

## What to see

This trail takes you through some of the areas familiar to Charles Darwin who lived and worked at Down House for 40 years. His careful observations of plants and animals living in the countryside around his home provided him with evidence which supported his theories, much of which is still here for everyone to see. Some of the species he studied are indicated as you follow the trail, others are more difficult to spot and are shown in the pictures opposite. Tick the circles and see how many you can find. ☑

## Places you'll pass

Much of the trail is along the Downe Valley, the charm of which, according to Francis Darwin, helped his father to settle here. 'The Big Woods' where Darwin often walked with his sons and was an important area for observations and experiments where, *'Sometimes in order to observe birds or beasts, he would walk very slowly, just quietly putting down his foot and then waiting before the next step- a habit, he said, which he had practised in the tropical forests of Brazil.'* Another of Darwin's favourite places you'll see was called by his family, 'The Terrace' (see map). It was described by his daughter, Henrietta, as a bank bright *'with flowers that love a chalk soil.... sheltered by a rough shaw of beeches and an undergrowth of sloes, traveller's joy, service trees and hawthorn. My father would pace.. and my mother would sometimes sit on the dry chalky bank waiting for him, and be pulled by him up the steep little pitch on the way home.'* Great House and Great Pucklands Meadows were important for observations and experiments and in 1856, Cudham School Pond was the site of the first of a series of experiments about seed viability in pond mud.

## How to get around

The complete trail (shown on the map inside in black) is 5 miles (8km) long, but the walk can be shortened to a route 3¼ miles (5.5kms) long or 1¾ miles (2.5kms) long. There is a pub in Jail Lane near the end of the trail and 2 pubs and a café in Downe where you can get refreshments. The paths may be muddy and slippery at times with some gradients of 25% as you walk into and out of the Downe Valley; stiles and steps as shown on the map. Please follow the Country Code, keep to the footpaths and remove your dog waste.

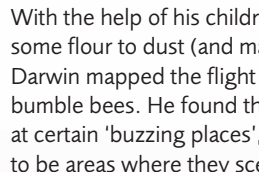
# Look for Species Darwin Saw or Studied

## Spring



### A Lesser Celandine:

Darwin experimented on how light affected growth of leaf stalks and observed how lesser celandine leaf-stalks that break through the ground in spring are arched at first while those which arise near the soil surface are straight.



### B Bumble Bee:

With the help of his children, and some flour to dust (and mark) them, Darwin mapped the flight of male bumble bees. He found they stopped at certain 'buzzing places', since found to be areas where they scent mark to attract queen bees.

### C Rabbits:

In the 1850s Darwin compared local rabbits with other wild and domesticated varieties (see *The Origin of Species*)



## Summer

### D Common Spotted Orchid with Empid Fly:

Helped by his son, George, Darwin studied this orchid and explained how the adaptations of the flowers ensure cross-pollination by these and other flies.



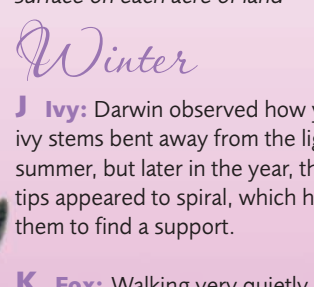
**E Sainfoin:** In 1844, Darwin wrote, *'The sainfoin fields now of the most beautiful pink, and from the number of hive bees frequenting them the humming noise is quite extraordinary.'*



## Winter

**J Ivy:** Darwin observed how young ivy stems bent away from the light in summer, but later in the year, the shoot tips appeared to spiral, which helped them to find a support.

**K Fox:** Walking very quietly Darwin reported several close encounters with foxes, once coming across one asleep in the day.



### F Large Skipper Butterfly

Examined by Darwin and found to be a pollinator of pyramidal orchid.

**G Kidney Vetch,** called 'Ladies Fingers' by Henrietta Darwin still grows in the chalk grassland, supporting the rare small blue butterfly.



## Autumn



**H Spindle:** Darwin found this plant had 3 forms of flowers: H (i) female (small stamens); H (ii), male and hermaphrodite (appear similar but males produce little or no fruit, hermaphrodite produce some fruit with less seeds than the females). In spring look for the different flowers, in autumn for the different amounts of fruit on different bushes H (iii).



**I Black-headed Worm:** locally the most important species for moving soil to the surface. The subject of years of experiment and observation around Downe led Darwin to remark,

*'Worms have played a more important part in the history of the world than most persons would at first suppose.... In many parts of England a weight of more than ten tons (10,516 kilogrammes) of dry earth annually passes through their bodies and is brought to the surface on each acre of land'*