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: What 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 before they were born.	**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)* Significance Change **Key concepts:** Then/now Past/present Technology Renaissance	- 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 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:**

Suggested activities:	Resources:	Useful links:
Pupils could first of all be shown a PowerPoint slide showing pictures of different 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 have 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. Here 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 out 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 an inventor or could devise their own criteria.	PowerPoint showing 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.	BBC Teach clip 'Proud to be an inventor': https://www.bbc.co.uk/teach/class-clips-video/pshe-ks1-ks2-proud-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/parachute.html For a template for the parachute: https://funstuffonly.com/renaissance_learning/lessons/science_para_template.htm For a clip showing da Vinci's parachute: https://www.youtube.com/watch?v=Ng5jIOEq9GM For Dawson's criteria: http://canonshistory.weebly.com/what-criteria-can-we-use-to-make-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 Vinci were constrained by the time period in which they lived.	**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 … **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. **Key concepts:** Then/now Past/present Technology Communication Renaissance	**Can your children:** - place Guttenberg on the class timeline (with support)? - describe the change made by Guttenberg and the consequences? - compare Caxton and Guttenberg? - describe how significant Guttenberg was using criteria?	**Horizontal:** **Vertical:**

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.* 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.*	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.php Or: 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: 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: What did Alexander Graham Bell invent and how did he change how we communicate?

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:
Pupils could first of all look at a picture of Bell's first telephone – what is it made of? What do you think it is? How do you think it works? The teacher could then reveal that it was the first telephone invented by Bell – how did people communicate before this? Bell should then be placed on the class timeline. Next, pupils could learn about Alexander Graham Bell. – Who was he? What did he invent? Why? Pupils could 'hotseat' Bell and then create a storyboard/biography of Bell's life. Why was he able to make his discovery when he did? Why was this important – what change did it bring about? *NB. Emphasise the reasons why Bell was interested in sound – his mother was deaf and he worked closely with deaf people.* Pupils could then look at telephones through the ages – how have they changed? They could sort pictures of telephones into a chronology – earliest to latest – how have they changed? Why? *NB. It is important here that pupils recognise that we did not go straight from Bell's phone to the smartphone!* Finally, pupils could use Dawson's criteria or criteria of their own to assess the significance of Bell – why is Bell significant? Where should he be placed on the 'Wall of Significance'? Was he more or less significant than Guttenberg? Why? Why would Guttenberg not have been able to invent the telephone?	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 changed our lives', *Primary History 76* (summer 2017). For a more detailed biography of Bell: http://www.bbc.co.uk/history/historic_figures/bell_alexander_graham.shtml For information about Graham-Bell and a short video explaining how his invention worked: https://www.bbc.co.uk/bitesize/topics/zxwxvcw/articles/z4vp7nb For longer video about Graham-Bell: https://www.bbc.co.uk/teach/class-clips-video/true-stories-alexander-graham-bell/zf7gd6f For a PowerPoint outlining telephones over time: https://www.museumoflondon.org.uk/Resources/interactives/Changes-in-living-memory-talking/html5.html For Dawson's criteria: http://canonshistory.weebly.com/what-criteria-can-we-use-to-make-a-judgement-about-significance.html

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 skills:	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 about how the Internet and World Wide Web have changed our lives.	**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)* Cause and consequence Change Significance	- 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:** Then/now Past/present Communication Technology 20th Century	**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 Berners-Lee's invention was and compare him to Guttenberg and Bell?	**Horizontal:** **Vertical:**

Suggested activities:	Resources:	Useful links:
Pupils could start with a 'What did he do?' – they could be given various clues e.g. he is an engineer, computer-scientist and inventor, he was invited to the opening of the Olympics 2012, he was knighted by the Queen', he has been named as one of the 100 most influential people of the 20th century. The teacher should then reveal that he invented the World Wide Web *NB. Not Internet, this is something different.* Pupils could then be shown a short clip of Berners-Lee talking. His picture should then be added to the class timeline. Pupils could then listen to the story of Berners-Lee's life and his invention. They could then take part in the role play explaining how his invention worked – what change did it 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?	Pictures of Tim Berners-Lee with clues. Clip of Berners-Lee. Story of Berners-Lee's life. Storyboard/biography for pupils to complete. Cards with key events in the development of computer, Internet and WWW. Criteria tick list.	For the story of Berners-Lee's life and role play of his invention: Sprigge, 'How technology has changed our lives', *Primary History 76* (summer 2017). For a biography: http://www.bbc.co.uk/history/historic_figures/berners_lee_tim.shtml Or: https://www.w3.org/People/Berners-Lee/ Answers for young people from Berners-Lee: 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 significant inventor of all 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 period in which the person lived and what they had available.	**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. **Key concepts:** Then/now Past/present Before/after During *Also terminology relating to time periods.*	**Can your children:** - place their inventor on the class timeline (with support)? - describe what they invented and why this was important? - identify and start to explain who they think was the most significant inventor of all time based on Dawson's criteria?	**Horizontal:** **Vertical:**

Suggested activities:	Resources:	Useful links:
How this task is organised will depend very much on the ability of the class. The first option could be to start by asking pupils once again what they think was the most important invention of all time (pupils could have found out from parents/carers their opinions beforehand as well). Pupils could then research the invention using the school library, internet etc – Who invented it? When? Why is it important? - before/after. Why did people before not invent this? The second option could be more teacher guided – pupils could be provided with information on inventors and key inventions. They could then find out when it was invented, think about why it 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. 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.*	Access to the library/Internet. Worksheet with space for key information. Information on a range of inventors and what they invented with accompanying worksheet. Pictures for class timeline and 'Wall of Significance'. Criteria tick list.	For links to further inventions linked to technology and communication which could be included: Sprigge, 'How technology has changed our lives', *Primary History* 76 (summer 2017). For a list of notable inventors and what they invented: https://en.wikipedia.org/wiki/List_of_inventors Also: 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 There is also a series of books by Mike Venezia: *Getting to know the world's greatest inventors and scientists.* For Dawson's criteria: http://canonshistory.weebly.com/what-criteria-can-we-use-to-make-a-judgement-about-significance.html

END POINTS:

Knowledge and second order concepts:	Key concepts developed:		

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

20th 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.