

# Being Darwin the Geologist, a scientific exploration of the Sedgwick Museum of Earth Sciences

## Teachers notes and activities for Key Stage 2



UNIVERSITY OF  
CAMBRIDGE



The Sedgwick Museum  
of Earth Sciences

These resources are designed to enable your pupils to engage with and learn about the scientific process, creative thinking and historical enquiry. This is framed by the experiences and findings of Charles Darwin. This pack contains a series of notes and lesson plans for classroom- and museum-based activities, a range of links and ideas for discussion topics. While the emphasis is on scientific thinking, all of the activities are cross-curricular and some strong links also exist to the KS2 history and geography curricula. Each can be used either as a standalone activity or in combination with others; select the ones most relevant and useful to your class and where they are in the curriculum. The activities were devised by a group of museum and school teachers.

## The Darwin Exhibition

*Darwin the Geologist* is a new exhibition at the Sedgwick Museum of Earth Sciences in Cambridge. It highlights the early years of Charles Darwin when he learnt about geology, travelled on the survey ship HMS *Beagle* and collected rock specimens from all around the world. His discoveries about the formation of these rocks form the beginning of the tale of the collections and their study. The exhibition includes a number of hands-on and visual experiences.





Charles Robert Darwin (1809–1882): watercolour by George Richmond, 1840

## Key Curriculum Areas for these resources

The following identifies some of the possible links to the National Curriculum for Key Stage 2.

### Links to KS2 Science

During key stage 2 pupils learn about a wider range of living things, materials and phenomena. They *begin to make links between ideas and to explain things* using simple models and theories. They *apply their knowledge and understanding of scientific ideas* to familiar phenomena, everyday things and their personal health. They begin to think about the positive and negative effects of scientific and technological developments on the environment and in other contexts. They *carry out more systematic investigations, working on their own and with others*. They *use a range of reference sources* in their work. *They talk about their work and its significance, and communicate ideas using a wide range of scientific language, conventional diagrams, charts and graphs.*

### Key Curriculum Areas

Essential knowledge

- How information and valid evidence underpin ideas and practice in science

Key skills

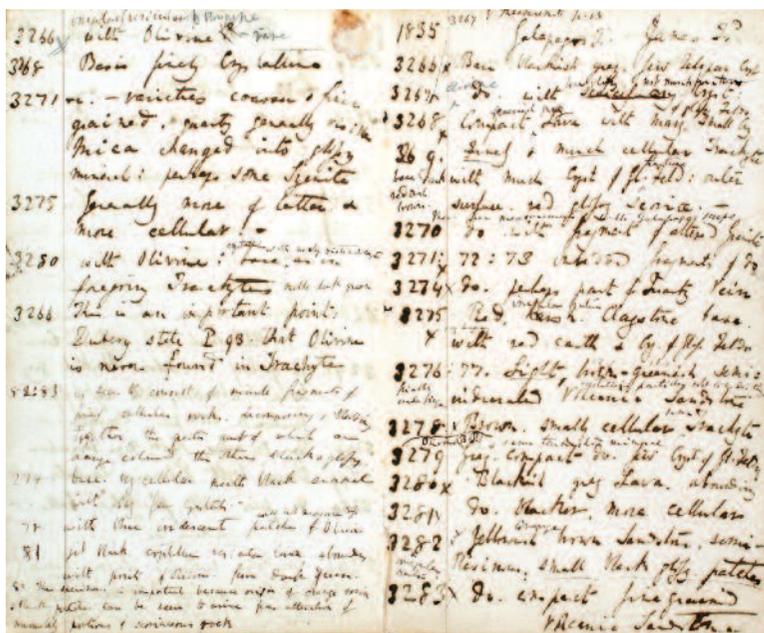
- Gather and record evidence by observation
- Compare, sort, group and identify families, living things and materials, according to observable features (early)
- Capture, record and analyse data using a range of instruments (middle)
- Observe and explore to generate ideas, define problems and pose questions

Breadth of learning

- Apply their knowledge and understanding in real life contexts
- Visiting places to learn about science
- Think creatively and inventively about how things work
- Identify patterns
- Understand how to decide what kind of evidence to collect and what equipment and materials to use



'The Beagle at Mount Sarmiento, Tierra del Fuego' by Conrad Martens (1833)



A page from one of Darwin's dry specimen catalogues which describes rocks he collected on the Galapagos Islands

## Links to KS2 History

During key stage 2 pupils learn about *significant people*, events and places from both recent and more distant past. They learn about change and continuity in their own area, in Britain and in other parts of the world. They *look at history in a variety of ways*, for example from political, economic, technological and *scientific*, social, religious, cultural or aesthetic perspectives. *They use different sources of information* to help them investigate the past both in depth and in overview, using dates and historical vocabulary to describe events *people* and developments. They also learn that the past can be represented and interpreted in different ways.

