Charles Darwin:

exploring the man behind the beard – studying the lives of significant individuals in the past

Sally Stafford

Studying the life of Charles Darwin is an exciting way to meet the requirement in Key Stage 1 to teach significant individuals. But what do we actually know about him, beyond the words 'evolution', '*Beagle* voyage' and 'natural selection'? The letters that Darwin exchanged are a significant primary source to help us understand his personality, family life, friendships and, importantly, the way that he carried out his research. The Darwin Correspondence Project (www.darwinproject.ac.uk) is compiling a comprehensive print and online collection of all his correspondence – amounting to about 15,000 letters.

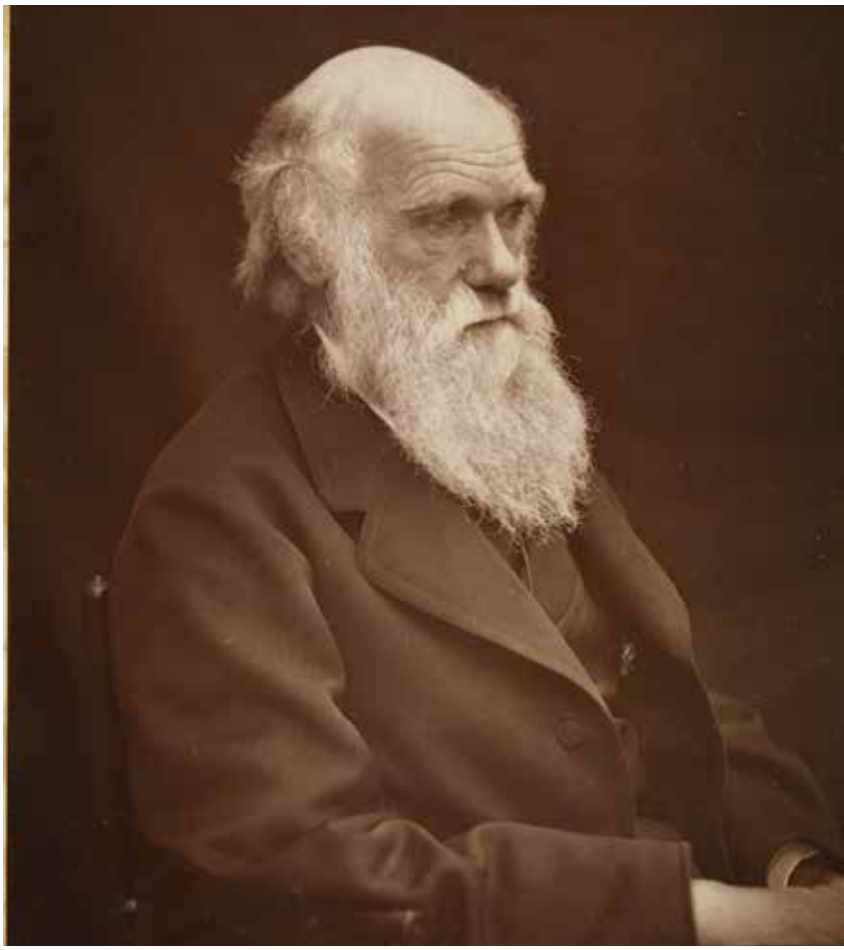
Over the course of his life Darwin wrote to around 2,000 people across the world. He exchanged letters with everyone from the curator of the Botanic Gardens in Calcutta (to ask about the behaviour of his garden worms) to Prime Minister Gladstone (to seek a pension for his colleague Alfred Wallace). In the days before internet and easy travel, it was wise to take advantage of an amazing postal system that made multiple deliveries per day. The world came to him, via letters, giving him access to an enormous scientific network, enabling him to further his research.

Darwin's life in letters

Darwin was often a reluctant scholar. His academic career at the renowned medical school at the University of Edinburgh was short-lived and during his subsequent time at Christ's College in Cambridge, he rarely attended lectures. He preferred instead to explore the byways and hedgerows of the fens, amassing an impressive and competitive beetle collection. His appetite and curiosity for the natural world was exceptional but his formal studies were often neglected, as was noticed by his friends and tutors.

The *Beagle* voyage

It was this enthusiasm for nature that led to him being invited to join HMS *Beagle* on a map-making



voyage, exploring the coast of South America. John Stevens Henslow, Darwin's botany professor, was one of those initially invited to join but who recommended Darwin in his place. He acknowledged that Darwin was not a 'finished naturalist' but his indefatigable curiosity made him the man most suited to the job.

