ACET Junior Academies'

Scheme of Work for history

Unit 6: Inventors.



About this unit:

This is the last history unit of key stage 1 and aims to bring together some of the topics pupils have studied in addition to introducing them to some of the time periods they will cover at key stage 2 and beyond in history. In this unit, pupils consider significant inventors and their inventions across time. Focussing primarily on changes to the way in which we communicate with each other, pupils investigate three key inventions in chronological order - the printing press, the telephone and the World Wide Web. Using Ian Dawson's criteria for significance (which will also form the basis for significance enquiries at key stage 2), pupils have to compare the significance of each inventor and consider why they were able to make that invention at that time. At the end of the unit, pupils are then asked to consider who they think was the most significant inventor of all time and why. Following on from other units, this scheme is underpinned by focussed enquiry led questions, second order and substantive concepts including the use of adverbial phrases. Links will also be drawn with previous learning in addition to laying the foundations for time periods pupils will study in greater depth at key stage 2 and beyond.

Unit structure

This unit is structured around five sequential history enquiries:

- 1. What is an inventor?
- 2. Who was Guttenberg and why was his invention significant?
- 3. What did Alexander Graham Bell invent and how did he change how we communicate?
- 4. Who is Tim Berners-Lee and how has his invention changed our lives?
- 5. Who is the most significant inventor of all time?

National Curriculum unit:

• The lives of significant individuals in the past who have contributed to national and international achievements.

Links to previous and future National Curriculum units

- Changes within living memory: Toys and Games (Y1 HT3.1) and Shopping (Y2 HT1.2)
- A study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066: The Tudors (Y5 HT1.2), The Victorians (Y5 HT2.1) and The Second World War (Y6 HT1.1)

	Enquiry	1: Wh	at is an inventor?			
Links to previous learning	Knowledge and second order concepts	Historical skills:		Assessment criteria:	Curricular links:	
Pupils should already understand that computers, mobile phones and the internet are relatively new inventions. They should also understand that some events happened a long time	Substantive knowledge: (What the children should know.) An inventor is someone who designs something to solve a problem. There have always been inventors. Inventors are limited/helped by the time period in which they live. Second order concepts: (What students should understand)	- Chronology - place the person studied on a timeline (with support) Range & depth - understand why people did things and what happened as a result. Key concepts: Then/now Past/present Technology Renaissance		Can your children: - place da Vinci on the class timeline (with support)? - describe who da Vinci was? - identify possible problems da Vinci might have faced which Board doesn't? - describe how significant da Vinci was using criteria?	Horizontal: Vertical:	
before they were born.	Significance Change					
Suggested activities: Punils could first of all he s	hown a PowerPoint slide showing pictures of differe	nt	Resources: PowerPoint showing	Useful links: BBC Teach clip 'Proud to be an inventor':		
inventors from across time and asked, what do all these people have in common? The teacher could then tell them that they are all inventors and place each on the class timeline. NB. The aim of this exercise is to introduce pupils to the topic and show that there he always been inventors. Pupils could then watch the first part of the BBC Teach clip 'Proud to be an inventor' what is an inventor? What has Ben Board (inventor from clip) invented? What has Ben Board got to help him with his work? Do you think inventors have always had the technology to help them? Next, pupils could look at da Vinci - locate da Vinci on the class timeline - how long ago was da Vinci alive? Who was he? What did he do? Pupils could then look at picture sources of some of da Vinci's inventions - what did he invent? Do they think they would have worked? They should then consider why were many of these inventions never made? Would Ben Board have been able to make these inventions today? Why? NB. He it is important that pupils understand that inventors are restricted/helped by the time period in which they lived. Finally, pupils could have a go at making one of da Vinci's inventions - the parachute - does it work? Why did da Vinci invent a parachute? NB. Da Vinci designed it for jumping of burning buildings. How significant were da Vinci's inventions? For this last question, pupils could use Dawson's significance criteria to judge the significance of da Vinci as		class there have entor' - nas Ben ne ong ago ure ey would ver NB. Here period in nute - umping out stion,	images of the famous inventors students are going to learn about. Images of inventors for class timeline. BBC Teach clip. Examples of da Vinci's inventions with accompanying worksheet. Template of da Vinci's parachute and materials to make. Criteria tick list.	https://www.bbc.co.uk/teach/class-clips-video/pshe-ks1-ksproud-to-be-an-inventor/zrf76v4 For background reading on da Vinci: https://www.leonardodavinci.net/ For da Vinci's inventions with original sketches: http://www.leonardo-da-vinci.net/inventions/ For information about da Vinci's parachute: https://www.bl.uk/onlinegallery/features/leonardo/parachutml For a template for the parachute: https://funstuffonly.com/renaissance_learning/lessons/sc_para_template.htm For a clip showing da Vinci's parachute: https://www.youtube.com/watch?v=Ng5jTOEq9GM For Dawson's criteria: http://canonshistory.weebly.com/what-criteria-can-we-usemake-a-judgement-about-significance.html		

