole book.

Pages 62–67 establish the wider changes taking place in this period and set up the core activity on the struggle between 'Enquiry' and 'Conservatism.' This activity sets students to collect evidence to see which boxer in a boxing match between Enquiry and Conservatism came out on top by 1700.

Pages 68–69 provide a Medical Moments in time illustration so that students quickly gain an overview of changes and continuities and can start collecting evidence quickly.

Pages 70–81 provide more detailed evidence for each of the rounds (Vesalius, Harvey, Growth of Science etc) in the boxing match so that students can build up evidence in the chart from pages 66–67.

Pages 82–85 (plus Activity Sheet 25) provide the conclusion to the enquiry, providing guidance on answering exam questions analysing factors and at the same time enabling students to answer the Section enquiry question. This is linked to concept mapping activities summarising the reasons for the changes and continuities in this period.

Resources	<p>Student's Book pages 62–87 TRB Activity Sheets 20–26 Dynamic Learning 1 – four Activities (see page 00 of this TRB) Dynamic Learning 2 – Harvey and the circulation of the blood Dynamic Learning 3 – How would you treat Charles II? How would you try and stop the plague in 1665?</p>
Exambusters	<p><i>Meet the Examiner</i></p> <ul style="list-style-type: none"> Decoding exam questions; Answering 'key features' questions (pages 84–85) Analysing the roles of factors (pages 86–87) <p><i>Smarter Revision</i></p> <ul style="list-style-type: none"> Using Concept Maps to explain changes and continuities (pages 82–83)
Objectives	<p>By the end of this enquiry students should have developed their knowledge and understanding of:</p> <ul style="list-style-type: none"> features of the Renaissance that affected the development of medicine e.g. attitudes to enquiry, printing, art etc. features of the Scientific Revolution in the 1600s and 1700s that provided the basis for 19th century developments

	<ul style="list-style-type: none"> major developments in medicine, particularly the increased focus on scientific methods reflected in the work of Vesalius, Harvey and the Royal Society. <p>The extent to which most medical practice had not changed and why new discoveries had not immediately led to better health.</p> <p>Students should also be able to relate developments in this period to the overview and core enquiry by being able to explain why health was poorer and lives still, on average, shorter than today.</p>
<p>New to teaching ‘Medicine’? Priority decisions</p>	<ol style="list-style-type: none"> 1. Do you start by focussing on the changes or the continuities – if the continuities are often underestimated by students would it help to start with them? 2. How will you create a sense of discovery about the ideas of the Renaissance and the Scientific Revolution? 3. How will you organize the detailed work on factors on pages 70–81? Will everyone do everything or will you divide topics amongst groups? 4. How can you help students distinguish between new theories and knowledge and the continuities in everyday medicine? 5. How will you relate medieval medical developments to the overall core enquiry?

Introduction (pages 62–63)

It is important at the outset to reinforce students’ sense of chronology – both the placing of this period in time and what kinds of events were happening c.1400–1700. For example:

- can they place the Renaissance on a blank timeline?
- which events and people do they remember from Key Stage 3? What was changing at this time? (e.g. printing, art, knowledge of the wider world but many aspects of daily life show little sign of change).

Students need a sense of a changing world but one in which change is slow and surrounded by a lot of continuities.

This discussion can then lead into **pages 62–63**, which link general breakthroughs in the period to two key medical discoveries. The main points to establish here are that:

- a) there were some significant medical changes which are not happening in isolation – they are linked to wider changes in thinking
- b) these don’t make people healthier – as announced by the town-crier on **page 62**.

It’s important to spend a few minutes focusing on this conundrum – can students suggest why important changes didn’t make people healthier? If necessary, look back to their overview created in the Big Story section to look at the changes which followed in the nineteenth century and after.

A good and motivating way to emphasise the lack of change in treatments is the ‘How would you treat Charles II?’ decision-making activity (Activity Sheet 20 and Dynamic Learning 3). This activity has often been used in previous textbooks (see ‘White’ Medicine book **pages 106–107**) but we left it out of the main book this time as it works even better on the CD. Having had the fun of making the decisions students need to think about how much evidence of changes they have come across in treatments and ideas about medicine – the answer is none and there’s no evidence of the impact of Vesalius or Harvey. This again raises the core questions about why important breakthroughs didn’t affect health and, secondly, why were they so important if they didn’t affect health?

Introducing the core activity – the big fight between conservatism and enquiry (pages 66–67)

Pages 66–67 need careful coverage to get the ideas clear – it is important that after reading or listening to your explanation that students explain the key ideas here in their own words.

Activity Sheet 21 provides a copy of the chart from **page 67**, which doubles as a summary and score card for the main boxing match activity. Activity Sheet 22 and the ‘commentary’ activity on Dynamic Learning 3 enable students to draft and record their commentary on the fight between enquiry and conservatism which could then be recorded as a podcast for revision. Make sure the

conclusion to this commentary links directly into the Section enquiry about the absence of impact of the breakthroughs on health.

Establishing a summary of continuities and changes (pages 68–69)

Pages 68–69, ‘Medical Moments in Time – London 1665’, provide a summary of medical changes and continuities that can be used to kick-start the boxing match activity. Divide the class into six groups, each group investigating one topic/round for the chart on **page 67**. Give them a short time limit, then report back so that everyone can begin to fill in column 3 of the chart, which details medical ideas and practice. This division into groups gives everyone experience of this task without it becoming overly prolonged. Then model the commentary using this first set of information – provide your own commentary on one round and ask each group of students to provide their own on the round they researched.

The Big Fight – collecting evidence of enquiry and conservatism (pages 70–81)

Now that the outline has been established, you again have a choice of strategy:

- 1) Every student (perhaps in pairs) works with every spread between **pages 70 and 81**, completing their own chart and commentary. This makes sure everyone is exposed to plenty of information, but for many students there is a danger of their minds being cluttered by too many details and this obscuring the overall pattern. This is a good strategy for able students capable of working quickly, independently and efficiently.
- 2) Work as a class on Vesalius (**pages 70–71**) modelling the activity and recording the evidence in the chart, then ask every student to work on Harvey or the growth of science, following the path established on Vesalius. This gives practice and emphasises the importance of good feedback to the whole class so that everyone can build up evidence on the pages they have not worked on directly. Finally, divide the topics on **pages 76–81** (rounds 3–6) amongst the class, with each group tackling a different round.

This latter approach may provide the best balance of confidence-building, independence and completing a full set of notes for revision. Students can support their chart by completing Role of the Individual charts

(Activity Sheet 14 and Dynamic Learning 3) for Vesalius and Harvey.

Harvey’s work on the circulation of the blood can be puzzling for many students – explanations never seem to work well in books and diagrams. To give a more effective explanation try to physical activity explaining his discovery at

<http://www.thinkinghistory.co.uk/ActivityBase/ArteriesHarvey.html>

This activity takes 10 minutes, requires a couple of tins of tomatoes instead of blood and will give whichever student plays the role of the heart plenty of exercise!

Having completed column three of the chart, spending time on completing column four (the score card column). Identifying the evidence for the scoring provides effective revision. The task of writing their own commentary is a really helpful way of consolidating students’ knowledge.

Commentaries written, ask two or three groups to give their commentaries with the prize going to the best ‘commentary performance’. Then relate the task back to the overall question about why health was no better despite the breakthroughs – what reasons can students now suggest to explain this paradox?

Review and Meet the Examiner

Pages 82–83 explore the reasons for the continuities in this period. This activity introduces concept maps (see also Activity Sheets 24 and 25 and Dynamic Learning 3) which offer an opportunity for kinaesthetic activity, using the artwork on **page 83** as a guide. Some students at least will understand far more about the impact of factors if they take part in this kind of physical activity than if it is completed as a paper exercise. **Pages 82–83** provide a nearly completed example, showing which factors played a part in hindering development and concentrating on students identifying the role of the active factors and the links between them. If you wish you could then use Activity Sheet 25 to analyse the reasons for change at this time. Activity Sheet 25 is more demanding, asking students firstly to decide which factors helped create change before moving onto the other stages.

