



ENGLISH HERITAGE

Down House

Home of Charles Darwin

Making a visit

INFORMATION FOR TEACHERS



Down House, Kent.

HISTORICAL BACKGROUND

For forty years between 1842 and 1882 Down House was home to Charles Darwin (1809-1882). Darwin was one of the most well-known and influential scientists of the nineteenth century, and his work on the evolution of species drastically changed our view of the natural world and man's place within it. Following the return from his voyage round the world on the *Beagle*, Darwin settled in London to work on his research. Owing partly to his ill-health, however, he and his wife Emma with the first two of their children moved away from the disease and filth of the city, to the peace of the Kent countryside and the solitude of Down House, in the village of Downe (spelt Down until 1850) near Bromley.

It was at Down House that Charles and Emma brought up their family and spent the rest of their lives; where they were visited by some of

the most eminent scientists of the day and where Darwin thought, wrote and carried out scientific experiments to substantiate his theory of evolution by natural selection. This work resulted in the publication of many books, including, in 1859, his major work, *On the Origin of Species*, bringing Darwin to the forefront of public attention, and shocking Victorian society with a theory that attacked the very foundation of Christian belief – God's creation of man as described in Genesis.

DOWN HOUSE

The property of Down House dates from around 1681 but the main block of the house itself was built in the eighteenth century. It underwent several alterations over the course of the next century before Darwin first saw the house in 1842. Darwin himself then carried out several alterations and additions. Following the

death of Emma Darwin in 1896, the house was used as a girls' school until 1922 after which it was bought by Sir George Buckton Browne who turned the house into a museum to Darwin. Following its purchase by English Heritage in 1996, the house has been completely restored and refurbished. Using evidence such as an inventory of the house made after Darwin's death and various contemporary photographs and descriptions, the ground floor rooms have been restored as far as possible to their appearance in the 1870s, using both

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EDUCATION

Darwin's own furniture and other items from the late Victorian period. These rooms show Darwin as both a scientist and a family man. The first floor rooms contain an exhibition of Darwin's life and work and an interactive room illustrating his theories and ideas.

THE GROUND FLOOR

Entrance Hall

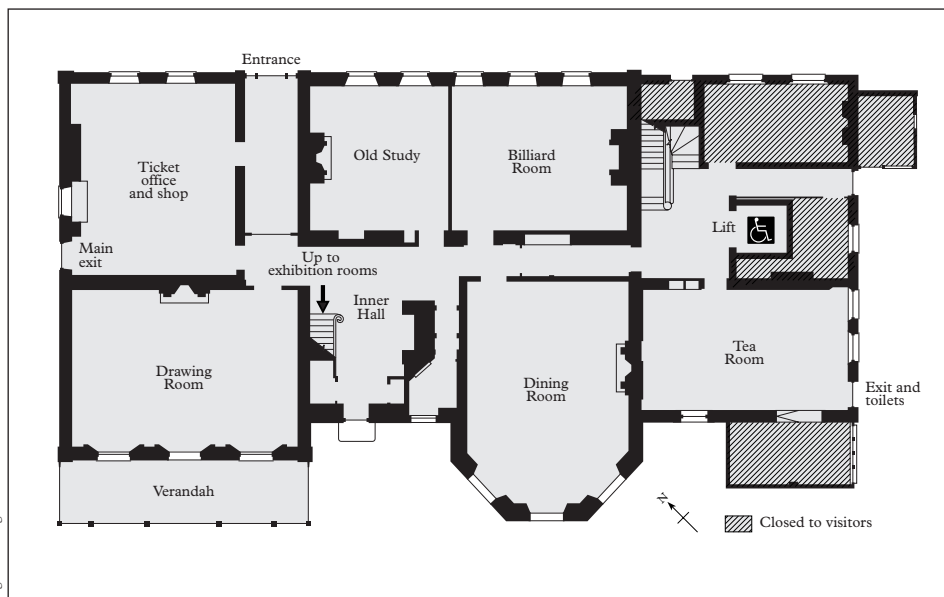
The hall from the front door was built in 1876 when the new study (now used as the ticket point and shop) was added to the house. The inner hall with the staircase served as the original entrance hall prior to this date. Under the eighteenth-century staircase is a cupboard which contained tennis racquets, croquet mallets and parasols. Similar items (not Darwin's own) are still on display. Note the original gong, a common item in Victorian households, and facsimile envelopes addressed to the Darwins.