Enquiry 2: Who was Guttenberg and why was his invention significant?					
Links to previous learning	Knowledge and second order concepts	Historical skills:	Assessment criteria:	Curricular links:	
Pupils know what an inventor is and what they do. They should also have started to understand that there have been many different inventors but inventors such as da	Substantive knowledge: (What the children should know.) Guttenberg invented a printing press. Before Guttenberg, books were handwritten which made them rare and expensive. William Caxton introduced the printing press to Britain. Guttenberg was significant because	 Chronology - place the person studied on a timeline (with support). Range & depth - understand why people did things and what happened as a result. 	Can your children: - place Guttenberg on the class timeline (with support)? - describe the change made by Guttenberg and the consequences? - compare Caxton and	Horizontal: Vertical:	
Vinci were constrained by	Second order concepts:	Key concepts:	Guttenberg?		
the time period in which they lived.	(What students should understand) Cause and consequence Change Significance	Then/now Past/present Technology Communication Renaissance	- describe how significant Guttenberg was using criteria?		
Suggested activities:		Resources:	Useful links:		
Pupils could start by considering what they think is the most important invention ever? Why? How has it changed people's lives? Next, the teacher could show the pupils a book and explain that a great invention was to do with books. Pupils could then be introduced to Johannes Guttenberg and the printing press. They could place Guttenberg on the class timeline. It could then be explained to pupils how books were produced before Guttenberg - this could be through a short role play where pupils take on the role of monks and copy up a book. Pupils could be sat in rows with monastic music played in the background for added affect! Pupils could then be asked about the problems of producing books in this way. Why would Guttenberg's invention be so important? Pupils could even then have a go at printing. Pupils could then move onto looking at William Caxton and how he brought the printing press to Britain. Pupils could then complete a Venn diagram comparing Guttenberg and Caxton. NB. Caxton was not an inventor he was simply the first person to bring a printing press to Britain.		A book(s)! PowerPoint outlining Guttenberg and what he did. Props for role play - as simple or as complicated as you wish! Wooden blocks for printing. Venn diagram and statements for Caxton and Guttenberg. Criteria tick list.	Sprigge, 'How technology has changed our lives', Primary History 76 (summer 2017). For a short biography of Guttenberg: https://www.ducksters.com/biography/johannes_gutenberg.html Gor: https://www.historyforkids.net/johannes-gutenberg.html For William Caxton: https://primaryfacts.com/3019/william-caxton-facts-and-information/ For Caxton's 'first' printed page in Britain: https://www.nationalarchives.gov.uk/museum/item.asp?item_id=9 For a whole documentary on Guttenberg including how the printing press worked: https://www.youtube.com/watch?v=uQ88yC35NjI For Caxton including people's views of the importance of the printing press:		
Finally, pupils could assess the significance of Guttenberg using Dawson's criteria – remember, many people have never heard of Guttenberg, why not? Should he be remembered? Guttenberg's picture could then be added to a 'Wall of Significance' display depending on how important pupils think he was. NB. Da Vinci made improvements to Guttenberg's printing press. Also, without the printing press, many of the new ideas of the Renaissance would never have been spread.			the printing press: https://www.youtube.com/watch?v=_aR_f8qQGx4 For Dawson's criteria: http://canonshistory.weebly.com/what-criteria-can-we-use-to-make-a-judgement-about-significance.html		

