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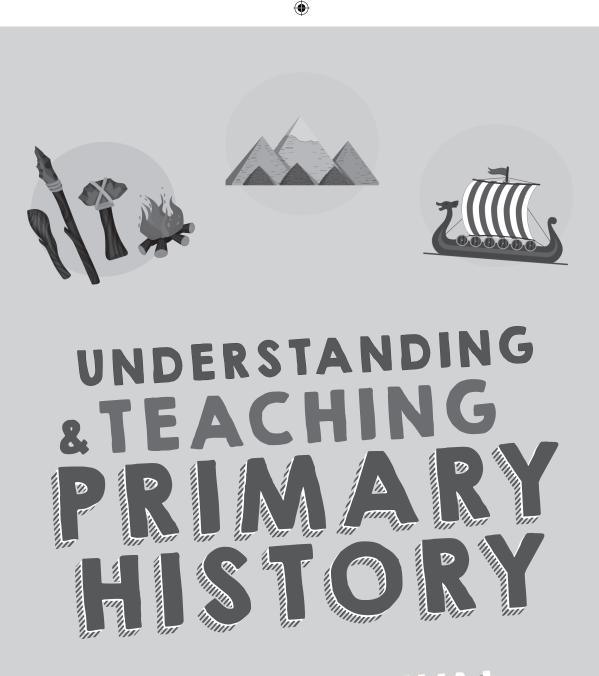
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ABOUT THE AUTHOR

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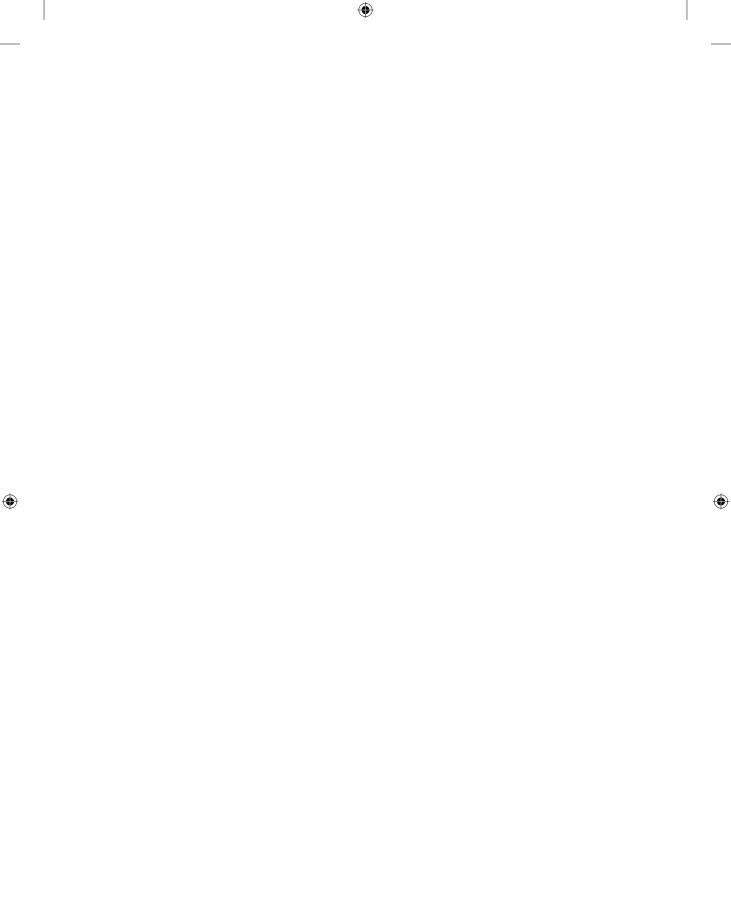
I would like to thank my employers, Oxford Brookes University, for continuing to support staff research and scholarship. Thanks also to my family, H, S and J, who have endured the sound of typing in lieu of family fun.

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VII



CHAPTER 3 CONCEPTS OF CHRONOLOGY AND CHANGE

What this chapter will cover

This chapter introduces the crucially important historical concept of time, which has received more emphasis in the 2014 National Curriculum in England. The chapter begins with a definition of historical timeframes and outlines many of the challenges of covering chronology with primary-aged children, principally the complexity of the language and the conventions used to describe historical periods. Chronology is further defined in terms of the concept of change, which can be developed through sequencing and ordering activities. The chapter then outlines the importance of timeline activities, including the use of computers. Several examples are included which help to illustrate the dimensions of primary history. The remainder of the chapter examines the closely related concepts of change and continuity and examples of activities that can help to develop children's 'sense of time'.