Drawing Room

Darwin added this room to the house in 1858. It was intended to be a new dining room but was used instead as a comfortable family room where the Darwins would talk, read, play backgammon (Emma and Charles would play every evening) and where Emma, as an accomplished pianist, would play the piano. The room is decorated in period style with some original furniture – the principal item being Emma's piano. The extending arm chair belonged to Darwin's father, Robert Waring Darwin, and the sofa and the three armchairs date from Darwin's period. Portraits and pictures hang on the walls. Above the piano hang portraits of Charles and his young wife, painted in 1840 by George Richmond to celebrate their marriage. The windows open out on to the verandah which was added in 1873.

The Old Study

For Darwin, this was the focal point of the house into which he was able to retreat, away from the activity in the children's rooms and the servants' quarters. This room was restored completely in 1928-9, when Leonard Darwin helped George Buckston Browne arrange



The ground floor is displayed to the public as if they were visitors to the house whilst Darwin lived there.

the room as part of the first Darwin Museum. The decor and arrangement of the room have been preserved from that time. With the exception of the dog basket, the furniture and artefacts are Darwin's own, illustrating his work. The Study has two large shuttered windows which gave ample light for him to write, dissect and use the microscope, and shelves for his books and files. Note the armchair to which Darwin had fitted iron legs and wheels and in which he wrote *On the Origin of Species* on his writing board. The circular table with a revolving top with drawers would have been full of specimens and his scientific library; maps on the wall show atolls (circular coral reefs). The bathroom enclosure is in one corner. The portraits above the mirror are of the geologist Charles Lyell, the botanist Joseph Hooker and his grandfather Josiah Wedgwood. Originally Darwin had installed a mirror outside the window, angled so that he could see who was coming up the drive. In 1876 Darwin moved his study into the room that is now the ticket point & shop (called the New Study) and this room became the smoking room.

Dining Room

This was the original drawing room. It became the dining room after the new drawing room was constructed. The bow window was added in 1843, shortly after the Darwins

moved to Down House; the ornamental cornice and marble fireplace were also added at this time. The room now contains a large dining table, Darwin's own, chairs, a sofa and a sideboard on which are examples of a Wedgwood service, probably commissioned by Darwin's mother (pupils should note the Wedgwood and the Darwin connection). The walls are hung with portraits of (clockwise from the door) portraits of Elizabeth Chandos Pole (second wife of Charles' grandfather Erasmus Darwin), The Rev Thomas Seward, Erasmus Darwin (Charles' grandfather), self portrait of Joseph Wright of Derby, Charles Darwin, Sir Francis Sacheverel Darwin (Charles' uncle), and Erasmus Darwin. The bust of Darwin was presented to the House in 1929, and replaced one which stood here by 1882.

Billiard Room

By the late 1850s billiards had become an important part of Darwin's recreation. This room, used as the dining room until the drawing room was built, became a billiard room in 1858. The room contains a period billiard table (the whereabouts of Darwin's original table is unknown) and scoreboard on the wall. The desk is thought to have belonged to Darwin. On the walls are various pictures of Darwin, and cartoons and



The Old Study before 1878. This room was restored in 1929 when the house was first opened as a museum, using this photograph for information.

caricatures of him and his supporters which appeared following the publication of *Origin* in 1859 and *The Descent of Man* in 1871.