## Key Curriculum Areas

### Essential knowledge

- Children will learn about characteristic features of the period studied, including the ideas, beliefs, attitudes and experiences of people in the past

### Key skills

- To find out about the events, people and changes studied from an appropriate range of information
- Place events, people and changes into correct periods of time
- To recognise that the past is represented in different ways, and to give reasons for this
- Use dates and historical vocabulary to describe the periods studied

### Breadth of learning

- In their study of British history, pupils should be taught about the history of Britain in its European and wider world context
- As part of a study of Victorian Britain, pupils should learn about the impact of significant individuals on the lives of men, women and children from different sections of society

## Links to KS2 Geography

During key stage 2 pupils investigate a *variety of people, places and environments* at different scales in the United Kingdom and abroad, and start to *make links between different places* in the world. They find out how people affect the environment and how they are effected by it. They *carry out geographical enquiry inside and outside the classroom*. In doing this *they ask geographical questions and use geographical skills and resources* such as maps, atlases, aerial photographs and ITC.

### Key Curriculum Areas

Essential knowledge

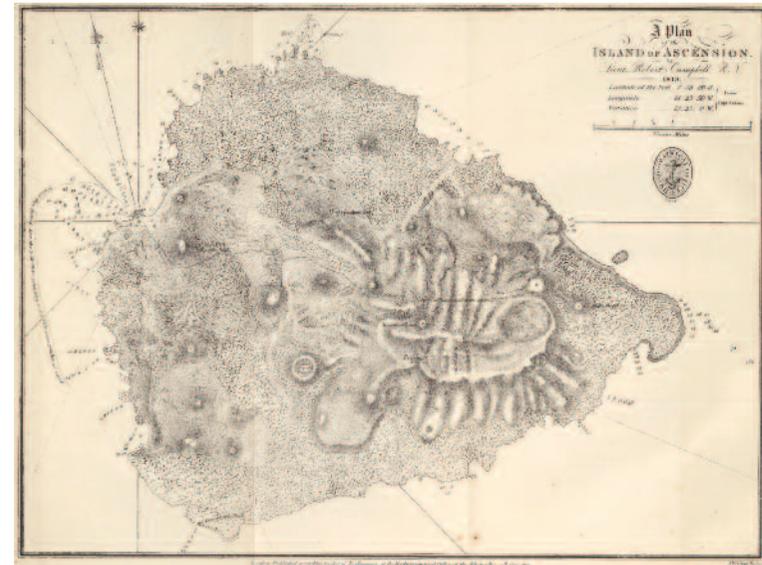
- Pupils will be taught to place Britain within a wider geographical context

Key skills

- To ask geographical questions
- To use atlases and globes, and maps and plans at a range of scales
- To use secondary sources of information (stories, photographs, maps, journals)
- To draw plans and maps
- To describe where places are

Breadth of learning

- Children should be taught about tectonic processes, the nature, causes and effects of earthquakes or volcanic eruptions and human responses, to hazards associated with them
- Children should carry out fieldwork investigations outside the classroom



*Map of Ascension Island taken from from Charles Darwin's 1844 book 'Geological observations on the volcanic islands visited during the voyage of H.M.S. Beagle'*

### Other Links

The activities also link well to cross curricular areas such as applying literacy, numeracy, using specialist vocabulary and meaningful contexts.

### Teacher Continuing Professional Development (CPD)

These activities are designed to be led by teachers bringing their class on a visit to the Sedgwick Museum. The Museum Education Officer offers free one-to-one or small group training sessions to enable this. These sessions include support with planning and logistics, subject knowledge relating to the museum and these activities and advice on using handling objects in the classroom and during the visit. To find out more please contact the Museum Education Officer.

## Activity

### Pre-visit classwork

#### Overview

Firstly to introduce geology, Charles Darwin and scientific investigation and secondly to prepare a notebook/ journal to bring on the visit.

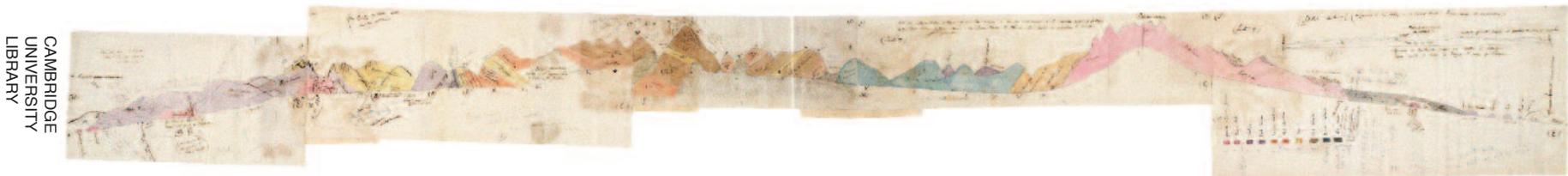
#### 1. Discussion

- What is science?
- Introduce Charles Darwin and how he explored, developing his scientific process. You could tell the story about Darwin using his furniture to learn about rock strata and how to use his compass clinometer and practise geological mapping.
- Talk about what maps are and what they are for, and how not all maps show the same sorts of things. Look at atlases to see what sorts of maps people make. Show them a geological map of UK and ask them to work out what it shows.
- Scientific process – observation, recording etc (*Link this to other investigative work the class may have done*)
- Geology – what is geology? Geo words – what does geo mean? Think about **geography**.
- What use is geology to us today?
- What do you think a rock is? *Rocks make up the earth and are made up of different types of minerals.*
- What is a fossil? *The remains of an animal or plant found in a rock.*