Enquiry 3	3: What did Alexander Gra	<u>ham Bell invent o</u>	and how did he d	change how we communi	icate?
Links to previous learning	Knowledge and second order concepts	Historical skills:		Assessment criteria:	Curricular links:
Pupils should know what inventors do and how Guttenberg's invention helped to improve communication.	Substantive knowledge: (What the children should know.) Bell invented the first telephone. Telephones have changed over time. Bell's invention was significant because Second order concepts: (What students should understand) Cause and consequence Change Significance	- Chronology - place the person studied on a timeline (with support) and sequence objects Range & depth - understand why people did things and what happened as a result and differences at different times Enquiry - use an artefact to find out about the past. Key concepts: Then/now Past/present Communication Technology Victorian		Can your children: - answer simple questions about an artefact? - place Bell on the class timeline (with support)? - describe what Bell invented? - sequence telephones in chronological order and identify how they have changed? - describe how significant Bell's invention was and compare him to Guttenberg?	Horizontal: Vertical:
Suggested activities:			Resources:	Useful links:	
you think it is? How do you telephone invented by Bell-on the class timeline. Next, pupils could learn about the class timeline. Pupils could 'hotseat' Bell are to make his discovery when Emphasise the reasons why closely with deaf people. Pupils could then look at telepictures of telephones into It is important here that pusing smartphone! Finally, pupils could use Daw Bell - why is Bell significant	at a picture of Bell's first telephone - what think it works? The teacher could then rever how did people communicate before this? But Alexander Graham Bell Who was he? Wand then create a storyboard/biography of Bell he did? Why was this important - what char Bell was interested in sound - his mother was ephones through the ages - how have they can chronology - earliest to latest - how have a chronology - earliest to latest - how have supils recognise that we did not go straight fileson's criteria or criteria of their own to asson's criteria or criteria of their own to asson's where should he be placed on the 'Wall of an Guttenberg? Why? Why would Guttenberg	al that it was the first sell should then be placed what did he invent? Why? ell's life. Why was he able age did it bring about? NB. as deaf and he worked hanged? They could sort they changed? Why? NB. rom Bell's phone to the ess the significance of Significance? Was he	Picture of Bell's telephone with questions around. PowerPoint/clip outlining who Bell was OR someone willing to be Bell! Storyboard/biography for pupils to complete. Pictures of telephones through the ages. Criteria tick list.	Sprigge, 'How technology has chang History 76 (summer 2017). For a more detailed biography of Be http://www.bbc.co.uk/history	ell: oric_figures/bell_alex and a short video : oics/zxwxvcw/articles : -clips-video/true- gd6f es over time: k/Resources/interacti ng/html5.html hat-criteria-can-we-

Enquiry 4: Who is Tim Berners-Lee and how has his invention changed our lives?					
Links to previous learning	Knowledge and second order concepts	Historical sk	ills:	Assessment criteria:	Curricular links:
Pupils should know what Guttenberg and Bell invented and how this new technology changed how we communicate. In the units on 'Toys and Games' and 'Shopping', pupils have also learnt Substantive knowledge: (What the children should know.) Tim Berners-Lee invented the World Wide Web. Berners-Lee would not have been able to make his invention without previous inventions eg. computers. Berners-Lee's invention was significant because Second order concepts: (What students should understand)		 Chronology - place the person studied on a timeline (with support) and sequence events. Range & depth - understand why people did things and what happened as a result and differences at different times. Key concepts:		Can your children: - place Berners-Lee on the class timeline (with support)? - describe what Berners- Lee invented? - sequence a range of events in chronological order? - describe how significant	
about how the Internet and World Wide Web have changed our lives.	Cause and consequence Change Significance	Then/now Past/present Communication Technology 20 th Century		 describe how significant Berners-Lee's invention was and compare him to Guttenberg and Bell? 	
Suggested activities:		Resources:	Useful lin	ıks:	
an engineer, computer-scier Olympics 2012, he was knigh most influential people of the invented the World Wide W then be shown a short clip of the class timeline. Pupils could then listen to the	hat did he do?' - they could be given various clues e.g. he is ntist and inventor, he was invited to the opening of the hted by the Queen', he has been named as one of the 100 he 20 th century. The teacher should then reveal that he Web NB. Not Internet, this is something different. Pupils could of Berners-Lee talking. His picture should then be added to the story of Berners-Lee's life and his invention. They could lay explaining how his invention worked - what change did it	Pictures of Tim Berners-Lee with clues. Clip of Berners-Lee. Story of Berners- Lee's life.	Sprigge, 'Ho (summer 20) For a biogro http://www tml Or: https://www	•	res/berners_lee_tim.sh
make? Why was this important? Pupils could then create a storyboard/biography of his life similar to the one they made for Bell. Pupils could then look at the development of computers over time - they could sequence key dates/events in chronological order - Why were they invented in that order? NB. It is important here that pupils understand that quite often inventions are connected and that some inventions rely upon others. Links can also be made to the previous units on Toys and Shopping where they have looked at technological changes. Finally, pupils could use Dawson's criteria or criteria of their own to assess the significance of Berners-Lee - why is he significant? Where should he be placed on the 'Wall of Significance'? Was he more or less significant than Guttenberg or Bell? Why? Why would Guttenberg and Bell not have been able to invent the World Wide Web?		Storyboard/biography for pupils to complete. Cards with key events in the development of computer, Internet and WWW. Criteria tick list.	https://www.w3.org/People/Berners-Lee/Kids.html#tell For a clip showing Berners-Lee talking: https://www.ted.com/talks/tim_berners_lee_the_next_web For Berners-Lee in the Olympic opening ceremony: https://www.youtube.com/watch?v=KW6ivwDcOY4 For a history of the computer: https://www.timetoast.com/timelines/history-of-the-computer-for-kids For Dawson's criteria: http://canonshistory.weebly.com/what-criteria-can-we-use-to-make-a-judgement-about-significance.html		