The Kitchen

The kitchen lies beyond the baize green door with its original nailing pattern recreated. This was added in 1846 on the site of the eighteenth century service wing and is now used as the tea room. It is hung with Darwin's own set of pigeon 'portraits', illustrating Darwin's interest in pigeons and selective breeding.

Educational information and approaches

The downstairs rooms of Down House have been restored in mid to late nineteenth-century style, and look similar to how they would have in Darwin's time. With the exception of the ticket point and shop, there are no descriptive panels, as visitors are intended to feel that they are visiting Darwin's home. The rooms are not large, and educational groups should be divided into smaller supervised groups while working downstairs (see *Making a visit*).

Before your visit you should decide what you want your group to focus on. Use the downstairs rooms for detailed observation of the life-style of an eminent Victorian and his family:

- in all the rooms pupils may



The Old Study as it is displayed today.

compare the furnishings and furniture of the mid to late nineteenth century to those of today and to those of their grandparents. How have designs changed over time, and have any designs come back into fashion?

- groups of pupils may be given the task of noting in each room throughout the house one aspect such as the lighting, ornaments, pictures, seating, fireplaces, wallpaper, floor coverings, doors, windows and window furnishings. How do they vary between individual rooms?

- from studies of the Victorians pupils may be able to put Down House in context; what is typical or atypical? How would this house compare to houses of less wealthy families?

- in the drawing room pupils may choose an individual item and describe it in detail, make a sketch, and note its use. For instance, individuals or groups of pupils may look for evidence of various hobbies common in Victorian England.



The drawing room as it is displayed today.

THE FIRST FLOOR

The upstairs rooms of Down House, originally bedrooms, are now used as exhibition rooms for displays on Darwin's life and work. The aim has been to present information about Darwin's background, life and ideas in a lively and understandable way. There is no set route through the rooms, although the plan offers one suggestion. You should decide what is best for your particular group. Perhaps it would be best, for example, to start with Darwin's early life and childhood, or you could divide your class into smaller, supervised, groups each concentrating on one aspect of Darwin's life and in one or two particular rooms.

Genius in the Genes Darwin at Down

These two rooms chart Darwin's family background (including his grandfathers – Erasmus Darwin and Josiah Wedgwood, both leading figures of the Industrial Revolution), his education through school and university, his marriage, ill-health and death. A central exhibition illustrates the experimental work which he carried out at Down House to substantiate his theory of evolution. A final panel examines the lead-up to and reason for his publication of *Origin* in 1859.

There is a lot of biographical detail in these rooms. Younger pupils might be divided into groups of two or three to investigate and make notes on a particular aspect of Darwin's life, for example his school life, or his health or marriage, to

report back to the rest of the class after the visit

The class in groups may look at one aspect of his experimental work, again to report back on what he studied and its significance.