INTRODUCTION

Having stated in Chapter 1 that the 2014 National Curriculum (DfE, 2013) has resulted in the 'return' of overall chronological or narrative approaches to the past, specifically British history, it is important to explain exactly what is intended. Under the opening paragraph entitled 'The Purpose of Study', there is a sentence which outlines that history is to 'help pupils gain a coherent knowledge and understanding of Britain's past and that of the wider world' (DfE, 2013, p. 188). This is followed by a list of aims for primary history, in which the first is that children should:

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Know and understand the history of these islands as a coherent, chronological narrative, from the earliest times to the present day: how people's lives have shaped this nation and how Britain has influenced and been influenced by the wider world. (DfE, 2013, p. 188)

However, these learning outcomes should not be accepted uncritically, and therefore this chapter will introduce several important claims. To begin with, although history is fundamentally associated with an understanding of time, this challenging and elusive concept is not restricted to history. Mathematics introduces children to the concepts of recorded time and duration. Science, especially physics, is concerned with the fundamental nature and definition of time. Languages rely on a sense of time, for example verb tenses and prepositions associated with time which relate objects in terms of temporal relationships. Additionally, there is the chronological underpinning of narrative structures to which the National Curriculum statement alludes. Music is also fundamentally concerned with time as one of the parameters of musical form. In geography there is now more emphasis on the human and physical changes to landscape and settlement, now termed 'processes' in the new National Curriculum, and while the human aspect of geography mirrors historical timescales, geological timeframes (4.54 billion years in the case of the Earth) dwarf human history. Therefore, there is nothing unique or especially challenging about historical timeframes, especially since the parameters of historical time (roughly 11,000 years, as outlined in Chapter 1 of this book) are miniscule compared to geological or scientific concerns. That stated, in one sense history is different in that its parameters of study are almost entirely defined by the concept of time.

However, the second point is that historical timeframes are still extremely challenging for primary-aged children - indeed, for many adults - especially since the revised National Curriculum now places much more emphasis on chronology and requires that the oldest aspects of British history are taught first. So, what are these challenges? First, the language: Key Stage 1 colleagues should not assume that children in this key stage are confident users of the prepositions and language linked to time. Terms like 'before', 'after', 'yesterday' and 'last year', etc., must be discussed and explained. At the very least, the language associated with the past and past events needs some form of systematic coverage. Second, within Key Stage 1, any use of historical timelines should mirror work in place value. If children are not comfortable with numbers up to a thousand, they will struggle with any understanding of longer timeframes. As children move into Key Stage 2 the challenges remain. The first consideration is the complication over the language used in historical timescales. While the western calendar may predominate, it is not the only system for counting years. More recently, there has also been a tendency to use Common Era (CE) in place of Anno Domini (AD), a term

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that requires a translation from Latin, and Before Common Era (BCE) in place of Before Christ (BC).

A second important consideration is that historical timeframes do not fully match the integers children will use in mathematics. The western calendar does not have year zero, and the earlier sequence employs positive numbers travelling in the opposite direction rather than negative numbers. Thus, to find the age of Stonehenge since its construction (which might be covered in Year 3), one must add the BCE time (2500 BCE) to our current CE date (2000 CE) to find the total duration (4500 years). By any standards this is challenging for most primary-aged children, and certainly for Year 3s, some of whom may be acquiring an understanding of larger numbers and place value.

There is also the related difficulty in understanding the language of the centuries. Most adults, it would be fair to state, probably rarely question why a date such as 1789 is described as the eighteenth century. As a child, I found this confusing, and like most children simply accepted the practice without fully understanding why. The explanation is quite simple when one thinks about it: the first century AD/CE began with year 1 and so the century between 1 and 99 AD/CE became the first century in the western calendar.

Finally, consideration must also be given to the complexity of the concepts under review. Historical concepts are complex, and they do become proportionately less challenging the further back in time one studies through some mysterious transmogrifying process. Husbands (cited in Sellgren, 2013) was most vocal, arguing that 'if you teach chronologically you end up with a seven-year-old understanding of the Saxons, a 10-year-old understanding of the Middle Ages and a 14-year-old understanding of the industrial revolution', and that history 'is more complex than that'. Husbands also outlined some of the alternative ideas. One seriously considered alternative explored by the History Working Group (DES, 1990, pp. 9–10), and mentioned in Chapter 1, was to teach history in reverse order, thus beginning with more relatable contemporary issues and gradually working backwards towards ancient history. However, this idea was rejected.