As the idea of factors may be difficult for some students to grasp it helps to portray them influencing Medicine in very concrete ways. One way to do this is to set pairs the task of being a factor: ‘This afternoon, Mr Smith, we are going to be War ...’ Their task is to spend one minute explaining War’s place on a ‘Helped Medicine – Hindered Medicine’ washing line for this period. You could help them construct their

script by offering sentence starters such as, ‘War is near the Helped Medicine end because ... however it also ...’

Pages 84–85 provide Meet the Examiner advice. First, the pages repeat advice provided in Extension Unit 1 on **pages 48–49** on decoding questions and answering basic ‘What did X do?’ questions. This advice needed repeating as many students will not be looking at Extension unit 1. **Pages 86–87** then focus on answering questions which analyse the roles of factors. The material is very structured with a particular emphasis on:

- a) using ‘connectives’ to write effective explanations
- b) writing effective conclusions.

This is therefore a page you may wish to return to when tackling other examples of this kind of question.

In previous sections this would have been the moment to link the developments in this period to the overall core enquiry about why lives were shorter and health poorer in the past. However this link is made explicitly clearly in the ‘bridging’ section (Section 5) that follows, so there is no need to do so here.

Outcomes to look for

The Review and Meet the Examiner activities will help you identify students’ understanding and knowledge of:

- a) The key features of Renaissance society and the Scientific Revolution that led to changes in medicine and how these were connected, particularly the development of a questioning, enquiring attitude.
- b) The continuities in medical knowledge and treatments, including belief that God sent disease and continued belief in the Theory of the Four Humours among qualified physicians and dependence on Galen’s books.
- c) Why important medical breakthroughs had not led to improved health or life expectancy by 1750 but had also created a strong basis for later improvements.
- d) The roles of factors in both helping and hindering medical developments.

Meet the Examiner pages help you identify the strengths and weaknesses of students’ ability to:

- describe key features of a period or an individual’s work
- analyse the roles of factors in explaining changes and continuities
- use connectives to write effective explanations
- write effective conclusions, directly answering a question and avoiding ‘sitting in the fence’.

Section 5: Medicine after 1750 – what were the most important changes?

Overview

In Sections 1–4 the emphasis has been mainly on the continuities which explain why health and life expectancy were often poor compared with today but from Section 6 we leap into significant discoveries and increasingly rapid change. This section provides the chance to pause briefly so that students consolidate their big picture of medical developments – firstly up to the late 1700s and secondly to get a sense of the major changes after 1800.

Pages 88–89 provide a summary of medical developments so far in chart form and students can use this to think about why there had been no real improvements in health and life expectancy by *c.* 1750.

Pages 90–93 look ahead from 1800, using Medical Moments in Time pages for 1848 and 1935 and the summary chart on **pages 94–95** to build up an overview of the key medical developments after 1800 and the pace of change which explain improving life expectancy.

Resources	<ul style="list-style-type: none"> • Student’s Book pages 88–95 • TRB Activity Sheets 27–29 • Dynamic Learning CD 3: Medical Moments in Time pages.
Exam Busters	None
Objectives	<p>By the end of these enquiries students should have developed their knowledge and understanding of:</p> <ul style="list-style-type: none"> • the overview of medical history to <i>c.</i> 1750 including major developments and the pace of change and continuity • how these developments explain why health was poorer and lives, on average, shorter than today but also how developments were beginning to create the possibility of improvement • the major developments in medicine after 1750 and have begun thinking about which of the themes have contributed most to improved health and life expectancy.
New to teaching ‘Medicine’? Priority decisions	<p>This is predominantly about pace – balancing the need for overview with the danger of slowing down too much.</p> <ol style="list-style-type: none"> 1. Pausing to look back is important for consolidating knowledge and maintaining a sense of the overview but how long will you spend on pages 88–89 without losing momentum? 2. How long will you spend on the looking ahead overview – will you, for example, ask students to create their own medical Moments in Time page for today. 3. How strongly will you focus on Activity 2 on page 94 of the Student’s Book, which relates to the overall core question about improving life expectancy?

Why hadn't life expectancy improved by the 1750s? (pages 88–89)

Unlike other sections, this 'bridging unit' has no overall introduction – you go straight into this first part. The activities on **pages 88–89** provide the chance to overview the main developments so far and to relate them to the overall book enquiry question. An alternative, before using the book, is to set students the task of creating their own timeline for one of the core themes, to test their recall and understanding. Give them a short time-limit, say four minutes, then compare their versions with those in the book. This is a good exercise for building recall. Then use the activities in the book for oral discussion rather than written work.

This is also the point to make sure that the Smarter Revision activities (Memory Maps, Role of Individual charts, Factor charts, Living Graphs) are up-to-date.

When and why did life expectancy improve after 1800? (pages 90–95)

These pages provide an overview of key developments from 1800 to today. The essence again is pace, using the Medical Moments in Time illustrations for 1848 and 1935 (also on Activity Sheets 27–28) to compare developments and think about the pattern and pace of change. Everyone has to work on both illustrations (and again work to time-limits to focus research), but the best comparative strategy is to tackle questions 1 (on changes and continuities) on **pages 90** and **92** together, then move onto the questions 2 and finally to the questions 3.

You could also ask students what they would put into a Medical Moment in Time picture for today. As a class they could create a planning brief for an artist, identifying the features to be drawn and the speech bubbles to be added. Use the themes in the 1848 and 1935 illustrations as ideas for comparison.

The Medical Moments illustrations lay the basis for the overview chart on **pages 90–91**. You can help students focus on the details by:

- Asking them to summarise in two or three sentences the main developments in one of the themes.
- Beginning Memory Maps for the nineteenth and twentieth centuries and adding details to the Living Graphs for each theme.
- Using the cards on Activity Sheet 29 in conjunction with Activity 2, to think about why health and life expectancy have seen such improvements since 1800. This provides the best means of linking the themes that will be studied in Sections 6–9 (including public health, if you choose that Extension Unit) and relating back to the core question at the heart of the book. It is also worth spending time on this activity because it is one way of helping students get a perspective on the differences between their lives and their ancestors' lives. Students could add information to the cards from the chart and then arrange the cards in a 'diamond nine' style pattern (most significant factors at the top, least significant at the bottom) to create an initial explanation for the increase in life expectancy after 1800. You could also refer back to the timeline of life expectancy on **pages 4–5**. Put up on the classroom wall the theory that is chosen at this stage, then come back to it after Section 9 and see if it stands up to the evidence or the students wish to change it.

Outcomes to look for

The activities will help you identify students' understanding and knowledge of:

- the overview of medical history to *c.* 1750.
- which factors had the most impact on medicine to *c.* 1750 and how they affected medicine.
- the key developments in medicine after 1800 and how they contributed to improving health.

Section 6: Fighting disease after 1800 – which medical breakthrough deserves the gold medal?

Overview

This section brings together the work of Jenner, Pasteur and Koch, plus the discovery of DNA and its impact. The major problems students tend to have are with:

- picking out the particular importance of each development
- identifying the connections between these developments
- separating the science from the history – explanation needs to be in terms of factors such as war, government and the broad category of science and technology, not the minutiae of experiments. So don't overdo the science!

To help overcome these problems, give students the task of deciding which breakthrough was most significant – requiring them to focus on the particular contribution of each development to the fight against disease and how they were interrelated.

The Meet the Examiner unit on **pages 112–13** then emerges directly from the theme of the section to guide students in analysing the importance of breakthroughs. The second Meet the Examiner unit on **pages 114–15** focuses on developing inference skills to make comparisons across time and so acts as a conclusion to the whole theme of understanding of the causes of disease. At this stage you can also return briefly to the overview question of why health and life expectancy have improved so much.