Darwin needed the financial backing of his father but also sought his approval for the venture. Sadly his father had a number of (quite reasonable) objections. Darwin summarised these in a list that he sent to his uncle, whom he hoped might persuade his father to change his mind.

Charles Darwin timeline

Darwin event

12 February 1809
Darwin is born

September 1818
Darwin joins Shrewsbury school

October 1825
Darwin begins studying medicine at University of Edinburgh but leaves after two years, finding the sight of blood difficult and studying medicine dull

January 1828
Darwin begins studying for a BA degree at Christ's College Cambridge, with a possible career in the Anglican church in mind

August 1831
Darwin is invited to join HMS Beagle on a two year surveying voyage around the coast of South America

December 1831
Darwin joins Captain FitzRoy aboard HMS Beagle. The voyage lasts for almost five years and takes him all around the world

March 1833
Darwin is horrified by his experiences on slavery plantations

29 January 1839
Darwin marries Emma Wedgwood (his first cousin). Emma assists Darwin throughout his life. They have 10 children, 7 of whom survive to adulthood

1810 | 1820 | 1830 | 1840

UK scientific and political events

September 1818
The first blood transfusion is carried out on a human by Dr James Blundell

October 1825
Royal charter is granted to the Geological Society

January 1828
Mary Anning discovers Britain's first pterosaur fossil at Lyme Regis on the south coast

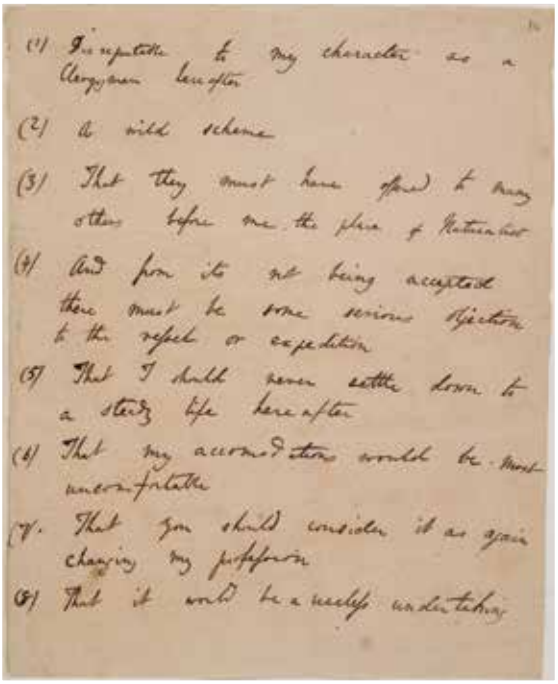
August 1831
First meeting of the British Association for the Advancement of Science

March 1833
Slavery Abolition Act abolishes slavery throughout the British Empire (with some exceptions)

December 1831
British Royal Navy officer James Clark Ross locates the position of the North Magnetic Pole on the Boothia Peninsula

29 January 1839
World's first commercial electric telegraph comes into operation

Darwin depicted on the back of a beetle clutching his net, drawn by his friend Albert Way



The list of Darwin's father's objections to his son joining the voyage aboard HMS *Beagle*

November 1872
Darwin publishes 'The Expression of Emotions in Man and Animals', in which he explores the roots of characteristics and expressions

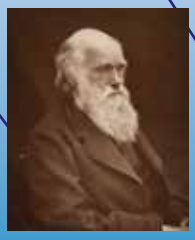
May 1881
Darwin publishes his last book, 'The Formation of Vegetable Mould through the Actions of Worms'. The book outsells all his previous publications

19 April 1882
Darwin dies. Following petitions from the friends and colleagues it is agreed he should receive a ceremonial funeral and be buried at Westminster Abbey rather than in St Mary's churchyard at his home in Downe

24 November 1859
Darwin publishes 'On the Origin of Species by Means of Natural Selection'. It is immediately a best seller although reviews are divided

March 1871
Darwin publishes 'The Descent of Man' focussing on human evolution and sexual selection. He is satirised as an ape in the popular press

July 1875
Darwin publishes 'Insectivorous Plants' 16 years after making his first observations about their ability to digest proteins



1850 1860 1870 1880

24 November 1859
Elizabeth Blackwell becomes the first woman doctor to be entered on the UK medical register

March 1871
The census in the UK is the first to record economic and mental status