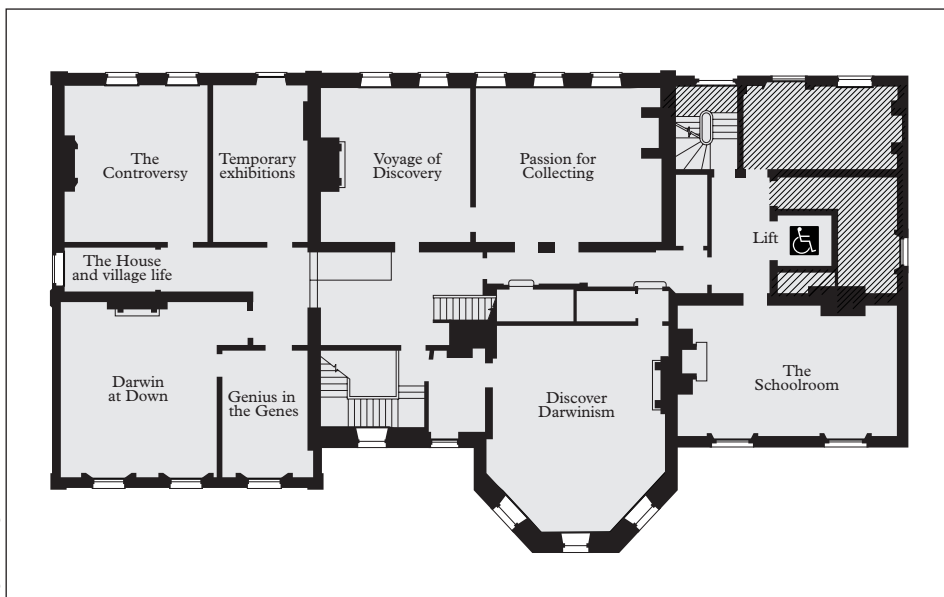
The Voyage of Discovery

The first room concentrates on Darwin's Beagle voyage; his invitation; the ship itself; his route round the world and the equipment he took – scientific instruments, personal effects and items for collecting specimens. Again, there is a great deal of written information, as well as many objects which belonged to Darwin himself. Get your pupils to focus on the objects rather than setting them tasks which involve detailed reading of panels. Three small video screens play a continuous loop of silent footage, lasting just a few minutes, from the BBC production on Darwin, to bring alive the movement of the sailing ship and some of the wonders Darwin saw on his journey. Ask your pupils to watch the clips carefully rather than just glancing at the screen and moving on. You could ask them to see if they can spot any differences between the model of the Beagle and the ship in the video.

Pupils should be familiar with the route of the Beagle, and some of the constraints of the journey before visiting the exhibition. (*Use the Voyage of the Beagle game in Charles Darwin, His life, journeys and discoveries.*) Pupils could make a detailed study of one item of equipment Darwin took on the journey.

The second room illustrates the results of Darwin's Beagle voyage – his collections, his journal and the beginnings of his ideas on evolution and natural selection. The collections include geological specimens, fossils, and living species (some real, some created for the exhibition) and pupils will benefit from spending some time on detailed observation, drawing and description:

- younger pupils might discuss which exhibits are/were real
- pupils could select an individual



The first floor is presented as an exhibition, with the overall theme 'The revolutionary genius'.

specimen and observe it carefully as Darwin would have done when he was on the voyage; they should draw the item and carefully describe it. In the classroom these descriptions could all be assembled and some form of classification system devised

■ pupils should look at Darwin's journal and try to decipher some of the entries (Darwin's writing is very difficult to read); following the visit pupils might read extracts from a published edition of the journal (see *Bibliography*).

The Controversy

The publication of *On the Origin of Species* in 1859 and the controversy surrounding it is the central theme of this room. The room contains a first edition of the publication and the exhibition highlights the meeting at Oxford and the confrontation between Darwin's supporters such as Huxley, and Samuel Wilberforce, Bishop of Oxford, who spoke against the theory of evolution. Much of the display is illustrated with contemporary satirical caricatures in the wake of *Origin* and the Darwin's later publication *The Descent of Man* (1871).

Before visiting this room pupils should be aware of the revolutionary nature of *Origin* and its relation to Victorian thought. Older pupils may make notes about a certain quotation or one of the cartoons to explain to the class following the visit. The controversy continues

today, (see recent newspaper accounts in *Charles Darwin, His life, journeys and discoveries*).

The Schoolroom

Charles and Emma had ten children, seven of whom survived to adulthood. The school room contains information about the children and their health and education with some of their original drawings, books and clothing. Note the small book inscribed by Anne, the eldest daughter who died aged 10. In the cupboard the Darwin children have carved their initials into a shelf. Typical childhood toys and books are arranged in the room. If necessary this room has space for a larger group of pupils to be addressed.

The landing

Pupils should note the pictures and displays here as they go round upstairs; there are photographs and paintings of Down House and Downe village as they were in earlier periods, and of the Darwin children.