Resources	Student's Book pages 96–115 Activity Sheets 30–35 Dynamic Learning 1 – Activity on Pasteur – The Discovery of DNA – why did it happen then? Dynamic Learning 2 – Jenner and vaccination explanatory animation Dynamic Learning 3 – The story of Pasteur and Koch – What can we learn about Jenner? – source activities
Exam Busters	Meet the Examiner Analysing the importance of a medical discovery (pages 112–13) Using inference skills to make comparisons in medicine across time (pages 114–115)
Objectives	By the end of these enquiries students should have developed their knowledge and understanding of: <ul style="list-style-type: none"> - the importance of Jenner's work on vaccination but why it did not lead to other medical breakthroughs - the work of Pasteur and Koch: the reasons for their breakthroughs and their significance in the overall pattern of medical history. - how their work was linked to later developments in the fight against disease - how the significance of DNA was discovered and the kinds of medical developments that have followed and may follow. - the contribution of these developments as a group to improved health and life expectancy

<p>New to teaching ‘Medicine’? Priority decisions</p>	<ol style="list-style-type: none"> 1. How will you make concrete the mix of conservatism and enquiry in the story of vaccination? 2. How are you going to explain SIMPLY <ol style="list-style-type: none"> a) the theory that germs cause disease? b) the importance of the discovery of DNA? 3. How will you help students see the connections between the various developments?
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Introduction (pages 96–98)

This topic can go wrong at the first hurdle if we assume students know what causes infectious diseases. If they don't know that bacteria (also referred to as germs or microbes) are the cause then the revelation of Pasteur's germ theory overturning centuries of other ideas can't seem as significant as it should do.

So begin by asking students why they recently caught a cold and (briefly) how people had explained such illnesses earlier in history – focus on the Theory of the Four Humours, ‘gods and spirits’ and bad air. Then use page 96 to consolidate students' understanding, particularly that

- people had been seeking a logical explanation for disease for many centuries (the Theory of the Four Humours and ‘bad air’ being logical even if wrong)
- the microscope and other technological developments were enabling scientists to investigate the body much more minutely than ever before.
- this had all led to other theories, notably spontaneous generation which was linked to bacteria but drew the wrong conclusion from their existence.

Page 97 then summarizes the key breakthroughs with an emphasis on keeping it simple in terms of both explanation and activity. Activity 1 suggests an oral explanation because students will do this more readily and more effectively than a written explanation where the temptation is to copy out words without engaging brain and so not understanding the significance of each breakthrough. We have also kept this outline simple because the proximity of science can fluster students and some teachers. Keep the ‘science’ simple – this is History, after all, not Chemistry or Biology or other mysterious disciplines.

Pages 98–99 set up the core activity for this section, deciding who should mount the podium on **page 99** to collect the medals for ‘most significant breakthrough’. At this stage it's worth asking students to pencil in some first ideas (from **page 97**) onto their copy of the Significance Chart on **page 97** (Activity Sheet 30) as this both follows the normal enquiry pattern of question – hypothesis- research – revised

hypothesis but it's another opportunity to establish the key elements of each breakthrough.

The key developments (pages 99–111)

The core activity for each of the three topics (Jenner, the work of Pasteur and Koch, and DNA) is to complete the significance chart from **page 98**. Other activities are designed to help students understand the key features of each breakthrough and why they took place.

A good introduction is to show Source 1 from **page 100** (Washington's letter to Jenner) on your whiteboard, but to hide the names of the author and recipient and reveal only parts of the letter at a time. Which breakthrough do students think this letter is about? Who might have received it? Who might have written it? Then reveal the topic and the people involved, and move into the topic of vaccination. (A version of this activity can be found on Dynamic Learning 3).

Jenner and vaccination (pages 100–3)

You could either work through the material using the Activities as laid out, or begin with the final picture, Source 2 on **page 103** (also Activity Sheet 31 and Dynamic Learning 3). First see what answers students can suggest to the questions around the picture – this helps them focus on the details in the picture – then set a speed-reading task to find the answers from **pages 100–3**. The time limit will vary from class to class, but 10 minutes is a maximum. Remind students how to go about ‘speed reading’ to be effective – the key points are to look for key words and phrases, and to keep the questions in mind. For an easier task and faster outcome, divide the questions among the class, but make sure that each question is given to more than one group so that you can compare answers at feedback time.

Whichever route you take, you will consolidate students' understanding by using the significance

chart on **page 98**. You could also help students assess the extent to which medical science had developed by using the ‘washing line’ activity on Activity Sheet 32, or by setting students to complete a Role of the Individual Chart for Jenner (Activity Sheet 14). It is vital for students to understand that Jenner’s work on vaccination was a scientific cul-de-sac (albeit a tremendously important cul-de-sac in terms of human benefits), because he did not know why it worked.

Activity Sheets 34 and 35 provide further sources on Jenner should you wish to take the opportunity to practice skills analysing sources in preparation for your chosen Source Enquiry.

Pasteur and Koch (pages 104–7)

The work of Pasteur and Koch can seem the most complex part of the whole course, largely because it’s easy for students to feel bombarded with individual developments and so miss the way they are linked. One way to describe their work is to liken it to a game of ‘pass the parcel’, with each man in turn unwrapping a layer of the secrets of defeating disease. However, if Pasteur had not found the ‘parcel’ in the first place, and unwrapped the first layer, these developments would not have begun at that time.

These pages therefore focus on significance from the outset, rather than first getting students to take in the sequence of events. Go straight into compiling the significance chart from **pages 104–5** (how the breakthroughs happened and why) and then **pages 106–7** (the longer-term impacts of their work)

To further consolidate students’ knowledge, use the completed chart as the basis for compiling Role of the Individual charts for both Pasteur and Koch.

Unravelling DNA (pages 108–11)

Again, it is important not to worry yourself or students about the science, but to focus on:

- the reasons for Crick and Watson’s breakthrough (**page 109** and Activity Sheet 35)
- the impact of this discovery on medicine (**pages 110–11**)

The text on current developments has necessarily been couched in cautious language, as much remains to be discovered. By the time you use this material, other examples will have appeared, hence the updating Activity on **page 111**.

Conclusions and Meet the Examiner tasks (pages 112–15)

Having completed work on the three breakthroughs, return to the activities on **pages 98–99**. Make sure the significance chart has been completed and award the

medals according to students’ findings. The important activity here is for students to argue the case for their choice – give each pair or group a one minute time limit to present their findings orally. These activities then pave the way for the Meet the Examiner activities on **pages 112–15**.

Analysing the importance of a medical discovery (pages 112–13)

This advice guides students on how to answer this type of question effectively. One approach is to give students one of the events in the question at the top of the page, and ask them to draft an answer – in a short time limit, say 5 minutes. Then give them the advice on **pages 112–13** and ask them to revise their work on the basis of this advice. This could be done in pairs or individually, but not in larger groups. Tackling the task this way round means that students are more likely to focus on the specifics of the advice in order to improve their draft answer. Having tackled one of the events in the question, they could then move on to draft a really good answer for the other part.

Using inference skills to make comparisons in medicine across time (pages 114–15)

Again a useful strategy is to ask students working in pairs to draft an answer without access to the advice on page 115, then to read the advice and mark and comment on their own answers. The advantage of working in pairs is that it facilitates constructive discussion and sharing of ideas. Being explicit about what needs to be improved is obviously an important part of learning. Finally, students can redraft their answers.

Outcomes to look for

The general activities and the Meet the Examiner activities will help you identify students’ understanding and knowledge of:

- the work of Jenner, and how this shows the balance of scientific enquiry and conservatism *c.* 1800
- the significance of the work of Pasteur and Koch, in terms of their contribution to overall health and life-expectancy, both in the short term and in the long span of medical history.
- the significance of the discovery of DNA and its effects to date
- the reasons why these key breakthroughs happened when they did

e) the relative importance of the key developments and how they were linked together.

The Meet the Examiner pages help you identify students' strengths and weaknesses in:

- analysing the importance of a medical discovery
- using inference skills to make comparisons across time.

Section 7: Why have methods of preventing and treating illness changed so much since 1750?

Overview

This short section is built around explaining changes in prevention and treatment. [This doesn't include Public Health measures covered in Section 9 if you use that Extension Study.] The first spread sums up methods in the nineteenth century before **pages 118–19** set up the core task, a 'Factors Hunt' across the topics on the next four spreads looking for reasons for change. Here is the major teaching decision as you will need to decide – for each class individually – whether to ask all students to tackle all four topics or whether to divide them amongst the class as a research exercise. Finally the Meet the Examiner unit on **pages 128–29** doubles as a conclusion by linking the collection of evidence in the Factors Chart to answering a typical exam question on factors.