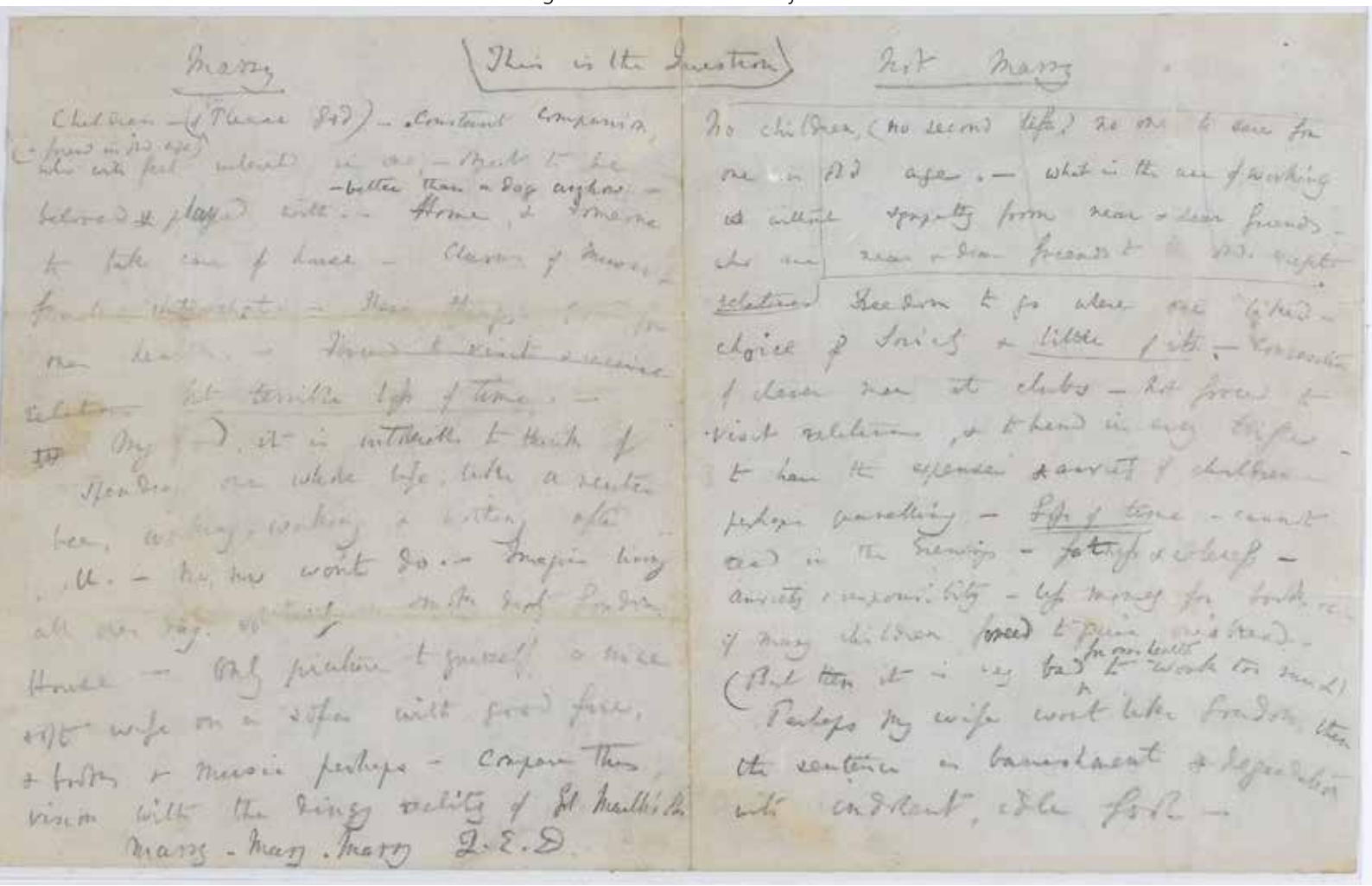
November 1872
The Ballot Act introduces secret ballots in UK elections