CHRONOLOGICAL UNDERSTANDING

Having outlined some of the challenges, and having discussed in Chapter 2 how chronology can be defined as one of the core *organising* concepts underpinning historical understanding, this section requires a reasonably clear explanation of the nature of time, as defined by science, in order that its importance, and the challenges of introducing this concept, can be fully understood. What we measure when we calculate time is essentially based on the notion of change in a dynamic, not static, universe. Prior to the Renaissance, most understanding followed Aristotle's argument

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that all bodies would come to a rest unless moved by a force. Copernicus, and then Galileo, argued the opposite: that objects are in motion unless modified by force. This concept of inertia would later come to be refined, modified and codified by Newton as the first of his Laws of Motion (first published in 1687). Thus, without a concept of change, whatever the scale, time would not be measurable, and therefore this chapter will also consider the role of the related concepts of 'change and continuity'. The term 'chronology' is derived from the rather unpleasant Greek legend of the Titan, Kronos (and can therefore be legitimately studied in primary schools as part of an Ancient Greece unit), which acts as one of the Greek foundation myths, and so there is no extra significance in the term other than it now acts as a synonym for time and the study of time.

In terms of guidance for teachers, this began with the recommendation of Her Majesty's Inspectorate that children 'develop a knowledge of chronology within which they can organise their understanding of the past' (DES, 1988a, p. 3), and that children 'should develop a "sense of time" which enables them to put historical events in the correct order, to acquire an historical perspective and to avoid anachronism' (DES, 1988a, p. 7). Hence the final part of this chapter will consider what a 'sense of time' might mean as a learning outcome. While chronology has always featured in the National Curriculum guidance for primary history, the National Curriculum 2014 currently states very clearly that one of the main outcomes of primary history is that:

Pupils should continue to develop a chronologically secure knowledge and understanding of British, local and world history, establishing clear narratives within and across the periods they study. They should note connections, contrasts and trends over time and develop the appropriate use of historical terms. (DfE, 2013, p. 189)

Therefore, this chapter will also act as a foundation for the discussion of narrative approaches in Chapter 6. Finally, while it is possible to sympathise with Turner-Bisset (2005) when she argued that too much emphasis has been placed on developing children's chronological understanding, this chapter follows Stow and Haydn's (2000) persuasive argument for the importance of chronology in underpinning *all* understanding of historical change and development, an argument supported by Thornton and Vukelich (1988) and their concept of 'developmental-historical' time, even if they also acknowledged that chronology was a necessary but not sufficient element for full historical understanding. For those not used to the language of formal logic, this essentially means that, although an understanding of time cannot be the whole of historical reasoning, it is an essential component and therefore cannot be ignored. And this is surely right: in what sense can genuine historical thinking occur without a concept of historical dates, sequences of historical events and the concept of duration?

RESEARCH INTO CHILDREN'S UNDERSTANDING OF TIME

Although, as argued above, the concept of chronological understanding is an important part of pedagogic approaches to history, it has largely been ignored by academic historians. Hobsbawm argued that an understanding of time is 'essential to the modern, historical sense of the past, since history is [concerned with] directional change' (Hobsbawm, 1997, p. 29), but he appears to have been a rare exception. Structuralists such as Lévi-Strauss (1963) and Braudel (1980) have tended to place more attention on it, while simultaneously adding a more critical approach, such as identifying differing rates and perceptions of time and change according to region, class or status. This may have some relevance to primary pedagogy in the sense that sometimes children (and trainee teachers) are confused about the varying rates of human civilisation - for example, when the old world (European colonisers) met the new world, still largely existing in the Stone Age in North America (but not in South America where metallurgy had started), or to begin to understand that for some people in the world their mode of living may have changed little in centuries.

It is arguable that the more important consideration for primary pedagogy relates to the research that has been conducted into children's understanding of time and chronology. Fortunately, this has been reasonably extensive, though often with a broader remit than just historical understanding. Early research often required children to answer several questions and challenges associated with a range of different timescales and involving real-world problems (such as estimating how long it would take to complete certain tasks like walking around a playground). The overall conclusion was that a full understanding of time includes several different concepts, some more historical than others, all of which were difficult to develop and not easily separated from linguistic and mathematical understanding. If nothing else, these fascinating, and still widely cited, studies rebut uncritical claims that children were more advanced in their understanding of time in the past.

Piaget's (1946) work on time has also been widely cited. He demonstrated how children's understanding of time developed in line with his ontogenetic theory of development stages, but with some interesting subtleties such as the concept of age, which he demonstrated was often confused in children's minds. Children frequently struggled to explain why a younger sibling would always be younger (due to order of birth), and children under seven often struggled to understand that their parents and grandparents were once young, because they tended to associate adults with roles disassociated from time and change. Again, the overall sense was that chronological understanding was, and remains, challenging for young children, and that we should not be surprised if they take (\bullet)

time to develop a meaningful understanding of this complex and elusive concept.

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If there is any lesson to be taken from the evidence on the nature of time and children's understanding of chronology, it is not to assume that children of any age have a satisfactory or working knowledge of any aspect of historical time; but equally, it is not to assume that this challenge is unique to history.