Resources	Student's Book pages 116–29 Activity Sheets 36–39 Dynamic Learning1 – Spot the continuities video clips; Penicillin: who, when and why? Dynamic Learning2 – Magic bullets animation
Exambusters	Meet the Examiner Analysing the importance of factors in creating change (pages 128–29)
Objectives	By the end of these enquiries students should have developed their knowledge and understanding of: – major developments in preventing and treating illnesses, from patent remedies to vaccinations and penicillin to the increased use of technology. – how antibiotics were discovered and developed and the medical significance of this development. – the major reasons for these changes and be able to explain which factors were the most important and to provide evidence to substantiate their choices.
New to teaching 'Medicine'? Priority decisions	1. How can you help students understand the extent of continuities in the 19 th century and the thinking that lay behind e.g. the use of patent remedies? 2. How will you use the core 'factors hunt' task? Will you ask every student to tackle all four topics or divide them amongst the groups?

Introduction (pages 116–17)

Many students, having studied Pasteur, assume that all aspects of medicine were revolutionized and rapidly became much more scientific and effective, whereas in reality everyday ideas and methods lagged decades behind. Only by having a good understanding of the conservative nature of prevention and treatment in the 1800s will they be able to see how dramatic have been the changes in treatments since then.

A possible starting point is to ask students about methods of treating and preventing illness today, before looking at the nineteenth century. This sharpens the sense of ‘then and now’ contrast, but may also pick up some continuities.

The questions on **pages 116–17** therefore focus on understanding the thinking behind the use of traditional and patent remedies, particularly people’s lack of confidence in doctors’ ability to cure illnesses. A good supporting activity can be found on Dynamic Learning 1. ‘Spot the Continuities’ is a series of short clips filmed at Thackray Medical Museum, showing a variety of treatments from the 1800s (e.g. herbal remedies) and asking students to explain which past ideas they are continuities from. One important point is to avoid seeing these sources as ‘entertainment’, as evidence of the ‘funny ideas’ of people in the past. Students need to realise the depth of belief and the absence of alternatives to traditional remedies. Can students spot the comparison of Holloway with Hippocrates in the advertising for Holloway’s tablets and ointments? Can they explain why the comparison is being made?

The Factors Hunt (pages 118–27)

Begin with the research timeline activity on **page 118** (Activity Sheet 36). Get groups to pencil in their ideas, then to use **pages 120–27** to find the answers. Do this ‘against the clock’, e.g. with a 5-minute deadline which you count down, to get a sense of racing against time. This activity has two purposes. It familiarises students with the core material on **pages 120–27**, and it completes the timeline. Spend time looking at and discussing the pattern on the completed timeline – the pace of change across the period, how long there was between the first vaccinations and e.g. the polio vaccine, etc.

Next turn to the Factors Hunt activity, first using the prediction activity on **page 118**. This is a good way to practice using evidence to support ideas.

Which examples of the impact of factors in the past can students suggest to support their choices? What do they know about changes in the nineteenth and twentieth centuries that suggest factor X might have been important?

Now move to the core activity, asking students to use the chart on **page 119** (Activity Sheet 38) to collect evidence of the reasons for change, then lead into the concluding Exam Buster activity, answering an exam question (see below). Familiarize yourself with the guidance on that page before setting students off on their hunt – you may wish to use some of the advice on **page 128** as part of the initial advice.

The main decision is how to divide up this task. You could ask all students to cover all four developments. Alternatively, you could use one development to model the task, then set students to work in groups or pairs on different developments, feeding back their answers to the whole class. If you choose the latter strategy, you don’t necessarily have to use Development 1 as the model – you may wish to use the story of penicillin and antibiotics if you feel this is a topic everyone should look at in detail.

Additional material: The best way of helping students to understand ‘magic bullets’ (page 122) is to use a role-play, developed by Ian Luff, on the discovery of Salvarsan 606, which puts students into the roles of bacteria and bullets. For full details see <http://www.thinkinghistory.co.uk/ActivityBase/Salvarsan606.html>

For the topic of penicillin, Activity Sheet 38 provides a timeline activity to help students understand the stages of development. Ask them to use the book to find out why these dates were important in the story of penicillin and then prompt them to ask questions, such as ‘Why are the gaps between advances so long?’ (relate these gaps to students’ own lives to make them see the reality of a six-year gap); ‘Why were problems overcome?’ Students can then find the answers and annotate their timeline with explanations. Use Activity Sheet 39 if students need help structuring their work on penicillin.

Note – **page 121** contains a reference to the family history of Ian Dawson, who wrote all the text bar the Exam Buster pages. Every so often the text uses the first person – to explain exactly who this is each time would be clumsy so it has been left unexplained. However for your information ‘I’ always refers to me, Ian Dawson. I hope this doesn’t confuse anyone.

Conclusion and Meet the Examiner (pages 128–29)

The Exam Buster guidance and activity doubles as a conclusion to the Factors Hunt activity. Use **page 128** to guide students in revising and finalising their own chart, especially for filling in columns 2 and 3. Then use the guidance on **page 129** to draft exam answers. This could be tackled by taking one ‘factor paragraph’ as a model, with pairs of students drafting a paragraph, then undertaking a peer review activity to revise that paragraph, then finally using what has been learned to write the other paragraphs.

Outcomes to look for

The activities and Meet the Examiner activities will help you identify students’ understanding and knowledge of:

- a) the nature of treatments and methods of prevention in the 1800s and their strong links to previous methods
- b) the range of developments in treatment and prevention that have taken place since the 1800s, including the continuing story of vaccines, the development of antibiotic medicines and the impact of changing technologies
- c) the reasons why these developments took place
- e) the relative importance of the reasons or factors that lie behind these developments.

The Meet the Examiner pages help you identify students’ strengths and weaknesses in:

- identifying the factors that have led to change
- using evidence to support their statements about the impact of individual factors
- evaluating the relative significance of factors.

Section 8: How have hospitals and medical training changed since 1750?

Overview

This short section brings together a range of related topics to create a coherent theme on the development of hospitals and training 1750. We have used the examination inference questions to provide additional structure, giving students the opportunity to draft answers from the sources provided, then return to revise their answers after studying each unit.

Resources	Student's Book pages 130–43 Activity Sheets 40–44
Exam Busters	Meet the Examiner Developing inference skills to spot key changes in medicine (pages 130 and 140)
Objectives	By the end of these enquiries students should have developed their knowledge and understanding of: <ul style="list-style-type: none">• the major changes in hospitals and nursing and why they have taken place, including the role played by Florence Nightingale• how women won the right to qualify as doctors• changes in the training of doctors

Developments in hospitals and nursing (pages 130–37)

The Exam Buster activity on **page 130** tops and tails this theme. As a starter ask students to draft an answer to the Exam Buster question and to keep their answer safe. Keep any discussion brief, a highlighting of ideas, as fuller discussion will come when you return to this question later. Now use **pages 131–37** to build students' knowledge.

It is important to draw out of **page 131** a clear list of the problems in hospitals and nursing in the mid-nineteenth century and why other developments in medicine were creating the need for changes. This is also a good way of recapping the wider developments – germ theory, anaesthesia and antiseptics (and some details on public health reform), but you will need a clear timeline to show where the work of Nightingale fits amongst these developments. Because this section comes after work on germ theory and developments such as vaccinations, students can fall into the trap of assuming that hospital changes follow on from all the other developments.

Pages 132–37 summarise changes in hospitals and nursing. Use Activity Sheet 40 to keep track of both the changes and the reasons for them. Having collected evidence in the chart, students can then tackle the sorting activities on **page 135** (Activity

Sheet 41) and **page 136** (Activity Sheet 42) to decide which reasons have been most significant. For both activities cut up the cards on the Activity Sheets into sets and place them on A3 paper, acting as a tablecloth on desk tops. The students' task is to organize the cards into a pattern of explanation (as described on **page 135**) and to draw lines on the A3 paper, making links and adding explanatory annotations. After discussion, these outlines can be copied onto A4 sheets for adding to files. Completing a Role of the Individual chart for Florence Nightingale (Activity Sheet 14) will also provide good revision material.

Now you have completed work on this theme, return to the Exam Buster activity on **page 130** and ask students to look at their initial answer. What was good about their draft? What would they now add to it, bearing in mind it is worth just four marks?

Developments in the training of doctors (pages 138–43)

Pages 138–9 look at women's battle to qualify as doctors. Activity Sheet 43 provides a core activity, enabling students to complete a timeline of changes in the late 1800s. Activity 6 (creating a living graph of women's roles in medicine) is less structured, but offers students the chance of a kinaesthetic activity that could cover a much longer period. Various

opportunities exist here – students have to work together to plan what goes on the vertical axis (the horizontal axis is time) and what to record – will it be just women’s status in medicine, or will the people on the graph voice their experiences and attitudes? As a group or class task (perhaps divide the class into thirds or halves to see who produces the best graph), this project creates the potential for very effective learning.