Discover Darwinism

In this room visitors are encouraged to explore activities which highlight different aspects of Darwin's theories and their impact on science today. We suggest that you allocate at least 20-30 minutes to this part of your visit for pupils to get the most benefit from the activities. Pupils should work in groups of



Jennie Fordham

The exhibits are presented in a lively and interesting way.

two or three at each activity, perhaps initially concentrating on one in detail to be able to explain back to the rest of the class in follow up work.

Each activity has a set of brief instructions, shown in the bright green circles. Encourage your pupils to read these before attempting the task. Close to each activity is a more detailed background panel which puts the task into context and draws out its importance to science. Depending on the age of your pupils, they should read these panels and try to relate them to what they are doing:

■ uncovering fossils and dating them by relating them to the layers in the earth's crust illustrates Darwin's work on the age of the earth

■ continental drift – Darwin noticed similarities between the fossils and geology of different continents

■ Darwin's ideas on natural selection and survival of the fittest are illustrated by an activity showing camouflage

■ the variety within individual species is illustrated by a selection of butterfly and other specimens. Children should look closely at these to identify the differences

■ bone structure similarity in all mammals illustrates that they all



Mike Corbishley

Putting together bone structures from different mammals in the activity room. The green circle gives instructions and the panel behind explains the scientific principles.



Jennie Fordham

The story of humans in evolution – replica skulls to reassemble.

share a common ancestor – one of Darwin's central theories

■ adaptation to a particular environment is illustrated by magnetic beaks' which will only pick up

one kind of seed. This refers to Darwin's research into the Galapagos finches and their adaptation

■ man's place in evolution is shown by reproductions of hominid skulls

■ inheritance and genes – pupils should be aware of the meaning of recessive and dominant genes before trying this activity (see *Darwin and inheritance* in *Charles Darwin, His life, journeys and discoveries*)

■ the structure of DNA – this activity asks pupils to fit together a representation of a DNA helix. Each piece will only fit with one other piece to complete the helix. Follow up work may link these exercises into Darwin's theories and also contemporary work by Mendel on inheritance and later work on genes and DNA.

THE GARDENS

Whilst living at Down, Darwin spent a great deal of time in the garden, experimenting and thinking. Over the course of forty years he made many changes and additions. Contemporary paintings, photographs and descriptions reveal what the garden was like. The gardens, woods and meadows at Down are being restored. Educational groups will have the chance to experience the atmosphere that Darwin and his family enjoyed, and to observe many of the plants and animals that Darwin observed in the course of his work.

The ornamental garden

On moving to Down, Darwin increased the privacy by lowering the lane which overlooked the house and used the removed earth to make banks and mounds around the



The wormstone set into the lawn at Down.

garden. This part of the rear garden was for the most part typically Victorian with mixed borders, rose gardens and flower beds. In Darwin's time there were six rectangular beds behind the house, planted with, amongst other things, phlox, lilies, larkspurs and verbenas.

The Darwins set a millstone onto his lawn, with a special instrument to measure how far the stone sank each year, owing to the action of earthworms in the soil. A 'wormstone' can still be seen.

Today the lawn is mown regularly, and is an example of acid to neutral grassland that has not been improved' with chemical fertilisers and herbicides. The lawn contains a lot of moss and common grasses. There are various wild flowers at certain times of the year, including bird's foot trefoil, yarrow, common daisy and bulbous buttercup. There are also many kinds of grassland fungi found in the lawn, including wax caps, earth tongues and fairy clubs. Unimproved grassland such as this is today quite rare, and English Heritage is taking care, in conjunction with The Kent Wildlife Trust, to ensure the survival of the rare species of fungi. By the 1870s the Darwin children were playing tennis on the lawn. In 1881, the year before his death, Darwin purchased a plot of land beyond the orchard and laid out a hard tennis court.