TEACHER INTERVENTIONS AND SEQUENCING ACTIVITIES

Although the research evidence may be daunting, this does not mean that teaching approaches cannot accelerate and guide the development of children's understanding of chronology. For example, in terms of the development of language associated with time, Hodkinson (2007) carried out extensive research that indicated that teacher intervention could accelerate children's understanding; and his research, echoing Wood's (1995) earlier studies, reinforced the importance of clear modelling and explanation of temporal terminology. Teachers can make a difference if they take the time to explain, and reinforce, key terms associated with historical time and change, and if they do not begin with assumptions about what children of any age know and understand. As indicated above, by the end of primary school children should be introduced to the language of periodisation, including decade, century and the conventions of the western (Christian) calendar through progressive, consistent and effective teaching.

Many writers cite West's (1981a) work as influential in promoting the development of chronological understanding in primary schools. West was keen to emphasise that Key Stage 1 and lower Key Stage 2 children should initially and predominately carry out sequencing activities, drawing upon their wider contextual knowledge and reasoning skills, rather than focus on complex historical dates and periods. Many other researchers have adapted West's picture sequencing work, including studies by Harnett (1993), Lynn (1993) and Stow (1999), with sequencing and chronology often underpinning wider research into children's historical understanding. All these works repay further study because they demonstrate how sequencing can also help the assessment of children's historical understanding, and the common misconceptions they display.

Comparing objects and pictures, which obviously links with the concepts of 'similarities and differences', can begin at the start of Key Stage 1, possibly including the foundation stage. A direct comparison should ideally begin with two commonplace objects, for example home appliances linked to common Early Years Foundation Stage/Key Stage 1 themes such as the 'home' or 'when granny was a girl' (refer to Chapter 8 for more

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details of these units). For example, compare Figures 3.1 and 3.2, two photographs of domestic irons.







Figure 3.2 Modern electric steam iron

Both irons have an identifiable design, or basic shape in common, principally linked to the flat plate and the location and function of the handle. Beyond these important similarities (in other words, points in common), there are very profound and important differences which could result in follow-up lines of enquiry. The mode of heating the plate is very different, namely direct transference, or conduction to use its technical term from science, compared with an electrical element. The other main difference is also associated with science, namely chemistry and the study of materials, and references the replacement of largely iron (and wood)

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components with aluminium (and its alloys) and plastics. Any teacher who has carried out comparisons of this sort will quickly realise that similarities and differences can often be reduced to design, materials and, less commonly, a slightly different function. Of course, for younger children some of the complexities of technological change may be beyond their understanding. For example, consider early dial phones compared with modern mobile cellular technology. But here the differentiation, or outcomes, should be limited by children's observational skills and prior knowledge rather than preconceived ideas of what children ought to know. It could be argued that the main role for the teacher is to initially model the process of close observation and comparison so that children have had an example from which to base their own observations and language of analysis.

The next stage, ideally by the end of Key Stage 1 and then into the early stages of Key Stage 2, is the sequencing of a range of historical objects and pictures. Thus clothes, toys, household objects – indeed, almost any form of technology which can enter the classroom through artefacts or photographs/illustrations – can be sequenced. Once again, whatever the teaching level, teachers should model at least some of this process and explain their reasoning, thus illuminating the forms of analysis and prior knowledge they are using. Fundamentally, it is about understanding clues such as materials and design, or obsolescence, and therefore what we use instead today. In the example in Figure 3.3, to continue the theme of domestic irons, the introduction of the first electrically heated iron (second on the left) produced an exceptionally heavy object weighing around 10kg, followed by much lighter, partially plastic models and, finally, the very light and efficient steam irons most of us are familiar with.



Figure 3.3 Sequencing domestic irons from earliest to most recent

Any sequencing activity can be made more challenging, and therefore extended to almost any level, by the addition of dates, or research into sequence and dates. Some forms of reasoning, and certainly aspects of history linked to technology and manufacturing, have a definite logic in the order (although the same cannot be said of cultural trends such as fashion, which are partially cyclical). For example, with primary trainees, often including mature students, I ask them to sequence several illustrations of important inventions, such as the steam engine, the first powered flight, and electronic computers. I have observed that when this is carried out by reasonably large groups there is a collective wisdom that usually gets the sequence reasonably accurate, although the dates are often wayward. But this should not mean that children's ability to sequence historical objects and images should be underestimated; research has tended to reveal the importance of wider, out-of-school knowledge and context (West, 1981a, 1981b; Stow, 1999). Levstick and Barton's (1996) work deserves a brief discussion: their use of images from twentieth-century American political and social history supported West's belief that there is a widely distributed knowledge of historical imagery, often gained from non-traditional sources that children continue to develop throughout their lives.

Another aspect of culturally shared knowledge was Stow's (1999) observation that children often become confused if recent images or objects are damaged or dirty, and the association of age with monochrome images: it seems that cultural stereotypes can also cause confusion in many young children's minds. Yet rather than a barrier to understanding, examples of pristine older objects compared with damaged modern items can reveal the importance of deeper clues than superficial condition. The same is unquestionably true when creating opportunities to discuss how the past may be misrepresented by grainy, monochrome images, and that the people in old photographs (and it is worth noting that photographic images are now almost 200 years old) would have viewed their world just as vibrantly and viscerally (more so in the case of smell) as children do today.