The Exambuster activity on **page 140** again tops and tails the theme. As a starter, ask students to draft an answer to the Exam Buster question and to keep their answer safe. Keep any discussion brief, a highlighting of ideas, as fuller discussion will come when you return to this question later. Use **page 141** to think about the status of doctors in 1800 and attitudes towards them, then use **pages 142–43** and Activity Sheet 44 to build students’ knowledge.

This topic provides a second opportunity to develop a graph (as described above for the status of women in

medicine) as a revision device to summarise the training of doctors since the Roman period.

Now that you have completed work on this theme, return to the Exam Buster on **page 140** and ask students to look at their initial answer. What was good about their draft? What would they now add to it, bearing in mind it is worth just four marks?

Outcomes to look for

The activities and Meet the Examiner activities will help you identify students’ understanding and knowledge of:

- a) the major changes in hospitals and nursing and why they have come about, including the role of Florence Nightingale
- b) attitudes to women in medicine in the 1800s and how these were overcome to enable women to qualify as doctors
- c) changes in the training of doctors and the pace at which this happened.

Section 9: Public health: when did it finally improve and why?

Overview

This is the second optional Extension Unit so you will need to have decided whether you are teaching Public Health or Unit 1 on medicine before 1350. One argument in favour of choosing this Public Health option is that it creates a more coherent history of medicine post-1350, providing students with a much fuller picture of why health and life expectancy have changed so much over time because the transformation of Public Health has been a vital part of that improvement. A second reason for choosing this optional Unit is its significance in terms of links to today's world, not just in terms of the growth of government involvement and the setting up of the NHS but because many of the nineteenth and early twentieth century arguments about 'should governments play a part in safeguarding health?' are still being acted out, albeit in other medical contexts. And finally – all that dirt and disease has got good classroom appeal for at least some students!

Having made your choice, one teaching problem with this topic is that can be a classic topic of two halves – dirt and disease create good classroom interest but worthy public health legislation doesn't. So it's easy for students to lose interest in the legislation – when they really need to understand it.

A second problem for students is understanding the pace of change, which was often slower than students think. Because time needs to be spent on the Public Health Acts of 1848 and 1875 and why they were introduced it's easy for students to assume that because they were significant they led to rapid change. The same assumption can attach to the early twentieth century Liberal reforms. So extra care needs to be taken to help students appreciate the slow pace of change, hence the choice of the Section enquiry focussing on when there was the greatest leap forward.

Resources	<p>Student's Book pages 144–81 Activity Sheets 45–57 Dynamic Learning 1 – Did they really care about keeping clean in the Middle Ages? Why were 19th century towns so unhealthy?; Public health or Pasteur?; Create your own story of the NHS plus Introductory activities Dynamic Learning 2 – Public Health through time; Using sources Dynamic Learning 3 – The Mystery of the Water Pump (John Snow and cholera)</p>
Exambusters	<p>Meet the Examiner Analysis and Evaluation the role of the individual (pages 160–61) Analysing and evaluating change (pages 178–81)</p>
Objectives	<p>By the end of these enquiries students should have developed their knowledge and understanding of:</p> <ul style="list-style-type: none"> – why public health conditions were poor in medieval towns, the efforts made to keep towns clean and why they failed – why authorities were not able to make major improvements to public health between 1400 and 1800 – why conditions in 19th century towns were deteriorating, their impact on health and why there was opposition to national reform.

	<ul style="list-style-type: none"> – the changing nature of public health reform since 1900 including the advent of the NHS – the reason why public health legislation was introduced at different times – the changing pace of public health reform since 1800 – the contribution of public health reforms to improved health and life expectancy
New to teaching ‘Medicine’? – priority decisions	<ol style="list-style-type: none"> 1. How will you help students to see this as one overall story, maintaining a focus on the section enquiry? 2. How will you find out what students see as the reasons for the absence of Public Health reforms before the late 19th century? If they assume it’s the result of stupidity how will you challenge this? 3. How will you find out students’ views on the NHS to avoid any misunderstandings of its impact on health after 1948? 4. How can you make the legislation interesting?!

Public Health before the 1800s (pages 144–51)

Pages 144–45 ask, ‘What did they do about public health in fourteenth-century London?’ and the answer, from many students, will be ‘nothing’. This is based on the assumption that medieval people were either totally careless about health and cleanliness, or were too stupid to think of ways of improving their environment. Both assumptions need bringing into the open and challenging. The activities on these pages are designed to show that efforts were made to maintain cleanliness, but that the lack of understanding of the cause of disease, and attitudes to the responsibilities of government, made effective action nearly impossible. It was also far harder to keep fourteenth-century London clean than any town today because of the predominance of horse transport and the constant arrival of food ‘on the hoof’, with animals being taken through the streets to slaughter.

These pages therefore explore this dual attitude through a ‘Where’s Wally?’ activity, asking students to find evidence of both methods and problems. This activity can also be found on Activity Sheet 45 (useful for annotation) and on Dynamic Learning 1 for use on your whiteboard. Activity Sheet 46 provides a set of scales on which evidence can be recorded. This could also be acted out physically in the classroom if this would help students get a clearer idea of a balance of problems and efforts – ultimately weighted in favour of problems! This approach is continued on **pages 146–47**, enabling students to build their own summary of the balance of efforts to keep cities clean and the problems faced in doing so. A copy of the lengthy Source 1 (**page 146**) is on Activity Sheet 47 for annotation – students could underline dangers in red (particularly bad dangers could be double-underlined) and

efforts at improvement in blue, the balance of colour revealing the overall public health situation. These details could also be recorded on the scales diagram.

Pages 148–9 describe the continuing efforts to improve cleanliness, which ultimately fail to make significant changes. The critical activity is Activity 4 in the Student’s Book, which suggests why the problems of public health had not been solved. This leads into the important activity on **pages 151–2**, which summarises the developments in public health to c.1800 and looks ahead to developments after 1800. The activities on **page 150** should help students establish a clear picture of the roles of the various factors in preventing improvement so far. Activity Sheet 48 can be used in support. Students should first fill in each factor card with evidence of its impact from the cards on **page 150**. They should then cut up the cards and arrange them into a hierarchy to show their relative significance in hindering improvement.

Page 151 introduces the reasons why public health was deteriorating in many towns by the early nineteenth century. You could supplement this with the Dynamic Learning 1 introductory activity on medicine in the nineteenth century, asking students to suggest how developments in society might affect medicine. It is important to emphasise:

- The extent and speed of change during the Industrial Revolution. Students can assume that all change in the past was slow and this makes it harder to understand the failure to reform.
- The widespread opposition to government involvement in daily life among all classes. This is important background to the 1848 Public Health Act.

How bad was public health in the early 1800s? (pages 152–57)

Pages 152–55 emerge into the full awfulness of early nineteenth century urban public health. Students could begin by analysing the large pictorial sources (see also Activity Sheets 49–51 and the related activities on Dynamic Learning 1 and 2), which help to develop source inference and evaluation skills. Then add to the list of public health problems derived from the pictorial sources by using the documentary material.

Pages 156–57 deepen understanding of the reasons for opposition to reform, using the iceberg analogy again as a reminder that the obvious explanation – selfishness among the rich – isn't the only explanation. Groups of students could use Activity Sheet 52 to create their own completed iceberg from the clues on **page 151**.

Why did public health eventually improve in the late 1800s? (pages 158–67)

This enquiry begins by offering a hypothesis – that an individual, Chadwick himself, was the most important reason for reform. This then provides the focus for the Meet the Examiner question on **page 160**, which provides the link through the following pages. You will introduce the question and issues here, students will then carry out their investigation and then you will come back to **pages 160–61** for a conclusion.

While on **pages 158–59** ask students to begin compiling a timeline (Activity Sheet 53) and focus on the pattern of reforms, particularly the length of the gaps between Acts. Second, students should use the card sort activity on **page 155** (Activity Sheet 54) to create their initial hypothesis, agreeing or disagreeing with Chadwick. The cards can then be used to collect evidence from **pages 162–67**.