## Resources required

- Information on Charles Darwin  
[www.darwinproject.ac.uk/about-darwin](http://www.darwinproject.ac.uk/about-darwin)
- For a map of Darwin's journey round the world and free Darwin activities from the Association of Science Education  
[www.primaryupd8.org.uk/](http://www.primaryupd8.org.uk/)
- Darwin's exploration of the scientific process  
[www.darwinproject.ac.uk/entry-102](http://www.darwinproject.ac.uk/entry-102)
- Information on Geology and specifically what a rock, fossil and mineral are  
[www.teachers.ash.org.au/jmresources/rocks/links.html#different](http://www.teachers.ash.org.au/jmresources/rocks/links.html#different)
- Link to Geological map of UK  
[www.bgs.ac.uk/education/makeamap/home.html](http://www.bgs.ac.uk/education/makeamap/home.html)
- Information and activities via the Earth Science Teachers Association  
[www.esta-uk.net/resources.html](http://www.esta-uk.net/resources.html)
- Darwin's excited letter about learning to use his new compass clinometer (tool for measuring the angle of inclination of rock strata) and about other geological field trips he hopes to make  
[www.darwinproject.ac.uk/uk/entry-102](http://www.darwinproject.ac.uk/uk/entry-102)

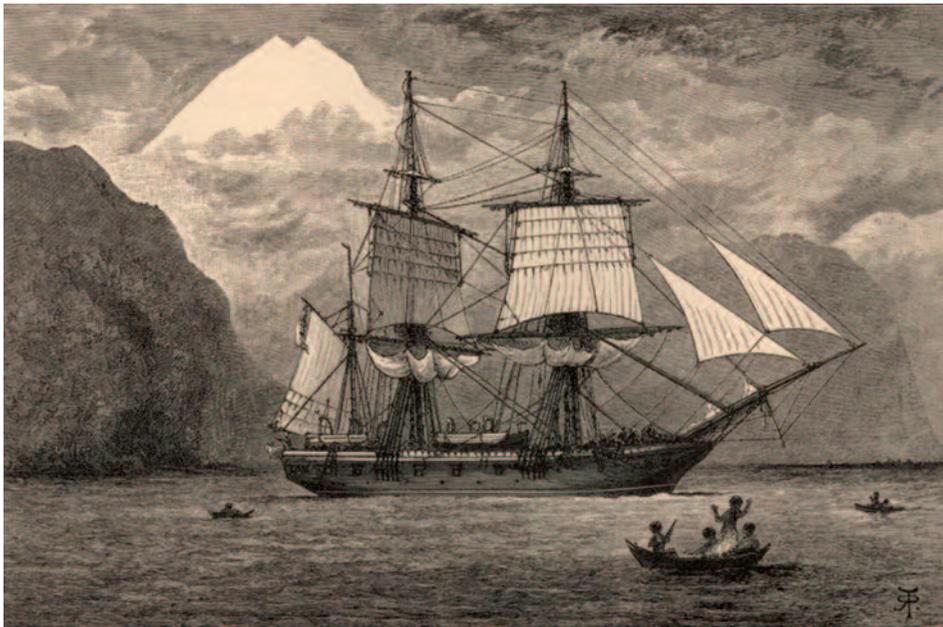
*One of Darwin's early attempts at a geological cross section through the Andes. The different colours represent different rock types*



## Activity

### 2. Introducing the visit

The Sedgwick Geological Society is looking for young scientists with the skills to explore the natural world like Darwin did. Are you good at using your eyes and making discoveries? You will need to map the area and describe a number of important and special specimens including rocks and fossils.



*H.M.S Beagle in the Straits of Magellan" by Conrad Martens (1834)*

## Resources required

- What qualities would you need to travel round the world to collect rocks?
- A letter suggesting that Darwin, then 22-years old, would be just the person to travel around the world on H.M.S. *Beagle*, mentions certain qualities...

“ I have stated that I consider you to be the best qualified person I know of who is likely to undertake such a situation — I state this not on the supposition of yr. being a finished Naturalist, but as amply qualified for collecting, observing, & noting any thing worthy to be noted in Natural History. ”  
Letter from John Stevens Henslow

- ...to which could be added curiosity, attention to detail, an open mind and the ability to put facts together and understand what they all mean: deduction. These are all key skills for a scientist.
- You could hand out the Sedgwick Geological Society Certificate (see Appendix) to the children who have taken part to round off the completion of this activity.



*A drawer of rock specimens collected by Darwin. From the Sedgwick Museum's Beagle collection*

## Activity

### 3. Set the scene for the expedition

- You are geologists, like Charles Darwin was when he was young.
- You are going on an expedition and will be reporting your findings to the Sedgwick Geological Society.
- During your expedition you will collect data about special rocks, fossils and minerals and will use your map to plot your journey. Your journal will be used to record all the relevant information.
- Recording your discoveries in your notebook will help you to remember what you discovered, and report back accurately to the Society afterwards.
- You will need to observe and record the details of the special rocks, fossils and minerals very carefully. Think about... which would be the most important details in the following list to record so that you could identify a type of rock? **Pattern, shape, colour, texture, size, shape, weight?** Which are less useful and why? For rocks, shape and size are most often determined by the collector! These are very useful for fossils though.