THE USE OF TIMELINES

Arguably, the most influential teaching approach is the development and use of timelines. If any more evidence is required about the challenge of understanding historical (and geological timeframes) one only need think of the well-known metaphor of the history of the Earth being compressed into a calendar year, with *homo sapiens* emerging at five minutes to midnight on New Year's Eve. Indeed, any adult could be challenged to honestly claim that they can mentally conceive a thousand-year duration, let alone a million years, or the 4.54 billion years since the Earth was formed. It is doubtful whether human experience can relate to such (\bullet)

timescales. And in this sense, certain aspects of popular culture, and even quite well-regarded children's books, add to the difficulty by hugely compressing and distorting longer time periods. I often show students a book written for children which relates British history to roughly two decades on every page, but then uses the first two pages to cover the formation of the Earth and the appearance of modern humans (over 4 billion years in two pages). This cannot be helpful for children's understanding of historical timescales.

The initial guidance from the first iteration of the National Curriculum, and some practitioner research (White, 1997), recommended the use of personal timelines in Key Stage 1. Two comments immediately need to be made: first, this approach will ultimately be unsuccessful without the cooperation of parents, guardians and even the wider family; second, it is a potentially dangerous activity to carry out with some children and safeguarding issues must always be considered. Nevertheless, I used this approach as a Key Stage 1 teacher, and always with personal photographs which the children ordered themselves and then displayed, usually in the form of a washing line. One thing to note is that the distinction between sequencing and timelines at this level is not easy to make, but it could be argued that the introduction of dates and labels (with information gathered from their families) made this activity a timeline. The usual events the children remembered, or had photographic evidence of, included the birth of siblings, pets, moving to a new house, starting school, family holidays and birthday parties. The potential risk is when young lives also encompass family deaths or relationship problems, etc. Equally, one can understand why this was a suggested approach because it aligns with Piagetian ideas about the importance of personal experience as a starting point for ordering and sequencing events in time.

The next stage is also linked to the sequencing activities outlined above. Following a sequencing activity, linked to objects, images or both, research could be carried out to find out the accurate order, and then dates used to develop a sense of duration and time intervals. This last point deserves a little thought. If dates are to be used, unlike the example given above, the intervals must be roughly accurate if children's understanding of historical time periods is to progress. Thus a 100-year period should take roughly twice the distance covered by 50 years. Therefore, progression throughout Key Stage 2 ought to correspond with increasingly accurate mathematical timescales and a sense of proportion.

A key argument is that throughout Key Stage 2, each classroom should have a prominent timeline linking together all history topics, and indeed, all other forms of learning involving historical timescales. Consider some of the likely scales:

• A 10-metre wall could encompass 10,000 years of human history at roughly a metre for every thousand years, but this would result in a very compressed format.

- 10 metres to cover 2,000 years could result in a relatively useful scale, with each metre covering 200 years. This would still result in a rather compressed last section, but at least this would indicate the rate of development in the modern world.
- A 20-metre class timeline to account for 2,000 years would result in 1 metre for each century, and this would allow enough space for the inclusion of many important events.
- The ideal would be a 40-metre timeline using the 1 metre per century (or 10 cm per decade) scale, encompassing the whole classroom. Such a timeline could represent a significant amount of ancient history. If used carefully, and in conjunction with interactive virtual timelines, Key Stage 2 children would begin to understand the scale of the less reported aspects of history, for example the 600 years of Anglo-Saxon Britain, compared with the relatively brief length of more favoured eras, such as the Victorians, Tudor Britain and the two World Wars.
- The latter point can currently be demonstrated with the archived BBC overview of British History: www.bbc.co.uk/history/interactive/timelines/british/index_embed.shtml
- Or this alternative archived example: www.bbc.co.uk/schools/primary history/timeline/timeline.shtml

This is not meant to be overly prescriptive, but the importance of retaining an accurate and proportionally consistent scale must be emphasised, and arguably 10 cm for each decade is a more realistic scale. If this results in long sections when not much seems to have occurred, then this is still an extremely important and valuable teaching point.

Examples from practice and research reveal that timelines can be demonstrated to children as vertical as well as horizontal, while Cooper (1995, p. 34) argued that with very young children circular time lines may be more appropriate due to their developing understanding of the cyclical nature of astronomical time, such as the pattern of the day and the year (refer to ICT examples below). For older children, the PESRC formula introduced in Chapter 2 can be applied through developing overlapping timelines to extend children's understanding of the differing dimensions to history (Haydn, 1995). This might mean looking at parallel developments in culture, economics, science and technology alongside political changes. In the revised version of the National Curriculum, the general statements introduced above reiterated the importance of the different strands of history, thus allaying the fears that the focus would solely be placed on political history, with the inclusion of the statement that contextual studies should include 'cultural, economic, military, political, religious and social history; and between short- and long-term timescales' (DfE, 2013, p. 188). Thus, the remit is now broader with the inclusion of military themes (see Table 3.1).