July 1875
The Public Heath Act is passed to improve poor urban living conditions

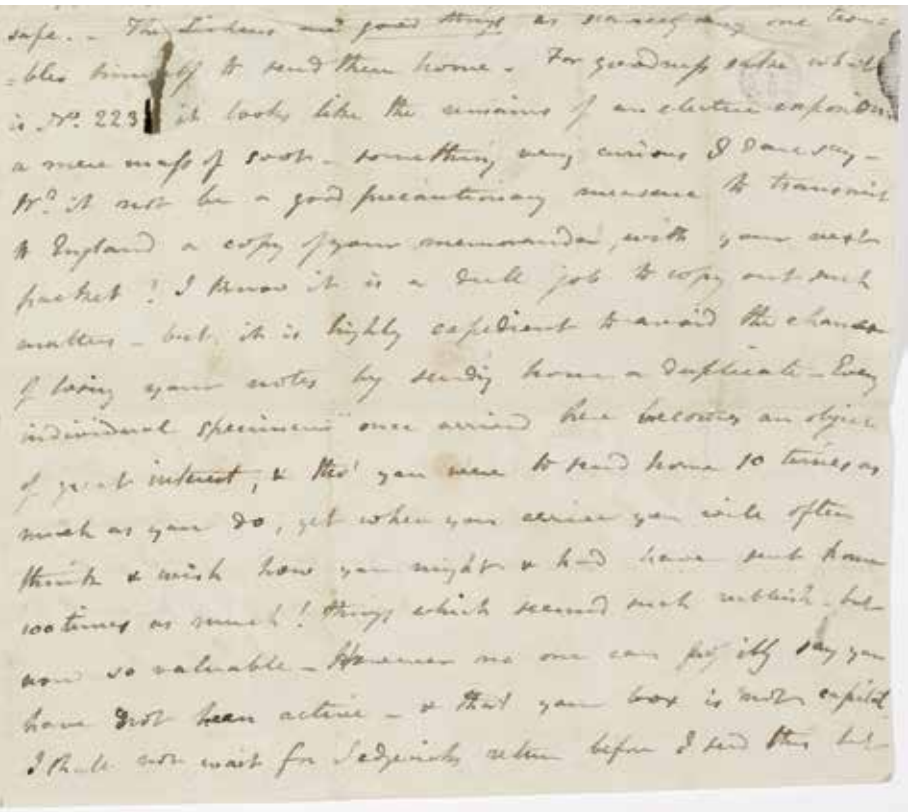
May 1881
The Natural History Museum is opened in London

Route of the *Beagle* voyage

Darwin's 'scientific' method for deciding whether or not to marry



Extract of a letter from Darwin's Botany Professor, John Stevens Henslow, complaining of the state of some of his specimens



The letter did the trick; Darwin's father consented and the ship left Plymouth on 27 December 1831 returning on 2 October 1836. For a young man, such an epic round-the-world voyage (for which there was no guarantee of a safe return) must have been daunting as well as exciting. An equivalent today would probably be space travel and, when asked, children often say that they wouldn't want to leave their families and friends in those circumstances.

Aboard the *Beagle* Darwin suffered many hardships in his small, shared cabin and through his letters home, we know that he was seasick throughout the voyage. Time on land exceeded all his hopes, however, and Darwin described his mind as a 'hurricane of delight and astonishment,' on viewing the diversity of the natural world. He packed up endless specimens of rock, plant, insect and animal, making use of empty sauce bottles, pill boxes and whatever else he had to hand, to store his treasures. On opening the cargo back in Cambridge, however, Henslow asked Darwin to improve his packing and preservation techniques as some mice were 'rather mouldy' and an unidentifiable

specimen had become 'a mere mass of soot'. The letters reveal Darwin's enthusiasm, but also his journey to becoming a scientist and his pitfalls and victories along the way.

Home again

In the spirit of a man of science, when it came to the question of marriage a few years later, Darwin made a list of the pros and cons to help him decide.

He concluded that although visiting relatives would be time-consuming and a dull distraction, a wife would be a constant companion and 'better than a dog anyhow'. Darwin married Emma Wedgwood (his first cousin) on 29 January 1839. The letters indicate that theirs was a happy and devoted marriage; they had 10 children, although only seven survived to adulthood. The household at Down House in Kent was noisy and lively, enhanced, no doubt, by the fact that Darwin had a slide constructed for his children as a more exciting alternative to using the stairs. From birth his children were the subjects of his observations, as they grew older they assisted him in his experiments and research.

Darwin's big idea

After settling at Down, Darwin travelled infrequently, partly due to ill health. His home became his lab and his international correspondents were his research team. He dissected animals on his kitchen table, received strange specimens in the post and fed left-over roast beef to his carnivorous plants.

Contrary to popular belief, he did not publish his findings the moment he returned from his voyage, but spent years reviewing and researching the specimen collections that he had made. He needed to be certain that his conclusions were sound. His most famous work, *On the Origin of Species by Means of Natural Selection*, was finally published in 1859, although he had circulated a draft manuscript to his colleagues several years previously.