*Include a brief discussion about museums and collecting to introduce the destination for the expedition.*

- What is a museum?
- What are the collections for?
- What can we find out from them?
- Does this change the way we see the world in any way?

You could also discuss collecting and use this as a stimulus to create a classroom museum, or the children could talk or write about their own collections and why they collect.

## Resources required

- Notes on what natural history and science museums are for <http://en.wikipedia.org/wiki/Museum>
- Find out about other collections in the Sedgwick Museum [www.sedgwickmuseum.org/exhibits](http://www.sedgwickmuseum.org/exhibits)
- A collectors map (blank base map) of the Sedgwick Museum to include in notebooks can be found in the Appendix section of this pack.

You could borrow a loan box of rocks or fossils from the Sedgwick Museum to practise describing and handling museum objects. Please contact the Museum Education Officer to find out more.



*A Sedgwick Museum rocks loan box*

## Activity

### 4. Make a notebook for the visit

Use 1 or 2 A4 sheets, plus the base map, collecting bag and any other worksheets, images or text that you would like the children to use during your visit.

- **Make this a design project** – to personalise their own notebook covers. The notebooks could be journals for the geologists to document for themselves the whole day of the visit. You could use the “In my Collecting Bag” worksheet as a template for pages to be included in the notebook to encourage the children to think about, draw and write down descriptions and other information. Devise your own version to suit different parts of the curriculum you are covering.
- **Make a list in your notebook of the tools you will need** – look at “Tools of the Trade” on the website to find out about the tools and equipment that geologists use to collect and identify rocks, and how they are used. Darwin’s toolkit included:
  - Acid bottles
  - Notebook
  - Magnifier
  - Hammer
  - Compass clinometer
- Work out the best set of information to record about the rocks, minerals and fossils chosen. This may well include colour, pattern, description using imaginative words, observational drawing and other details. Write in headings, ready to fill in at the museum.

**Optional class activity** Look at some pictures of rocks and how the layers of rock can be folded and even broken. Darwin thought about this and made angles and folds with his furniture when he was young to learn about the processes and also to practice making measurements. Pupils could make similar angles and structures in PE, using mats or working in teams to be layers of rock.

## Resources required

- Use this link for an abundance of maps and illustrations which could be used to embellish notebooks  
[http://darwin-online.org.uk/graphics/Journal\\_Illustrations.html](http://darwin-online.org.uk/graphics/Journal_Illustrations.html)
- For information on tools and the compass clinometer see the Sedgwick Museum website  
[www.sedgwickmuseum.org/darwin/darwin\\_tools.html](http://www.sedgwickmuseum.org/darwin/darwin_tools.html)
- The “In my Collecting Bag” worksheet can be found in the Appendix section of this pack.
- See the Sedgwick Museum website for links to more images.

*Please contact the Museum Education Officer if you would like some ideas of practical experiments and demonstrations to use for this activity, such as making a simple inclinometer to measure the angle of rock strata.*



*Darwin's geological field equipment; collecting bag (left to right) compass clinometer, acid dropper, field notebook, magnifier, geological hammer*

## Visit to the Sedgwick Museum

On arrival at the Sedgwick Museum please follow the instructions provided when you booked your visit. Allow the children a short amount of time to look around before starting them on tasks. For suggestions of child-led activities to help focus and orientate the children ready for their tasks please contact the Museum Education Officer.

### Set the scene

- Show the children the £10 note that is in the exhibition. Why do you think Darwin is on this note? What do the illustrations on the note tell us about him? Do you think that Darwin looked the way he does on the note when he was travelling on the boat shown, the HMS *Beagle*? You could show the children the portrait of a younger Darwin and discuss why the Bank of England might have used his old image on the bank note.
- Get ready to set out on an expedition as Darwin would have done. Before you set off discuss the ways of travelling, use of local resources – paying guides, people to do lifting and carrying, hiring horses etc. Think about how you travelled to the museum today and whether Darwin would have had the same options in the 1830's. How did Darwin travel around the world?
- Remind the children of the expedition purpose and their tasks. You are going on a geology expedition to collect some new rocks, fossils and minerals. Think about... Why do we collect rocks and fossils?
- You will need to carefully observe and record the details in your notebook. Think about the important and less important details to record.

Information about bookings and facilities is included in the booklet "Information for Teachers" which can be downloaded from [www.sedgwickmuseum.org/education](http://www.sedgwickmuseum.org/education)

- Begin by the £10 note in the Darwin Exhibition. Note that space in this part of the Museum is limited so a prop may be required if the group needs to be seated elsewhere. Keep this as open-ended as possible as minds may change by the end of the visit.
- This activity could alternatively be included in your pre-visit work in the classroom if you wanted to put a more historical focus on the activities.
- Re-visiting the question of why we collect rocks and fossils and what the collections are for will help pupils build up their own ideas about why geology matters or how the collection helps us understand our planet.