Close to the house your pupils can see the ancient mulberry tree which Darwin noted when he bought the house in 1842.

The Kitchen Garden

Darwin created a new kitchen-garden on a strip of land taken from the Home Meadow. Here he planted his experimental beds to demonstrate variability and fertilisation techniques. The brick and flint walls

are from Darwin's time, and were built using local materials. Today these walls support over sixty-five species of lichen, some growing on the lime mortar and others growing on the bricks themselves. Wall ferns also grow in the lime mortar, including maidenhair spleenwort and black spleenwort.



The Sand-walk.

The Sand-walk

The Sand-walk, or 'thinking path', was created in 1846. An acre and a half (0.6 hectares) of land was fenced and planted out with native trees and bushes – hazel, alder, lime, hornbeam, birch, privet and dogwood and a circular path dressed with sandy gravel was laid out. A line of hollies ran down the exposed side. Emma Darwin encouraged wild flowers within the woodland – bluebells, anemones, cowslips, primroses and wild ivy. A wooden summer house was built at the bottom end. It was strolling round this path that Darwin did much of his thinking. Whenever he was at Down he would take his daily constitutional and walk a number of times, depending on the weather and his mood, around the Sand-walk between midday and one o'clock, counting the laps with flints piled at the beginning of the circuit.

Still visible is part of the dead beech that is the remnant of the Darwin children's 'elephant tree', which got its name from a growth on the trunk where a branch had

once been cut off.

Several climbing plants can be seen along the walk, including ivy, wild rose, black and white bryony, and clematis. Darwin was particularly interested in the white bryony, especially the way the tendrils spiralled, then straightened, then spiralled in the opposite direction. This gave the plant elasticity, which prevented it being loosened from its support, and was an example to Darwin of plant modification in order to survive.

The Glasshouses

As he became engrossed in the study of plants, in particular orchids and carnivorous plants, Darwin built a small hot-house which was completed in early 1863. This was heated by a boiler and hot water pipes.

Laboratory

In 1881 Darwin purchased the land immediately north of the kitchen garden. A brick laboratory was constructed on the north side of the garden wall, though it appears that Darwin could not have had much use of it before his death in 1882.

Educational approaches

Allow sufficient time during your visit to explore the gardens as well as the house. Remember that other visitors will be enjoying the gardens and remind your pupils to keep to the paths

Your pupils should experience walking round the Sand-walk as Darwin did every day. Use the walk as an opportunity for pupils to collect words for creative writing. Ask them to stop and stand quietly at two or three stages of their circuit of the Sand-walk, and to consider what they see, hear and feel. Ask them to jot down some words, which can be discussed later at school and used as a basis for their writing.

Pupils could also be asked to carry out a survey of some of the plant and animal life they observe in the grounds. For example, a lichen survey could be particularly interesting. Lichens are particularly sensitive to sulphur dioxide pollution. Shrubby, or fruticose lichens

(eg *Usnea*, *Ramalina*) are most affected by pollution, leafy or foliose ones (eg *Parmelia* and *Cobaria*) less so, and powdery or crustose ones (eg *Zanthoria* and *Lecanora*) least of all. In a polluted area there will be few, if any, shrubby lichens. However, at Down your pupils should be able to observe a good variety. Remember to take some magnifying glasses with you, and remind your groups that plants should not be disturbed.