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Political	Timelines of monarchs, prime ministers, key political events, etc. In many respects the most obvious and common forms of timelines.		
Economic, Technological and Scientific	Arguably the most interesting aspect of history in the sense that technology and science generally progress, often with simultaneous inventions. This could also include key scientific and mathematical discoveries as well as the more obvious key inventions. The scope could include continental and world themes, including intellectual movements such as the Renaissance and Enlightenment. An example, the development of radio waves, is included in this chapter.		
Social	Here the potential scope is endless. The focus could include citizenship themes, such as timelines demonstrating women's rights, or key legislation that has improved the lives of children and minorities.		
Religious	The addition of religion was a later amendment, and it is fair to state that this theme has received less attention in primary schools than the other dimensions, but it would be possible to produce a timeline illustrating key religious events, such as the establishment of the main world religions and key moments, such as the Reformation, and possibly events at the local level.		
Cultural and Aesthetic	Here the scope is vast and can be adapted to fit virtually all history units. I have produced examples linked to fashion, music and sporting events, such as the modern Olympic Games.		
Military (introduced in revised National Curriculum)	The examples included in this chapter demonstrate how useful timelines can be in terms of organising children's understanding of complex events.		

Table 3.1 The dimensions of history

A further extension to challenge upper Key Stage 2 children would be to demonstrate or develop simultaneous timelines on a range of geographical scales, for example contrasting local, national and international events over the same period (Chapman, 1993). In the latter case, books that demonstrate timelines can be useful. The publisher Dorling Kindersley continues to produce a range of beautifully illustrated history textbooks that often overlay several timelines, some comparing continental developments over the same time periods. An excellent example is the American publication The Timetables of Science (Hellemans and Bunch, 1988), which is now available as an online book. This text vertically overlays six timelines associated with mathematics, science and technology. One of the main virtues of this book is its emphasis on how synoptic and interdependent most scientific knowledge is. It is a European or western conceit to think that most world events and principal discoveries happened in 'our' continent. More accurately, parallel developments were happening throughout the world. China retained an

overall technological advantage over Europe until well into the second millennium CE/AD, and while North America remained technologically in the Stone Age until European settlement, in South America it was a different story with full metallurgy, including smelting and casting in some cultures. Equally, the Mayan civilisation independently developed the concept of zero, something not achieved by either the Greek or Roman civilisations. In summary, throughout Key Stage 2 either children should be exposed to timelines in a range of scales and forms or they should be sequencing events and developing their own timelines and contributing to class ones – at every opportunity.

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AN EXAMPLE FROM SCIENCE AND TECHNOLOGY

The timeline presented in Figure 3.4 provides a brief and rather underdeveloped example, due to space restrictions, of the logical progress inherent in the development of technology. It begins with the discovery and identification of radio waves, their initial application in domestic radio broadcasts, followed by the invention of television once a way to convert light into an electrical signal had been discovered. Each subsequent development was dependent on the inventions that came before it. In this example, there is a clear sense of scientific and technological progress and the logical development of ideas, which is not true of other forms of historical change.

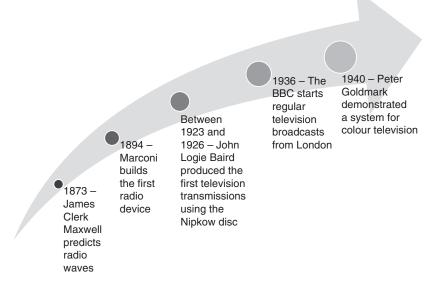


Figure 3.4 A synoptic timeline demonstrating the evolution of broadcasting using radio waves

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THE APPLICATION OF COMPUTING/ICT

Information and communication technology (ICT) can support children through exposure to a wider range of timelines as well as guiding them in their development of their own chronological work. I am hesitant to provide current examples of useful timelines suitable for the primary school. Examples that I provided several years ago (Percival, 2012) are not all currently available, or, in the case of the BBC, have been archived. Nevertheless, the overall technological trend is ineluctably moving towards online teaching resources, and so it would be reasonable to assume that online and interactive examples will ultimately triumph over physical resources (even if the latter are never wholly supplanted).

The timelines produced by the BBC Education and History Departments should also be considered (and it should always be remembered that part of the BBC's charter is to support education, so these are in no sense an unexpected bonus), or the publicly funded British Museum and British Library. Indeed, there are many organisations producing reasonably interactive, online timelines, to the extent that teachers are often spoiled for choice.