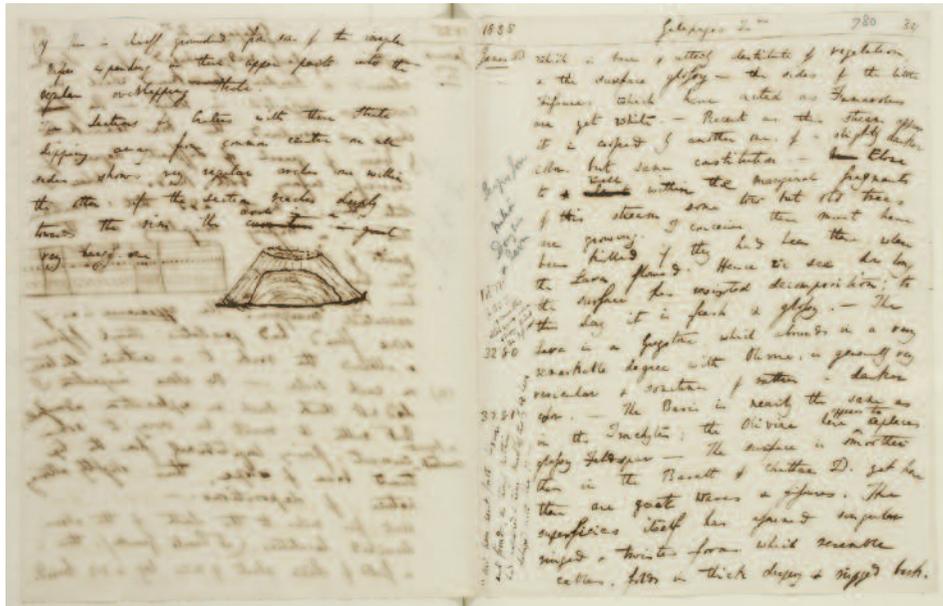


# Visit to the Sedgwick Museum

## A geological collecting expedition

This activity can be done as individuals, in pairs or in small groups. An example “Collecting Bag” worksheet to use with this activity is included in the Appendix, along with a sample base map of the Museum.

- Explore the Museum and look carefully at what you find. Your task is to decide on three really special objects that you think represent the place you are in. This could include one rock, one mineral and one fossil, or something you find really interesting.



A page from Charles Darwin's Geological Diary describing his ideas on how coral reefs and atolls are formed comes from around volcanic islands

- Darwin thought hard about what he was collecting, trying to find representative samples because he had so little space in his collecting bag, his tent or his cabin on the *Beagle*.



Samples of Oolitic Limestone that Darwin collected on the Cape Verde Islands in 1832

- This exercise could incorporate your literacy and/or maths focus at the time of the visit. Adapt the worksheet or give the children a writing frame to suit this. Encourage creative language especially for describing textures; you could provide a list of examples to help them if necessary.



## Visit to the Sedgwick Museum

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### A follow-up expedition

- Bring the class back together to discuss their collecting expeditions. Find out about some of the objects they have collected.
- Often when expeditions discover really remarkable things such as amazing fossils, valuable minerals or unusual rocks, other expeditions want to go back to the same place to see them, or to see if there is more to discover. This needs a really good set of notes and a good map.
- Swap the maps over with other pairs or groups. Ask the children to use the map and descriptions to find the objects the others have collected.
- Come back together afterwards and discuss whether they found the objects. They could work in small groups or as a class to comment on what worked well about the map they followed and what was more difficult to understand.
- The children could then go back and apply what they have learned from reading another map to their own to make it more useful and descriptive.

- A good opportunity for some speaking and listening. You could also find out if there were any challenges to making the map and what strategies they used to overcome this eg – different layers to the displays, lots of similar objects together.

*'Granitic rock with schorl. The crystals take a radiating form this is however a miserable specimen.'*

These were notes written for Darwin's own consumption. How might he have described it for another geologist or in a letter to a friend?



- You could use this image and Darwin's description as a prompt for describing. There is a larger version of this image in the Appendix.

## Visit to the Sedgwick Museum

### Recording your finds – a handling activity with rocks

- Look at the rocks that Darwin collected. They are clearly labelled with one or more numbers. These relate to numbers in Darwin's notebooks or in later catalogues once the rocks came to the Museum. Why do you think that Darwin labelled all of his finds so carefully?
- Imagine that after a day of collecting, Darwin returned to his cabin and found a rock in the bottom of his collecting bag with no label on it. How will he find out where it comes from? You will need to do a bit of detective work. Look for clues in the following activity.
- Using a box of rocks from the Museum's handling collections the children will work in small groups to write descriptions of rock samples on specimen labels. They will then swap the rocks and labels with another group mixing the specimens and labels up and asking the other group to sort them. How easy is it to match the rocks to their descriptions?
- Discuss whether the children have deduced how Darwin would have worked out what his unlabelled specimen was.

### Plenary in the Museum –some suggested endings

- How would you pack your precious specimens to make sure they were safe and didn't get muddled up? What would you put on the labels?
- Can you think of any more reasons now why Darwin's portrait is shown on the £10 note?
- Do you have any more ideas about why there is a museum for collections of rocks, minerals and fossils? What use is it? Who visits it?

### Arrange to borrow a box of rocks to use at school or in the Museum by contacting the Museum Education Officer.

- There are lots of rocks and several examples of Darwin's notebooks on display. Darwin had different sets of notebooks for different purposes, so some include just numbers and basic descriptions while others include more detailed thoughts and ideas.