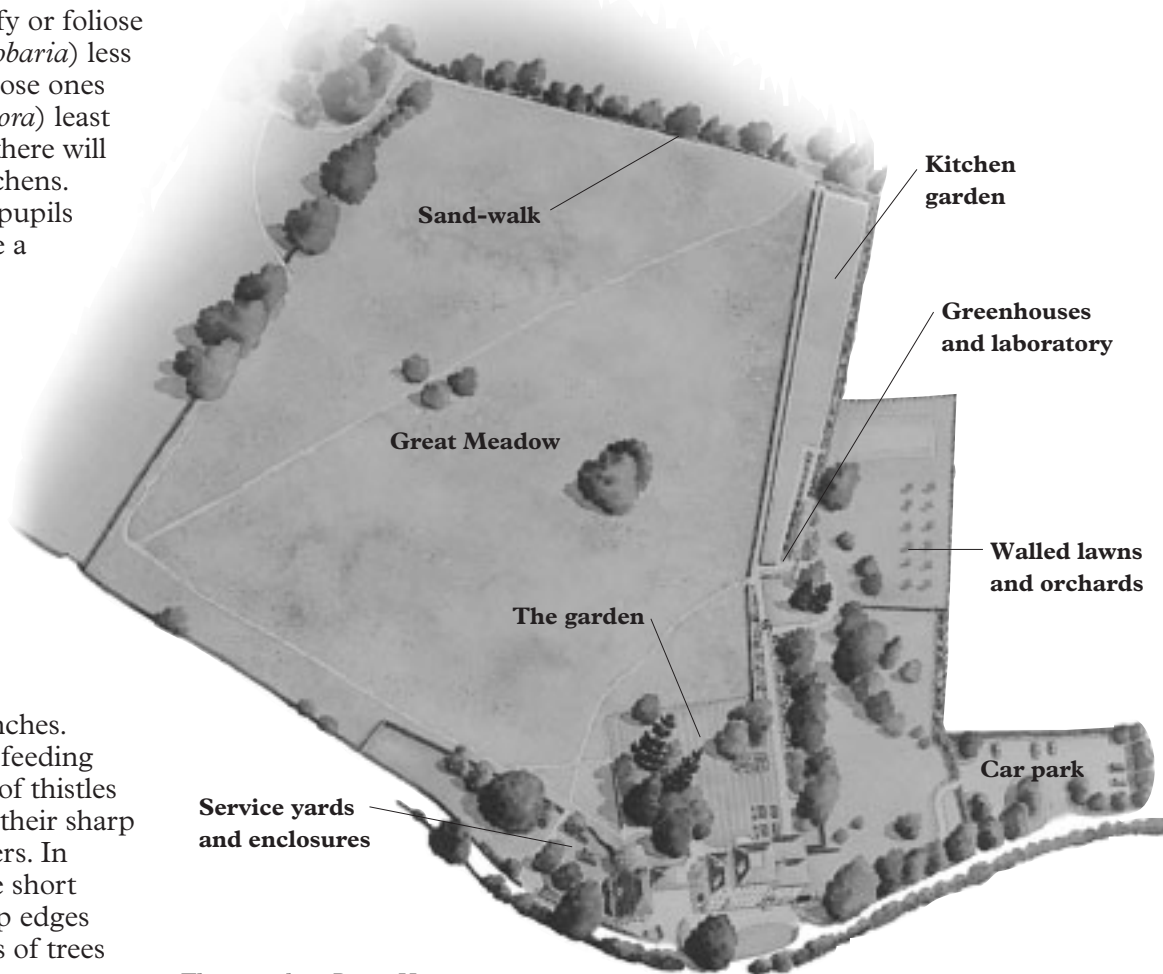
Sitting quietly in the grounds, if possible away from other people, pupils should also be able to observe some of the animal life of the area. Particularly interesting in relation to Darwin's work are the finches. Goldfinches can be seen feeding on the tough seed heads of thistles and similar plants, using their sharp pointed beaks like tweezers. In contrast, bullfinches have short rounded beaks with sharp edges to help them eat the buds of trees and shrubs.

DOWNE VILLAGE

If you have time, you could explore the village of Downe. Although the church is usually locked, the exterior of the church and churchyard are interesting. Pupils should note the sundial on the wall (can they tell the time from it?) and should look for the graves mentioned above.