However, the more significant potential of ICT is in the range of software that can help children to develop their own timelines. Commonplace software such as Microsoft PowerPoint or Word can help children to sequence historical events, but with limitations such as a sense of historical scale and proportional representation of time. The timeline created by an 11-year-old boy during a recent consultation exercise linked to a focus on World War II and the 'Theatres of War' project discussed in Chapter 2, and presented in Figure 3.5, was time-consuming and difficult to complete, but

10 July	13 August	18 August	7 September	17 September
Luftwaffe attacks British Shipping. The battle begins.	Luftwaffe targets airfields – bad weather stops them.	The 'Hardest Day' Most intensive fighting and heavy losses on both sides.	Luftwaffe night-time raids start to replace daylight bombing – the Blitz begins!	Operation Sea Lion is postponed.
12–15 August	15 August	24 August	15 September	31 October
Germans attack Radar Stations on the South Coast.	The 'Greatest Day' Luftwaffe made	German aircraft accidentally bomb London.	'Battle of Britain Day'	Final daylight raid – the Battle of Britain is over!
	2,000 sorties, and 75 German	Britain bombed	56 German aircraft lost.	
	aircraft were lost.	Germany and Hitler was furious.	anciali lost.	

Figure 3.5 Timeline of the 'Battle of Britain': summer and autumn 1940

it allowed him to develop a more comprehensive overview of how the Battle of Britain began, developed and transmogrified into the Blitz.

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By contrast, the use of pre-formatted diagrams within Word (see Figure 3.6) allowed a 9-year-old girl, working on the same project, to order the main events in the Battle of the Atlantic more as a sequencing activity, restricted to one main event each year, rather than creating an accurate and proportional timeline.

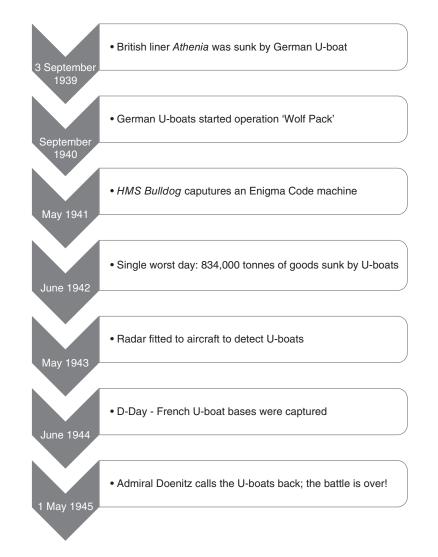


Figure 3.6 Timeline for the 'Battle of the Atlantic' 1939–1945

Other software, such as TimeToast, will allow this. A timescale can be entered when using this program, or the timeline will develop proportionally depending on the dates added, but either way a virtual timeline can be created with accurate time intervals. Compared with software

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routinely covered in the primary school, it is relatively easy to access and use.

Another powerful piece of software is Prezi, now often used by educators as an alternative to PowerPoint. The ability to link text and photographs is an ideal platform for timelines, although unlike TimeToast it will not create the parameters. One important aspect is Prezi's flexibility, including the ability to create a circular timeline as recommended by Cooper (1995).

CHANGE AND CONTINUITY

According to the Qualification and Curriculum Authority (QCA, 2007, p. 112), 'Change and Continuity', as a related yet contrasting pair of concepts, should be closely linked to a 'sense of period', a theme identified by Turner-Bisset (2005, p. 20) as important in developing young children's burgeoning understanding of the past, and linked to overarching themes, including consideration of the pace of change. Despite their recent prominence, this pair of concepts has rarely been discussed by philosophers of history, and Counsell (2011) noted that there is also far less educational research about these concepts compared with other historical terms. Early research into young children's accounts of change found that this concept was often misinterpreted by young children in personal terms, such as substitution, for example related to changes in personal circumstances such as clothes or friends, although by the end of primary school a more mature understanding of historical change and transference often started to emerge. More recent evidence of primary-aged children's ability to understand change was provided by Sampson, Grugeon and Yiannaki (1998) as part of a research project that linked discussion and teacher exposition to key historical concepts and language.

In terms of pedagogy, Counsell (2011, pp. 10–20) advocated making stronger links with narrative to engage pupil interest, developing clearer questioning strategies and allowing enough time for children to develop their ideas and reflections. There has also been some agreement that the concept of change is linked to observation and comparative analysis, particularly with younger children. Hodgkinson (1986) was typical of many primary practitioners who asked children to compare artefacts and to consider how their design and use has changed. Thus, any form of comparison or ordering activity, as outlined earlier in this chapter, should cover these concepts in enough detail.