*Darwin's catalogues of the rocks he collected on the Beagle Voyage. These notebooks contain specimen numbers, detailed rock descriptions and annotations added later*

- Use a mocked- up notebook entry with a photo of the related specimen to show the children an example of Darwin's labels. Photograph of one of Darwin's rocks and the corresponding notebook entry are included in the Appendix. He was clearly not that impressed with this specimen, but he kept it. It was possibly the only example of this mineral that he found or had time to collect at this locality so it represented the place.
- This activity emphasises why it is important for scientists to have a good vocabulary and the ability to describe what they are investigating. It also reflects on how and why museums and libraries organise their collections in the ways they do, using numbers and catalogues.

## In the classroom

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- **Present your findings from your expedition** – verbally or as a display or presentation – to the Sedgwick Geological Society (the rest of the class)
- **Research** other collectors and researchers associated with the Sedgwick Museum. Examples include Lord Tennyson, Mary Anning and Adam Sedgwick.  
Why did or do people collect rocks, minerals and fossils? Some have different reasons for collecting. For example Mary Anning did not collect fossils to learn from them in the same way that her friend Adam Sedgwick did.
- **Write a letter home** from your trip, perhaps from a day when there was a storm at sea while you were trying to sort your specimens, or perhaps from a day on the slopes of a smoking volcano finding interesting specimens.
- Think more about Darwin and his qualities as a person and a scientist.  
What skills did he have and what skills did he need to develop during his travels and later work? Use this as a link to PSHE and to encourage the children to think about what it means to be successful or clever. What skills have they needed to use and develop during this set of activities? How do they compare to Darwin? What are their strengths?

- The children can take photographs or film in the museum if you want them to use ICT skills for this part of the activity.
- Look online for information about these famous geological collectors. Lots of Victorian poets were heavily influenced by geology, which was seen as a “romantic science”. Sedgwick was a close friend of William Wordsworth.

For Mary Anning:

“Stone Girl, Bone Girl” by Laurence Anholt and Sheila Moxley

- Darwin’s letters home to his family and colleagues describe his feelings and thoughts about events he experienced and things he found. You can see examples on [www.darwinproject.ac.uk/about-darwin](http://www.darwinproject.ac.uk/about-darwin)

For example, Darwin wrote a letter on the 4th August in which he thanks a family member for a letter written the previous November. As Darwin was sending this letter ‘*by a foreign ship*’ he thought ‘*it was doubtful whether it will ever arrive.*’



*Children organising a collection of fossils by sorting and classifying them. ‘Sea shore fossils’ is one of several loan boxes available from the Sedgwick Museum*

## Follow up work (*Optional*)

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### What have People Thought About Fossils in the Past?

Use Darwin's excited letter and his experiments with his clinometer as a link to gymnastics in which pupils create and perform fluent sequences on the floor and using apparatus, including variations in level in their sequences. Ask the children to think about the different shapes that rocks can make and how to interpret these through movement and posture. Include some practical maths by measuring the angles they make with their bodies.

### Fossil Fiction

Prior to the scientific approach to fossils which Darwin helped to have widely accepted, many extraordinary tales were told to explain them.

- Children could use the internet or books to investigate the following fossil-related tales and/or write their own:
  - Belemnites as thunderbolts
  - Ammonites as snake stones
  - *Gryphaea* as a Devils' toenails
  - Sea urchins as fairy crowns
- What amazing creatures or stories can they invent from rocks and fossils? Use this for creative writing.

There are amazing stories about common fossils which are rooted in our curiosity about what such stones represent. "Here be dragons" belongs on an explorer's map and characterises the unknown and bizarre. Some people will want to go there to see, others will stay well away. Dragon myths might well be rooted in fact through traders tales from the Silk Route. Parts of China are rich with fossil dinosaurs.

Darwin wrote his excited letter to a friend telling him about learning to use his new compass clinometer (a tool used for measuring the angle of rock strata)

[www.darwinproject.ac.uk/entry-102](http://www.darwinproject.ac.uk/entry-102)

Find out more about geological tools that Darwin used including a compass clinometer

[www.sedgwickmuseum.org/darwin/darwin\\_tools.html](http://www.sedgwickmuseum.org/darwin/darwin_tools.html)

For Fossil folklore see:

- [www.nhm.ac.uk/nature-online/earth/fossils/fossilfolklore/fossil\\_types.htm](http://www.nhm.ac.uk/nature-online/earth/fossils/fossilfolklore/fossil_types.htm)
- For fossils of the sea, see 'Magic Fossils'  
[www.riverocean.org.uk/ocean/exhibition/digibooth/Myths.htm](http://www.riverocean.org.uk/ocean/exhibition/digibooth/Myths.htm)
- For a comprehensive list of fossils and how myths arose around them see 'Fossils: myths, mystery and magic'  
[www.independent.co.uk/news/science/fossils-myths-mystery-and-magic-436005.html](http://www.independent.co.uk/news/science/fossils-myths-mystery-and-magic-436005.html)
- General mythology  
[www.tonmo.com/science/fossils/mythdoc/mythdoc.php](http://www.tonmo.com/science/fossils/mythdoc/mythdoc.php)