Pages 162–67 tell the story of the development of public health reform to the late 1800s. The running tasks for students are to:

- Add relevant information to their timeline, particularly explaining the gaps between Public Health Acts.
- Add evidence to their factors cards (**page 161**), building up a picture of the role played by each factor. You may wish to begin by guiding students through **pages 162–63**, modelling the collection of evidence on timeline and factors cards, then giving students independence to tackle **pages 164–67** on their own. If you wish to look more closely at the work of John Snow see Dynamic Learning 3: the Mystery of the Water Pump. This provides the evidence for Snow's conclusions in stages.

Once you have reached **page 167**, go back to **pages 160–61** to review the impact of the factors, using the evidence on the completed cards. Work on developing a complete written answer to the exam question on **page 160**.

Why did public health improve further in the twentieth century? (pages 168–77)

Pages 162–63 provide a bridge between the nineteenth and twentieth centuries. Students need to be clear that reforms in the late 1800s were very important, reflecting changing attitudes to government involvement and making a beginning on reform, but government intervention was still very limited. Discussing Activities 1 and 2 is an important prelude to work on the twentieth-century reforms.

A good beginning to the story of twentieth century reform is to present students with a puzzle based on the queues that formed in 1942 when the Beveridge report was published. Describe the queues, then ask, 'What could people have been queuing for?' Food, cinema, a sports event? No, a book on social reform! That sets up 'what do you want to ask?', e.g. What had been happening earlier in the 1900s? What did this report say?

Now go back to the early 1900s! For this enquiry we have taken out the structured guidance provided on the nineteenth century. This challenges students to think explicitly about how they went about their enquiry on the nineteenth century and transfer it to the twentieth century topic. You will need to draw this out from them and create a flow chart of the process (see Activity Sheet 55 if needed) and then students can work in groups to look at why public health continued to improve in the twentieth century.

A problem that may crop up is that modern media coverage of the NHS tends to be negative, creating an impression at odds with most people's direct experience of the NHS as reported in surveys. Hence it's important here to identify students' assumptions about the NHS's role and where these assumptions come from before starting on coverage.

Conclusion and Exambusters (pages 178–81)

This whole section can be drawn together using the Meet the Examiner activity, which examines the reasons for public health changes in the nineteenth and twentieth centuries. The two spreads together provide guidance that enables students to develop an effective answer to the question on **page 178**. Activity Sheet 56 provides a chart for use with Student's Book

Activity 1 on **page 179**, collating events into Turning Points, catalysts etc. Activity Sheet 57 provides a copy of the Swingometer from **page 181** for completion which should help students see the pattern of change emerging.

Outcomes to look for

The activities will help you identify students' understanding and knowledge of:

- a) the nature of public health conditions *c.* 1350–*c.* 1800, the attempts made to improve them and why these attempts did not succeed
- b) the reasons why public health conditions were poor and why there was opposition to reform in the early nineteenth century

- c) the major stages in reform through the nineteenth and twentieth centuries and the significance of each stage of reform
- d) why key reforms were introduced at particular times – the interplay of long-term needs and short-term events
- e) the contribution of public health reform to improved health and life expectancy.

The Meet the Examiner pages help you identify students' strengths and weaknesses in:

- evaluating the importance of individuals and other factors in promoting change
- explaining why changes took place during particular periods.

Section 10: Conclusions

Overview

This section does not introduce any new content. It revisits the major issues within the course, creating opportunities for effective revision, including completing the various Smarter

Revision activities that have been building up across the course. This section also returns to broader issues unrelated to the exam but which have a broader educational value, set out in Objective 2 below.

We are not assuming that you will necessarily tackle each of the pages with the whole class. It's important to think about the particular strengths and weaknesses of classes and individuals and to plot your choice of activities with students' needs in mind. For example, if an understanding of factors is a general weakness, then you may want to spend extra time on **page 189**, which covers factors, and less or no time on individuals (**pages 186–87**)

Dynamic Learning 2 provides a wide range of activities that can be used for revision, from detailed activities on themes such as public health to Blockbusters quizzes. These activities are listed in full on **pages 00–00** of this book.

You can also find a range of kinaesthetic revision activities at:

<http://www.thinkinghistory.co.uk/ActivityKS/ActivityGCSESHPAGE.html>

One example that brings together a variety of themes is a Living Graph based on the fight against germs. See:

<http://www.thinkinghistory.co.uk/ActivityBase/GermsFeelingLifeline.html>

Resources	<p>Student's Book pages 182–89 Activity Sheets 58–61 Dynamic Learning 2 – wide range of activities on chronological understanding, concepts, themes and factors and quizzes (see page 00 of this book) Dynamic Learning 3 – ‘The Road to Bacteria-ville’ and Factors football field’ plus Smarter Revision activities</p>
Exam Busters	<p>Smarter Revision Completing revision activities</p>
Objectives	<p>1) By the end of this section students will have had the opportunity to revise and consolidate their knowledge and understanding of:</p> <ul style="list-style-type: none"> • the key features of each period of medical history • the roles of factors across time • the roles of a series of significant individuals. <p>2) They will also have had the chance to bring to a conclusion their ideas about</p> <ul style="list-style-type: none"> • why health and life expectancy have improved significantly • how the Development Study provides perspective on life today • how the Development Study fits within the overall GCSE

<p>New to teaching 'Medicine'? Priority decisions</p>	<ol style="list-style-type: none"> 1. Are you going to cover all the activities or choose from amongst them to fit the needs of individual classes or even students? 2. How important is it to you and the students for them to spend a little time thinking about the issues listed under Objective 2 (above)?
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The road to Bacteriaville – using road maps to revise key themes (pages 182–83)

This page enables you to focus on themes – the fight against disease, surgery, public health and treatments. The illustration provides a visual realisation of the story of ideas about the causes of diseases and the methods used to overcome them. The activity guides students through using this illustration and Activity Sheet 58 provides a copy to annotate.

For this road map approach see the article 'Assessing Differently' by Rachel Foster in *Teaching History* edition, 131, June 2008. It is worth looking carefully at Rachel's account of how she set up the road map metaphor before moving into the chosen content and to think about when, within the Medicine course, you might introduce this metaphor. Perhaps the best time is right at the beginning, when working on the graphs on pages 8–9 or at the half-way point, in Section 5.

Teaching History is available online to HA members (and you really should be a member!) at: www.history.org.uk

What was so special about each period of medical history? (pages 184–85)

As we have said several times, wonky chronological understanding can betray students in exams. Dynamic Learning 2 contains a number of activities that will help with this but this activity will particularly help students who need a clear overview of the key developments in each period. This also makes a particularly good 'at home' independent revision activity.

Which individuals were most significant? (pages 186–87)

This activity asking students to create Top Trumps cards on individuals could be used in its first stage as a homework activity with students having to write up one or two cards for individuals and then bringing their drafts in for comparison and finalising. You could use the partner activity on Dynamic Learning 2 (Smarter Revision section) or Activity Sheet 59 to build up a complete set of cards. While the awards ceremony photograph on page 186 can look like just a moment of fun, it will be more than worthwhile if students have become fully involved in researching the individuals and so building up a strong sense of each individual's contributions to medical history – both short-term and long-term.

What do we owe our lives to? (pages 188–89)

We have got to the end of the course content. A satisfying, motivating end is not just about setting up revision tasks, but also about bringing a big enquiry to a close. One of the hardest things to do is bring a course to a clear, satisfactory ending. Time and the pressures of school often make this difficult but you've got more chance of students getting a sense of achievement from concluding this part of their GCSE course if you plan from the beginning for this final session – give it a real fanfare and relate it strongly to the students' world outside the classroom.

This page gives you the chance to return to the major overview question, asking why health and life expectancy have improved so much over time, and particularly which factors have played the biggest roles in change. Students can use Activity Sheets 60 and 61 to collect information and complete the activities on page 189, evaluating the impact of each factor and then deciding which of them were the most significant.