Where the concept of change becomes more challenging, and arguably beyond most primary-aged children, is in accounting for the reasons for change – in other words, causality in history – especially when combined with an attempt to explain why some things have remained the same. Change and continuity can also occur in several scales and dimensions, ۲

mirroring the timeline activities outlined in this chapter. A 'theme beyond 1066', for example, might look at the history of the British Parliament and contrast the retention of conventions and traditions alongside the major changes to political representation and voting rights that have occurred. The centenary of the rights of woman to vote in the UK (November 1918) is an obvious contemporary example of how a Key Stage 2 project might be aligned with a major anniversary and studied alongside a popular unit, such as the Great War, establishing the relationship between women's crucial work during the war and the added pressure that gave to the strong logical and moral case for voting equality. The fact that full equality for women is still being fought for in several contemporary spheres also demonstrates the ongoing relevance and importance of contextual historical knowledge.

DEVELOPING A 'SENSE OF TIME'

I have a conceit: it is a minor conceit, perhaps, but a conceit all the same. I believe I can watch any motion picture I have not seen before and guess its year of production to within three to five years, even within a couple of years for the 1960s and 1970s. And I am usually quite accurate. The question is therefore: what knowledge, contextual clues and cultural cues am I using to date the films? It is made harder when older films are representing the past, so in these cases there is also a layer of historiography to consider – the past as it was represented in the past.

I principally use my knowledge of fashion, slang and the technology represented to date films set in their own time. Soundtracks can also offer important clues if they accurately represent musical trends at the time of production. Films are often culturally significant in the sense that they help to determine contemporary fashions, and so these are important signifiers. I also use some more technical clues, such as the dyes used in film stock. Unquestionably, the use of certain film dyes and processing techniques can help to identify most post-war decades think of the browns and pastels in early 1970s films – and this I combine with knowledge of directorial styles. I would argue that the previous examples are a kind of folk knowledge. I have never formally studied film-making, nor attempted to analyse it before. But it does raise an important consideration. Children self-evidently are not born with any knowledge about the past, so if a 'sense of period' or a 'sense of time' have been identified by bodies such as Her Majesty's Inspectorate and the QCA as markers of historical understanding, a theme returned to in Chapter 12 on assessment, then our role as educators is surely to build up children's bank of knowledge, particularly historical imagery, but also to help them to question and analyse the clues and knowledge they are using, and to identify the main indicators of the historical periods they are studying.

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CONCEPTS OF CHRONOLOGY AND CHANGE 51

Many of the citations in this chapter, notably the work of West, Stow and Harnett from the UK, and Levstick and Barton from the USA, support the claim that children begin to build up their personal 'bank' of historical imagery from quite a young age, and often from non-academic sources. The role of primary educators is surely to build upon these foundations, to introduce criticality (for example, is it true that Vikings wore horns on their helmets?) and analysis to enable children to think more carefully about the signifiers of the past. These are themes that I will return to in Chapters, 4, 5, 6 and 7.

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CHAPTER SUMMARY

- Chronology is one of the key organising concepts in history and is essential for the development of children's historical understanding at any age:
 - In the Early Years curriculum, teachers should consider the accurate and careful use and explanation of language associated with time, especially the propositions before, after, yesterday, tomorrow, etc.;
 - In Key Stage 1, children should have the opportunity to develop personal timelines;
 - In Key Stages 1 and 2, there should be increased links with mathematics and time: days, weeks, months, seasons, years, etc.;
 - Children should be given the opportunity to carry out sequencing activities that link historical evidence and reasoning;
 - Teachers should include opportunities for children to experience the different dimensions of history;
 - Above all, history projects should include the creation and use of timelines, including books and class displays;
 - In the use of ICT, including virtual timelines and programs like Prezi or Time-Toast;
 - o In opportunities for historical reasoning based on accounts of historical change;
 - The ultimate learing goal should be to develop children's burgeoning 'sense of time'.

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— FURTHER READING -

Cooper, H. (2018) *History 5–11: A Guide for Teachers* (3rd edn). Abingdon: Routledge. Chapter 4 on Chronology.

The oldest and best general text on primary history which contains an important chapter on chronology (Chapter 4).

Harnett, P. (1993) Identifying Progression in Children's Understanding: The Use of Visual Materials to Assess Primary Children's Learning in History. *Cambridge Journal of Education*, 23(2): 137–54; and Lynn, S. (1993) Children Reading Pictures: History Visuals at Key Stages 1 and 2. *Education 3–13*, 21(3): 23–9.

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Both of these articles sprang from an extensive and fascinating empirical research project into children's ability to sequence historical images.

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Hodkinson, A. (2007) The Usage of Subjective Temporal Phrases within the National Curriculum for History and its Schemes of Work – Effective Provision or a Missed Opportunity? *Education 3–13*, 31(3): 28–34.

Hodkinson carried out doctoral research into the development of chronological understanding and published widely on this subject.

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