	Enquiry 5: Who is the most	signi	ficant inventor	of o	ıll time?	
Links to previous learning	Knowledge and second order concepts		Historical skills:		Assessment criteria:	Curricular links:
Pupils should know what Guttenberg, Bell and Berners-Lee invented and how these changed the way we communicate. They should also understand that what can be invented, often depends on the time	Substantive knowledge: (What the children should know.) There have been many inventors who have invented lots of different things which have changed our lives. What an inventor can invent, depends on the time period in which they lived for example, Bell could not have invented the World Wide Web because he did not have a computer! Second order concepts: (What students should understand) Cause and consequence Change Significance		Chronology - place the person studied on a timeline (with support). Range & depth - understand why people did things and what happened as a result and differences at different times. (Ley concepts:		Can your children: - place their inventor on the class timeline (with support)? - describe what they invented and why this was important? - identify and start	Horizontal: Vertical:
period in which the person lived and what they had available.			rnow present e/after g terminology relating to a	time	to explain who they think was the most significant inventor of all time based on Dawson's criteria?	
Suggested activities:			Resources:	•	ıl links:	
The first option could be to important invention of all time beforehand as well). Pupils of	vill depend very much on the ability of the class. start by asking pupils once again what they think was the mos me (pupils could have found out from parents/carers their opin could then research the invention using the school library, inte n? Why is it important? - before/after. Why did people befor	nions ernet	Access to the library/Internet. Worksheet with space for key information.	commu Sprigge <i>Histor</i> y For a li	ks to further inventions linkenication which could be inclued, 'How technology has changer 76 (summer 2017). St of notable inventors and the entire and the	ded: ged our lives', <i>Primary</i> what they invented:
The second option could be more teacher guided - pupils could be provided with information of inventors and key inventions. They could then find out when it was invented, think about why was important - before/after - and why the invention was possible at that time. As pupils complete their work, their inventor should be added to the class timeline with a picture/description of what they invented.		vhy it	Information on a range of inventors and what they invented with accompanying worksheet.	https://www.cadcrowd.com/blog/100-famous-inventors-and-their-best-invention-ideas/ List of inventors with child friendly information: https://kids.kiddle.co/Inventor		
Finally, in groups pupils could present their inventor back to the rest of the class explaining why they were significant. The rest of the class could then complete a tick list with the criteria. Pupils could then decide which inventor with which invention goes where on the 'Wall of Significance'. This may then lead to some writing where pupils justify their sequencing. NB. When selecting inventors, they could be linked to the local area. Also, consider diversity all the inventors pupils have looked at so far have been white, middle class males.		Vall	Pictures for class timeline and 'Wall of Significance'. Criteria tick list.	There is also a series of books by Mike Venezia: Getting to know the world's greatest inventors and scientist For Dawson's criteria: http://canonshistory.weebly.com/what-criteria-can-we-use-to-make-a-judgement-about-significance.html		st inventors and scientists. vhat-criteria-can-we-use-

END POINTS:

Knowledge and second order concepts:

Substantive knowledge:

(What the children should know)

An inventor is someone who designs something to solve a problem.

There have always been inventors.

Some inventions have changed our lives and the way in which we communicate.

What an inventor can invent depends on the time period in which they live for example, Bell would not have been able to invent the World Wide Web. Historians often use criteria to judge the significance of people in the past.

This is not an exhaustive list but an outline of what might be expected.

Second order concepts:

Children should start to have an understanding of:

Cause and consequence

Change

Significance

Key concepts developed:

20 th Century	During	Technology
Before/after	Past/present	Then/now
Communication	Renaissance	Victorian

Key historical skills developed:

By the end of the unit, children will have studied a series of question led enquiries. In do so, children will have had the opportunity to:

- sequence events in chronological order.
- place key people on a timeline (with support).
- investigate a range of artefacts and use them to answer simple questions about the past.
- start to understand cause and consequence.
- develop the use of language to describe the past and present.
- consider the significance of people in the past using set criteria.

The next step ...

This is the final history unit of key stage 2. In year 3, pupils will begin by studying the 'Changes in the Stone Age'. The aim of this unit is to introduce pupils to idea that people have been living in Britain for a very long time. Pupils will consider similarities and differences between their own lives and those of people in the Stone Age. They will also start to gain an understanding of change and continuity across time. Focussed around enquiry questions and underpinned by second order and substantive concepts, this unit will continue to build pupils' historical narrative of the British Isles within a broadly chronological framework. Pupils will continue to utilise timelines and draw links to previous learning at key stage 1.