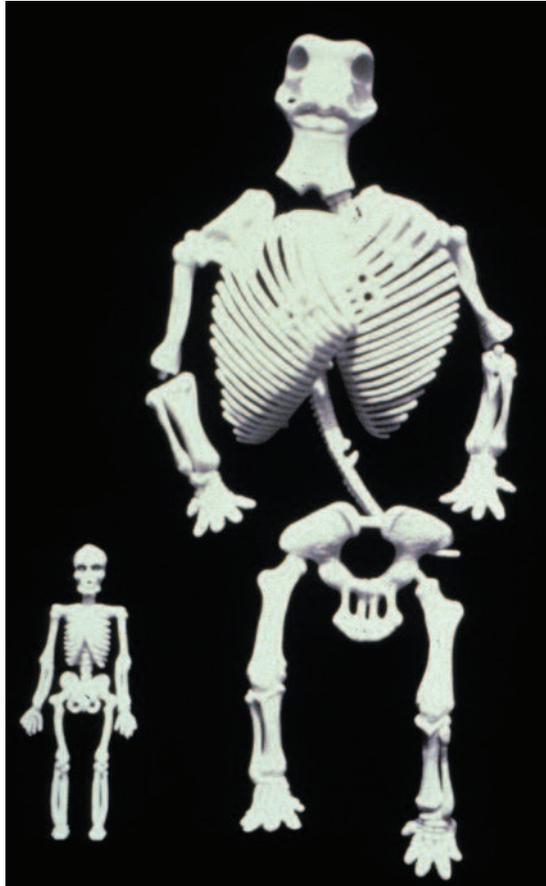
Other sites include:

- [http://news.nationalgeographic.com/news/2003/02/0205\\_030205\\_cyclops.html](http://news.nationalgeographic.com/news/2003/02/0205_030205_cyclops.html)
- <http://press.princeton.edu/titles/6811.html>  
"The First Fossil Hunters" (background reading for teachers and some interesting images) The Museum Education Officer has image permission for some of the illustrations.

## Follow up work (Optional)

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- Mammoths were known as “earth moles” which swam through the soil and only surfaced on death.
- The remains of ancient elephants and other large mammal fossils perhaps were the inspiration for many classical monsters such as the Cyclops. There are examples of all these fossils in the Sedgwick Museum.
- There is a further range of myths and stories around the topic of animals, monsters and humans being turned into stone in many mythologies – such as the Gorgon – which may also have resulted from people in the distant past trying to understand and explain fossil finds.



*Were mythological creatures the results of fossil finds? The bones from a mammoth skeleton could have been put back together to make a monstrous-looking Cyclops. The single eye socket is the large nasal cavity where the animal's trunk was attached. Reproduced from 'The First Fossil Hunters' by Adrienne Mayor, Princeton University Press with kind permission of the author.*

- <https://humanexperience.stanford.edu/feature-dragons>
- [www.whiterosesgarden.com/Grimoire/GRIM\\_fossils/Fossils\\_unicorns-n-dragons.htm](http://www.whiterosesgarden.com/Grimoire/GRIM_fossils/Fossils_unicorns-n-dragons.htm) (Otto von Guericke's “unicorn” made from the bones of a woolly rhinoceros, a mammoth and a narwhal horn.)
- Less directly useful but with interesting bits <http://literatureandscience.research.glam.ac.uk/media/files/documents/2009-09-30/JLS2.1GlendeningPDF.pdf>

# Bibliography

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## Children's Books on Darwin