Unit 2: Teaching the Source Enquiry

The transformation of surgery c.1845–c.1918

Preparing students for the Source Enquiry

1. Distinguishing between the Development Study and the Source Enquiry

If students study both *Medicine and treatment through time* and *The transformation of surgery*, there is a danger that they will become confused about the objectives of the ‘surgery’ unit. Therefore it is important that students understand the distinction between the Source Enquiry and the Development Study. With the Source Enquiry, the focus is very much on their enquiry skills and their ability to handle sources, rather than on a detailed knowledge of the history of surgery. Referring to this unit as ‘The Source Enquiry’ rather than ‘Surgery’ will help a good deal, but see below (page 00 of this book) for other suggestions.

For notes on the nature of the Source Enquiry and other guidance, see Edexcel’s support at <http://www.edexcel.com/quals/gcse/gcse09/history/b/Pages/default.aspx>

2. Building on enquiry skills from KS3 and other parts of the GCSE course

Students should see that the skills they have already developed during Key Stage 3 and GCSE can be applied to this unit. Students should already be familiar with the enquiry process from their Key Stage 3 studies, as Enquiry is the central element within the Attainment Target. For example students should have built up the following source handling skills during Key Stage 3:

- Developing inferences from written and visual sources.
- Analysing the way in which a person or event is portrayed in a source.
- Cross-referencing sources.
- Evaluating the usefulness of sources.
- Combining sources and own knowledge to reach a judgement.

The following chart provides one example, from SHP’s Key Stage 3 series, of how source handling skills can be built up during Key Stage 3.

	Year 7	Year 8	Year 9
Enquiry (and communication)	<ul style="list-style-type: none"> • Asking questions • Using sources to answer questions. • Explaining what happened but sometimes being uncertain. 	<ul style="list-style-type: none"> • Stages of enquiry, from asking questions to creating answers. • Asking questions linked to specific concepts. • Selecting sources that are relevant to a particular enquiry. 	<ul style="list-style-type: none"> • Using a range of sources in order to reach reasoned conclusions. • Beginning to plan own enquiry, from asking questions to identifying relevant concepts to creating persuasive answers.
Sources	<ul style="list-style-type: none"> • Sources are the clues that tell us about the past. • Sources are anything from the past (documents, artefacts, pictures, buildings etc.) 	<ul style="list-style-type: none"> • As we get nearer the present, more sources, and more types of sources become available. • Having more sources allows you to find out more but makes the process of investigation more complex. 	<ul style="list-style-type: none"> • Knowledge of the past is based on using as wide a range of sources as possible. • Knowledge of the past continues to develop as new sources used or discovered.

Evidence	<ul style="list-style-type: none">• Identifying why sources don't always tell the whole truth.• Using a variety of sources.• Knowing how certain you are.	<ul style="list-style-type: none">• Inferring from sources to look beyond the obvious.• Cross-referencing sources to establish support or contradiction.• Selecting sources in order to tell a particular story.	<ul style="list-style-type: none">• Judging how useful a source is for your enquiry based on provenance/purpose and content/language of a source.• Judging how typical a source is – how much you can generalise from it.• Carefully selecting relevant information from a source to support an argument.
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Introducing the Source Enquiry

1. What is this Unit about and where does it fit into your course? (pages 190–91)

As noted above, it is vital that students appreciate that the Source Enquiry is first and foremost about how they use sources and that ‘surgery’ is a topic that illustrates their ability to use sources as evidence. Linking this historical skill to the world outside the classroom can help with this appreciation. **page 191** provides one way of making the link, but it is important to build up your own arsenal of explanations for the value of skills that are transferable between ‘doing history’ and ‘real life’. Recent research (Harris and Haydn, *Teaching History* editions 132 and 134, March 2009) has shown that students’ ability to explain why History is worth studying is disappointingly weak.

In order to establish the primacy of the use of sources in this part of the course it may also be useful to begin with mini-enquiries that focus on quite different subject matter e.g. an aspect of local history or one of those ‘history mysteries’ (the deaths of the Romanovs, what really happened to Edward II?) that have been squeezed out of KS3. The main purpose here is to recap the methodology of enquiry, establishing in students’ minds how to go about an enquiry. This involves following the broad pattern, ‘question–hypothesis–evidence–reformulate hypothesis–evidence–reformulate hypothesis’ etc., as well as specific source-handling skills. For a discussion of methods of developing Enquiry skills, see: <http://www.thinkinghistory.co.uk/EnquirySkill/Index.html>

Students will also benefit from seeing how this unit fits into their overall SHP GCSE course. Either return to **page 12** to look at the course outline, or use a version of your own. Emphasise the deliberate variety of approach within the SHP course – i.e. of Development Study, Source Enquiry etc. – rather than the content that exemplifies these approaches to studying the past.

2. Introducing ‘Surgery’ (pages 192–93)

Having established the primacy of the Source Enquiry, it is time to introduce the example – the transformation of surgery. **pages 192–93** do this by providing an engaging overview of the topic rather than an overview of the specification or exam paper. Therefore these pages provide an overview of the key

surgical breakthroughs over the last 200 years. The aims are to:

- Engage students with interesting content.
- Provide students with a big picture of the way that surgery has developed.

The material on **page 192** looks at differences between then and now – an early opportunity to get students into the way of thinking of ‘reading sources’, looking for what they can pick out directly and what they can infer. At this stage make sure that students are clear what the word ‘infer’ means.

Page 193 then provides a research task to help students gain a clear overview of the changes that took place in the period 1845–1918. Activity Sheet 62 (the headlines) can be used to collect information, and Activity Sheet 63 will help in the preparation for Activity 4, telling the story of surgery in one minute. Finally, the puzzle corner introduces the idea of opposition to developments that now seem entirely reasonable. Simpson was talking here about Lister’s use of carbolic as an antiseptic – only 20 years after he had met with considerable opposition to his use of chloroform! The irony of this won’t have any impact on students at this stage, but it does introduce opposition, an important thread in this enquiry.

3. Generating a Big Question on which to hang the enquiry (pages 194–95)

Having established the key elements in the story of surgery, students are introduced on **pages 194–95** to the ‘big question’ that drives the Source Enquiry: ‘Which surgical breakthrough was the most significant?’ The aims of this approach are to:

- Create a real sense of enquiry – students are encouraged to develop a hypothesis that they then test through the rest of the chapter.
- Provide a coherent learning journey – students see the Source Enquiry as a sequence of related activities/lessons that lead to a final conclusion, as opposed to a series of unconnected content areas/lessons.

Pages 194–95 therefore ask students to develop an initial hypothesis using the sources provided. Discussion should focus not only on the hypothesis but the extent of certainty – which may well vary around the class. Students can record their first ideas on the hypothesis triangle on Activity Sheet 71 and review it later after each stage of the enquiry.

Having tackled the activities on **page 194**, students should be shown how the enquiry is broken down into a sequence of manageable mini-enquiries around the three key breakthroughs in the development of surgery between 1845 and 1918:

- Anaesthetics (see **pages 204–11**).
- Antiseptics (see **pages 212–17**).
- Blood transfusions (see **pages 218–19**).
- Which factors played the biggest part in transforming surgery? (see **pages 220–21**).

As the enquiry proceeds, students will research each breakthrough and evaluate its importance in order to revise their hypothesis and finalise their answer to the overall enquiry question on **pages 222–25**. Make sure that students can see this structure at the beginning of the enquiry – not just the question but the existence of stages and a conclusion

4. Advice on exam technique

Pages 196–99 provide students with a clear picture of how the Source Enquiry exam is structured. The advice boxes on **pages 196–97** are very important. Chief Examiner feedback shows that many high-ability students fail to achieve the grades they are capable of because of poor time management in the exam. It is important that students are given regular opportunities to practise writing to a time limit, and that they enter the exam with a clear time plan indicating approximately how long they should spend on each question.

As students work through the enquiry they will be provided with guidance on tackling different question types and advice on how to structure effective answers. These are indicated in the table below. Students will grow in confidence when they realise that although the sources may change, the same questions are being asked about the sources and the same skills are needed to answer them.