There is some debate as to whether he would have published even then, had he not been prompted by a letter he received from Alfred Wallace which outlined similar ideas to that of his own. Wallace had independently come to the same conclusions about how evolution worked, but he had not spent the previous 23 years amassing the evidence for his ideas. Although the concept of evolution was not new in 1859, understanding how it occurred, through the mechanism of natural selection, was ground-breaking, and potentially threatening to Victorian culture and religious values.

Darwin's book sealed his international scientific reputation but it wasn't his only publication. He continued to elaborate on the subject of evolution in several other works, while his last book was about the activities of the humble earthworm. He died in 1882 at the age of 73 and is buried in Westminster Abbey.

Why study Darwin as a 'significant life'?

- He is significant. His views changed how we understand the natural world.
- It introduces him as a person before children have to get to grips with his scientific ideas in Key Stage 2.
- He is now mentioned specifically in the primary science curriculum.
- He provides a link with the key emphasis in Key Stage 1 science on 'observing the natural world'
- His enthusiasm and curiosity for the natural world is engaging and infectious.
- His correspondence gives an insight into aspects of nineteenth-century culture and society.

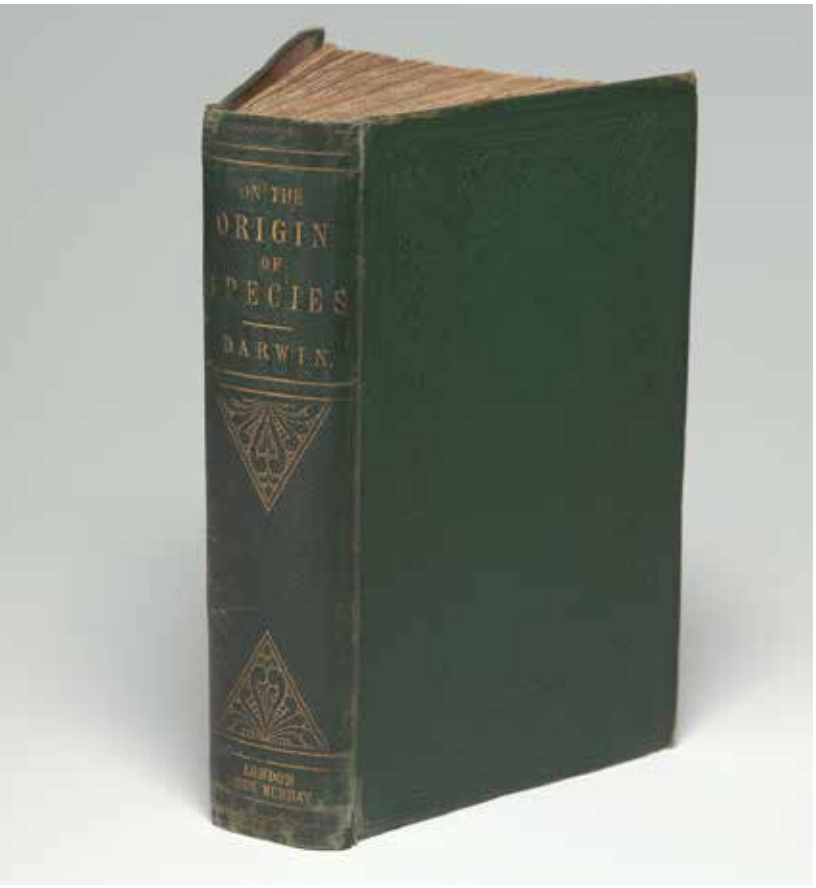
Sally Stafford is Education and Outreach Officer for the Darwin Correspondence Project

Key ideas

Help children to grasp aspects of Darwin's personality, how he worked and what his letters can show us:

- Communicate to children that one of the most important British scientists was driven by an endless curiosity to find out about every aspect of the natural world. Encourage them to become observers of their world and to develop enquiring minds.
- After the *Beagle* voyage Darwin worked from home, conducting experiments with everyday things that he had around him. Science does not have to happen in a laboratory.
- Darwin was able to communicate with a huge network of fellow scientists around the world through letters. Discoveries are made through sharing information and communicating with others.
- Letters are an important dimension to historical enquiry. They teach us about the language and vocabulary that was used at the time. They teach us about what life was like for the author of the letter and what they thought about the world around them.