If there is enough time, a study of the gravestones in the churchyard can make an interesting local history project. In pairs pupils should systematically study the grave stones noting their style and the inscription. Devise a grave recording sheet for your pupils asking them to note:

- inscription
- any decoration
- shape of memorial
- condition of memorial
- materials used.



*The grounds at Down House
(English Heritage).*

For further ideas on making a study of a graveyard, see *A Teacher's Guide to Using Memorials*, listed in the bibliography.

MAKING A VISIT

How to book

Down House is open all year round, except 24-26 December and 1-28 February. All visitors must book at least one day in advance. Specific times are available for educational groups – please telephone 0171 973 3485 for details and to make a booking. Please note that owing to extremely high demand, and the limited capacity of the house, all educational groups must book well in advance and arrive at the time specified on the permit. There is a teacher pupil ratio of 1:15, and all groups must be divided into small supervised groups while working in the house. A preliminary visit to plan your pupils' work is essential. The audio tours are for adult use, and have not been designed with the

needs of educational groups in mind. We recommend that you use these only for your own information during your preliminary visit.

How to get there

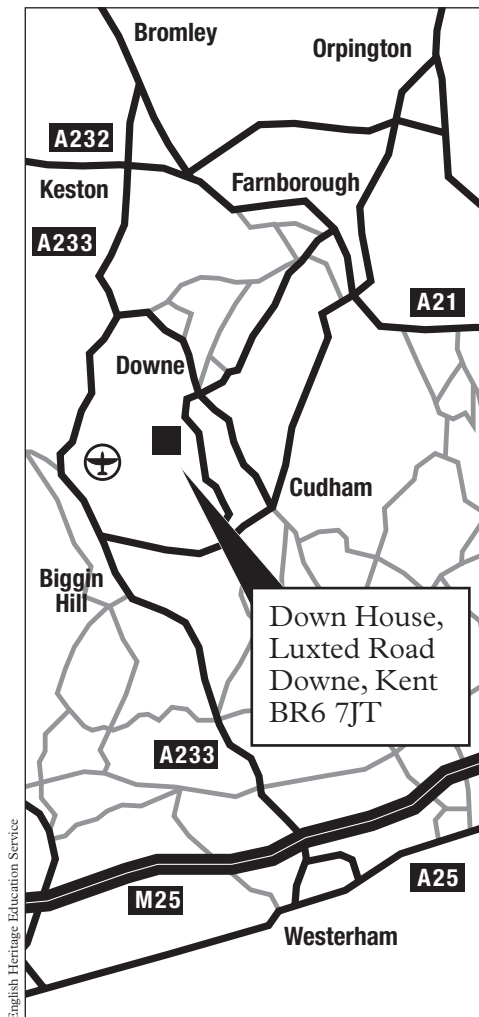
In Luxted Road, Downe, Kent off A21 near Biggin Hill, (OS grid reference 432628). The house is well signposted from major roads.

Rail service from London Victoria to Bromley South or from Charing Cross and Waterloo East to Orpington. A bus service runs to the village, telephone 0171 222 1234 for details.

Facilities

There are toilets on site, including facilities for disabled visitors. Access to the first floor is by lift for disabled visitors.

There is a shop selling a range of Darwin related books and souvenirs. Pupils are welcome to visit the shop in supervised groups.



Parking is very limited. Coaches are only allowed to drop off pupils, as there is no facility for coach parking on site. Please use minibuses if at all possible, as these will negotiate the country route more easily, and may park in the small car park.

Contacts

Education Officer
23 Savile Row
London
W1S 2ET

BIBLIOGRAPHY AND RESOURCES

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Videos

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English Heritage Education

We aim to help teachers at all levels to use the resource of the historic environment. Each year, we welcome half a million pupils, students and teachers on free educational group visits to over 400 historic sites in our care. We also offer services to help access the National Monuments Record, our public archive. For free copies of our *Free Educational Visits* booklet, our *Resources* catalogue, and *Heritage Learning*, our termly magazine, contact:

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