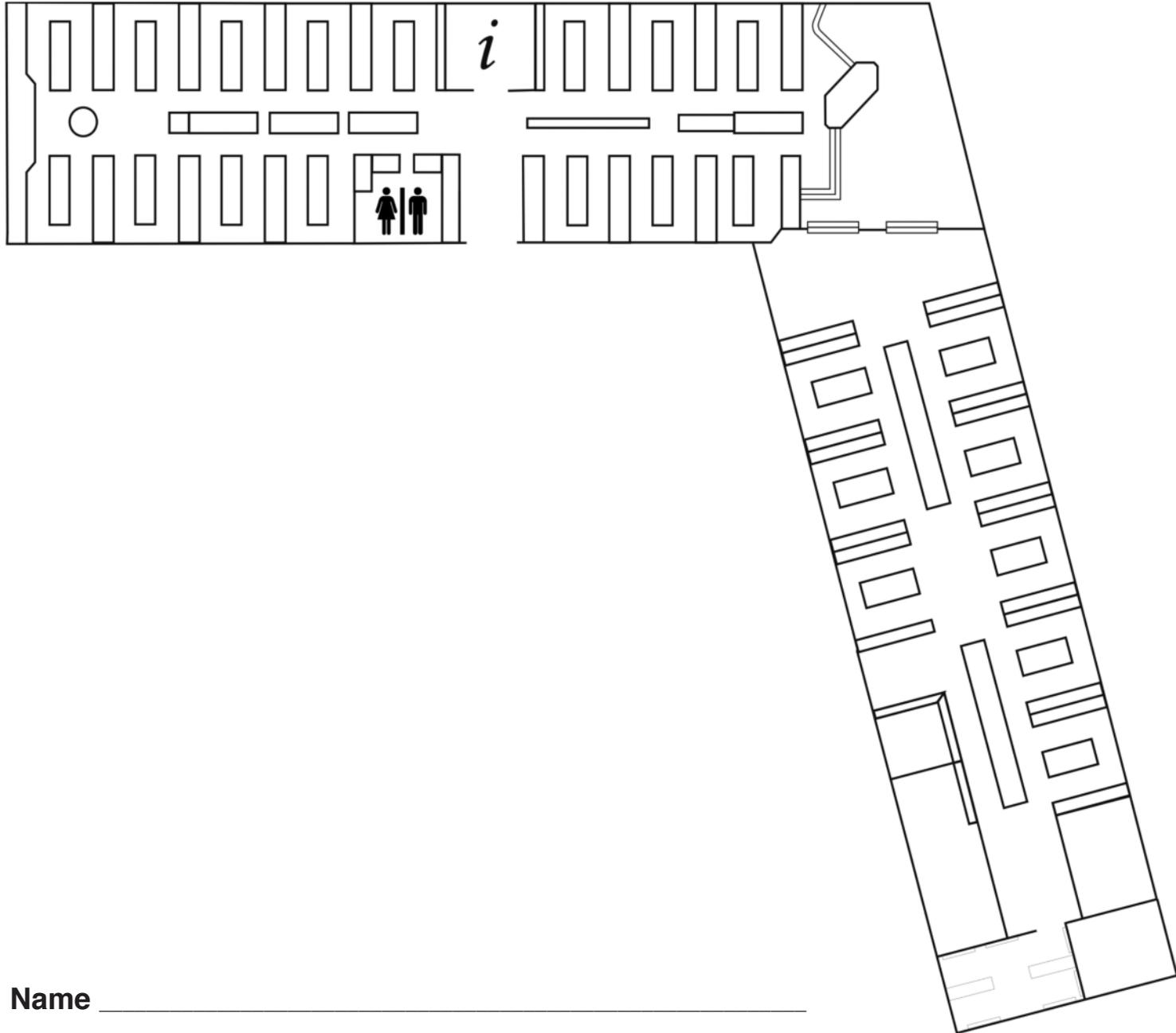
- *Inside the Beagle* (with CD) by Fiona MacDonald and Mark Bergin
- *The Tree of Life: Charles Darwin* (New York Times Best Illustrated Books (Awards)) by Peter Sis (Hardcover – Oct 2003)
- *One Beetle Too Many: The Extraordinary Adventures of Charles Darwin* by Kathy Lasky and Matthew Trueman
- *Charles Darwin: Discover the World of Darwin Through the Diary of a Ship's Boy* by Alan Gibbons and Leo Brown
- *The Voyage of the Beetle: A Journey Around the World with Charles Darwin and the Search for the Solution to the Mystery of Mysteries, as Narrated by Rosie, an Articulate Beetle*. Hardcover (15 Nov 2007) by Anne H. Weaver and George Lawrence
- *What Mr Darwin Saw*. Hardcover (11 Feb 2009) by Mick Manning and Brita Granström
- *Spilling the Beans on Charles Darwin*. Paperback (1 Jul 2000) by Dennis Hamley, Paula Borton, and Mike Mosedale

## Appendix

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This section contains maps, images and worksheets referred to in the pack. Other images used in this pack can be downloaded individually from [www.sedgwickmuseum.org/education](http://www.sedgwickmuseum.org/education)

**Collectors map**



The Sedgwick Museum  
*of Earth Sciences*

**Name** \_\_\_\_\_

## My Collecting Bag

Name \_\_\_\_\_

Rock / Mineral / Fossil Number \_\_\_\_\_



The Sedgwick Museum  
*of Earth Sciences*

Picture

Description

Colour

Pattern

Why I chose this rock / mineral / fossil



*'Granitic rock with schorl. The crystals take a radiating form this is however a miserable specimen.'*

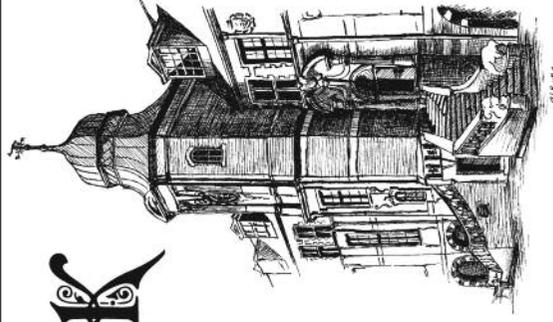
Darwin wrote this note describing the rock pictured on the opposite page for his own consumption. How might he have described it for another geologist or in a letter to a friend?

**Name** \_\_\_\_\_



The Sedgwick Museum  
of Earth Sciences

**THE SEDGWICK  
GEOLOGICAL  
SOCIETY**



**hereby recognises**

---

**as an Explorer, Collector, Cartographer  
and Geologist of distinction.**

**Date** \_\_\_\_\_

**Signed (President)**

---

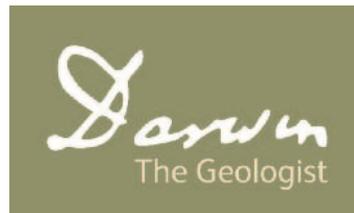


## Contact details

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For more information please go to: [www.sedgwickmuseum.org/education](http://www.sedgwickmuseum.org/education)



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