Question type	Sentence stems	Exam Buster guidance
Developing inferences from a source	What can you learn from Source X about	Pages 00–00
Analysing how an event or person is portrayed in a source	Study Source X. How has the artist/writer portrayed	Pages 00–00
Cross-referencing sources	To what extent does Source X challenge the impression of given in Source Y?	Pages 00–00
Evaluating the usefulness of sources	Study Sources X and Y. Which is more useful to the historian who is investigating	Pages 00–00
Using sources to reach a judgement	Study Sources X, Y and Z and use your own knowledge ' <i>statement</i> '. How far do you agree with this statement?	Pages 00–00

It is important that students are encouraged to spot the different question types and to realise that 'decoding' the exam questions during the Source Enquiry exam is just as important as it is in the Development Study. If you are teaching the Source Enquiry before the Development Study use the advice on **pages 00–00** to introduce students to 'decoding questions'. If you have already taught the Development Study you will be able to build on this skill during the Source Enquiry.

Students can then apply the skills they build up to similar questions based on different sources (for

example the exam paper on **pages 196–99**, specimen papers or practice papers devised by the teacher). If you are devising your own practice papers it is important to try and use a range of different types of sources (for example pictures, cartoons, letters, statistics, and newspapers).

In preparation for the Source Enquiry, it would also be useful to use question stems similar to those in the table above when students use sources during Key Stage 3 or in other parts of their GCSE course.

The heart of the enquiry (pages 200–19)

The following notes guide you through the structure of the main enquiry, suggesting activities and links to the Activity Sheets in this book and to other resources. These notes do not simply repeat the details of the activities in the Student's Book. If there is no mention in the following notes of a particular activity from the Student's Book, this doesn't mean we have decided that it is no longer useful. We have just assumed that you can read it for yourself and will use the Student's Book and these notes to make decisions about exactly how to use the activity.

What was surgery like in the early 1800s? (pages 200–03)

These two spreads concentrate on developing inference skills while at the same time identifying the three key problems facing surgeons and their patients – pain, infection and blood loss. You could begin by giving students Activity Sheet 65 from this book or showing them Source 1, **page 200**, on your whiteboard. Ask them to suggest what the source reveals about surgery *c.* 1800. Then turn to the book, read the guidance on **page 200** and ask students to review their suggestions. It is important for effective learning for students to make explicit either what they have done well (confidence is always important for motivation) or what they have missed. Then revise these ideas using Source 2 (John South's description, also on Activity Sheet 66) and the activity linked to it. By now students should be well prepared to revise their answers to the question relating to Source 1.

Before turning to **pages 202–3** you could change the type of activity, giving students a break from exam work by looking at the nature of surgery through role-play or film. This also counterbalances a limitation of the sources, which is that they don't convey a full sense of surgeons' attitudes because they concentrate on the physical events and environment of operations. Therefore it is worth using the role-play developed by Andy Harmsworth, with the teacher taking the role of the surgeon, to explain and 'carry out' an operation. Details of this role play can be found at <http://www.schoolhistoryproject.org.uk/ResourceBase/Surgery19thCentury.htm>

An alternative resource that can be used for the same purpose is a film made by the Thackray Museum (Hannah Dyson's *Ordeal*) showing the

preparations for a pre-anaesthesia operation. The film is based on a real case at the Leeds Infirmary and is excellent for bringing out the surgeon's concern for his patient. The video or DVD comes within a pack on surgery and can be obtained from <http://www.thackraymuseum.org/view-resources/gcse-pain-pus-and-blood-surgery-pack.html>

Pages 202–3 do two things. First, on **page 202** we summarise the three main problems facing patients and surgeons *c.* 1800. Students can briefly look at some of the methods tried previously to overcome these problems. This again uses inference skills to link Methods A–D to the problems. **Page 203** then introduces another theme of the overall enquiry – which factors played a significant part in the transformation of surgery? Activity Sheet 67 in this book provides a copy of the chart from page 203 students to complete as they work through the overall enquiry. At this stage it is important to get students thinking about which factors they think were the most or least important, *i.e.* predicting the outcome and suggesting reasons for their choices.

Breakthrough 1: Anaesthetics (pages 204–211)

Pages 204–205 tell in outline the story of the development of anaesthetics. The emphasis is therefore on ensuring that students have a secure grasp of this story. The activities on **page 202** will help them to build up this grasp, but you may wish to add the following short oral activity for reinforcement. Put the students into pairs. Their task is to tell the story of anaesthetics, but each pair adds only one sentence. Begin with your own starter half-sentence: 'The first step to effective anaesthetics was ...' Then choose a pair to finish the sentence off. Now choose another pair to continue the story, and so on until you reach the point where Simpson discovers chloroform. You could then look at opposition to the development of anaesthetics, then repeat the storytelling but this time including reasons for opposition.

To look at the impact of anaesthetics use Activity Sheet 68, which has the positive and negative effects of anaesthetics mixed up. Give students three minutes to mark each effect with a tick or cross, then check their answers against **page 205** and decide which positive and which negative effects were the most significant.

Pages 206–211 now use students' grasp of the story of anaesthesia to develop their source skills,

with work on cross-referencing (**pages 206–7**) and analysing the portrayal of events (**pages 208–10**). **pages 206–7** provide tried and tested advice on cross-referencing, guiding students to write an effective answer to the question on **page 206**. Activity Sheet 69 provides Sources 1 and 2 from the Student’s Book, if you wish to use these independently of the guidance in the book. Having worked carefully through this material, students should be in a position to tackle question 3 from the exam paper on **page 197**. Alternatively, you could leave this until students have completed the section on anaesthesia, when they could tackle questions 2 and 3 together.

Pages 208–210 take the same carefully structured approach to ‘portrayal’ questions, beginning with analysis of the painting on **page 209**, then moving on to work on a different kind of source (Simpson’s speech on **page 210**). This guidance will enable students to tackle question 2 from the exam paper on **page 197**.

Having completed this exam preparation material you can now go back to the subject of anaesthesia. Consolidate students’ knowledge by completing the template for recording the key information for each breakthrough on **page 211** (Activity Sheet 70). Activity Sheet 71 provides a copy of the ‘hypothesis triangle’ so that students can record their developing thoughts on which breakthrough was most significant.

Breakthrough 2: Infection (pages 212–216)

Pages 212–216 move on to the subject of infection and the development of the first effective antiseptics. One of the balancing acts of the Source Enquiry is how to keep interest and activities lively while also spending considerable time on the necessary, detailed work developing source skills. Therefore we have chosen to begin this section with a light-hearted ‘playlet’, a figment of Dan Lyndon’s imagination! The idea is to act it out, with students paying their parts to the full, maybe with different groups competing for the prize of who produces the most over-the-top version. However behind the fun is the question – What key points about the story of antiseptics are buried in the play? Key points include the death-rate after operations, the work of Semmelweiss, the impact of Pasteur’s ideas, and Lister’s knowledge of the use of carbolic to treat sewage.

At this stage you can also add variety by using Ian Luff’s role-play (takes around 10 minutes) on Lister’s use of a carbolic spray. See

<http://www.thinkinghistory.co.uk/ActivityBase/ListersAntisepticSpray.html>

The fun activities allow you to tease out the key details relating to antiseptics, so that when students encounter them in more serious form on **pages 213–15** they recognize them and remember them. By the end of **page 215** students should once again have built up a good knowledge of the story of antiseptics. They should be able to use the activities on **page 215** to bring their hypothesis triangle and Factors chart up to date, and complete a Breakthrough chart for antiseptics. This then gives them all the background knowledge they need to move onto the source-focused work on **pages 216–17**.

Pages 216–17 help students to compare the usefulness of sources for a particular enquiry. As with previous guidance, students can carefully work through this example, completing a model answer to the question on **page 216** before using what they have learned to tackle question 4 of the mock-exam paper (**page 197**).

Pages 218–19 briefly cover the third breakthrough, solving the problem of blood loss. There is somewhat less to say about this breakthrough, although this does not mean it was insignificant.

Having completed work on the three breakthroughs, you can then turn to examining the impact of factors, using the evidence in the Factors chart students have been collating. This evidence can be used to complete the Venn diagram activities (and see Activity Sheet 72). These also make good kinaesthetic activities, again to provide a different way of approaching the subject.

Conclusion – completing your enquiry and making judgements (pages 222–25)

Pages 222–25 provide advice on how to answer the final question on the exam paper, which requires students to use the sources and their own knowledge to reach a judgement about a statement. Students often struggle with this question, and will benefit from very careful support in developing a well-structured answer. When students first tackle this type of question it is a good idea to break down the approach to answering the question into the five steps indicated in the ‘Visible Learning’ resource that is provided on Activity Sheets 73–83.

Dale to complete