First edition of *On the Origin of Species*



Websites

Multi-disciplinary downloadable resources using Darwin's letters for Key Stages 1-3, by the Darwin Correspondence Project: https://www.darwinproject.ac.uk/

BBC Darwin timeline includes useful short films, articles and podcasts about key events in Darwin's life, mainly for teachers: www.bbc.co.uk/timelines/zq8gcdm

Royal Museums Greenwich, an online account of Darwin's life and the *Beagle* voyage: www.rmg.co.uk/discover/explore/charles-darwin
www.rmg.co.uk/discover/explore/hms-beagle

Wellcome Trust pages link to many other useful sites, including the BBC, Open University and the Natural History Museum: http://www.wellcometreeoflife.org/about-tree-of-life/about-darwin/

Following in Darwin's footsteps: story-book published by Kew Gardens. Download from: www.greatplanthunt.org/teachers

HA resources

An interesting series of podcasts for staff, by the directors of the Darwin Correspondence Project, looking at Darwin's early life, the *Beagle* voyage, On the Origin of Species, human evolution and legacy: www.history.org.uk/historian/categories/564/module/6941/podcast-series-charles-darwin/6947/the-darwin-correspondence-project

Dave Martin explores aspects of Darwin's life through a comparison of statues of him in Cambridge and Shrewsbury: www.history.org.uk/historian/categories/503/resource/8771/out-and-about-charles-darwin-a-voyage-of-discovery

Places to visit

Visit Shrewsbury to see Darwin's birthplace, school and childhood haunts. www.discoverdarwin.co.uk

Down House and garden, Kent. Darwin settled here after marriage, raised his family, conducted his research and wrote his books here. Visits are self-led with multi-media guides and interactive interpretation. www.english-heritage.org.uk/visit/places/home-of-charles-darwin-down-house

Natural History Museum, London, houses an extensive collection of Darwin's specimens and materials. www.nhm.ac.uk/

University Museum of Zoology, Cambridge, houses a number of Darwin's natural history collections including the beetles he collected whilst at Cambridge. www.museum.zoo.cam.ac.uk/
(Note: Museum is closed until early 2017)

Sedgwick Museum of Earth Sciences, Cambridge; exhibition explores Darwin's geological collections and includes the tools he used on the *Beagle* voyage. www.sedgwickmuseum.org/

Co-ordinator notes

Charles Darwin makes a good individual for Key Stage 1 pupils – after all he is a person that even those who have not studied history seriously can often recognise, and he has even appeared on British currency. He is also an individual with a good historical story behind him. The co-ordinator, however, is likely to want more than a good story and will want to address some valid history objectives. Among the teaching and learning, one might consider aspects such as:

1. What did Darwin actually achieve? They could imagine making a film about his importance and they are allowed 5-6 key achievements. Different children's lists could be compared (this helps develop an understanding of cause/effect and significance).

2. Use some evidence such as a photograph of Darwin's study (including today's reconstructed study at Down House) and ask children to make inferences about what Darwin did and how he did it (www.darwinproject.ac.uk/learning/7-11/detecting-darwin) (Activity 1: Who lives here?). This can then be supplemented by some other sources related to Darwin such as photos, letters and drawings for children to piece together what sort of person he was. (www.darwinproject.ac.uk/learning/7-11/detecting-darwin) (Activity 2: Piecing things together) This can help develop an understanding of the understanding how evidence is used and associated problems, producing historical accounts and inferences.

3. Find another person whom children can compare with Darwin. It needs to be someone where meaningful comparisons can be made and questions asked such as 'who achieved more for the world?', 'who had more problems or difficulties?' or "whom do you admire more?' (this can cover objectives related to similarity and difference, cause and effect or significance).

4. There are a number of possible people with interesting stories, many of them related in some way to Darwin's work. Why not the Victorian Mary Anning, the Dorset fossil-hunter? Or someone with an even more interesting story to tell such as George Washington Carver (1864-1943), born into slavery and like Darwin an explorer as well as botanist whose achievements as a practical plant doctor could be said to have led him to the first instant coffee and peanut butter.

5. Create an annotated timeline of both Darwin and whom he is being compared with, showing both the significant dates but also perhaps noting occasions when they might have been uplifted or sad. Ask them to explain these periods and use the timeline to discuss who faced more personal difficulties (this can cover objectives related to similarity and difference, change, motivation, cause and effect).

6. Ask children to investigate Darwin's travels on the *Beagle* – where did he go? What was he likely to have seen? What were these places like? Are these places different today? (an opportunity for some cross-curricular work including geography and science as well as historical reconstruction).