

# ENDLESS FORMS TEACHERS' NOTES - PRIMARY

The Endless Forms exhibition is a treasure trove for primary schools with a wide range of different objects and paintings on display which can be used to teach across the primary curriculum.

The exhibition is arranged in thematic sections. These notes follow the same format. In each section key exhibits have been highlighted which may particularly appeal to children and which link to the primary curriculum, as well as activities which can be used both in the gallery and the classroom. INTO ACTION sheets which can be photocopied and used by pupils in the exhibition are also available.

## DARWIN'S EYE Gallery 14

The exhibits in this part of the exhibition show how the traditions of natural history and illustration that influenced the young Darwin, and also includes objects and paintings related to the voyage of the H.M.S Beagle or owned by Darwin himself.

**Jan Swammerdam (1637-1680)**

**Head of a male bee**

From *The Book of Nature; Or, The History of Insects* (Table xx).

London: C.G. Seyffert, 1758

Engraving, Cambridge University Library

These extraordinary engravings of insects were one of the greatest achievements of early microscopy, and provided Darwin with a model for his own researches. This copy belonged to Darwin himself. Other illustrations created by looking through a microscope are exhibited in this section, including the giant "Head of a Flea" by Lens Aldous.

**CURRICULUM LINKS:**

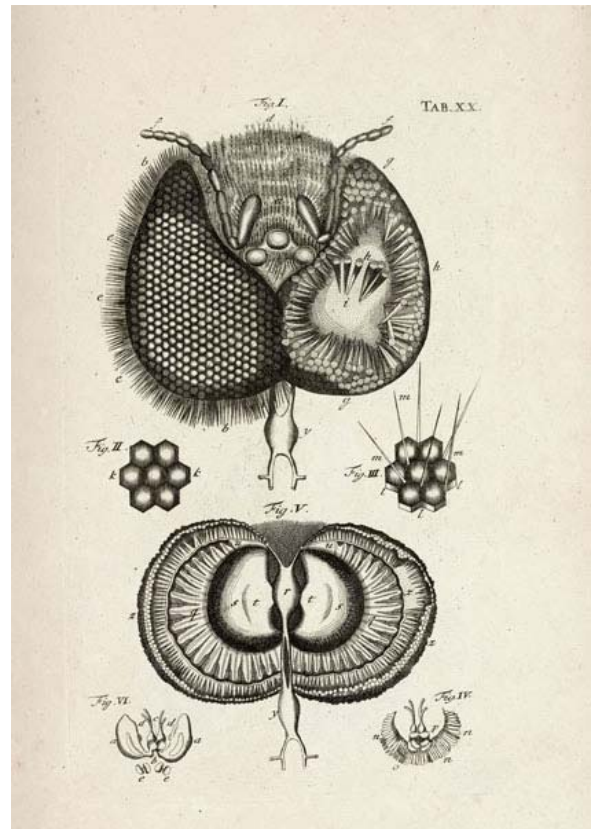
**Maths - ratios and enlargement**

**Science- Scientific enquiry**

**Art - first hand observation and recording**

**ACTIVITY:**

Look at an object through a microscope or magnifying glass and draw it.



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## John Stevens Henslow (1796–1861)

### **Viola Magellanica. Forst. f.**

Southern part of Tierra del Fuego, South America.  
Collected by Charles Darwin, January or February 1833  
Department of Plant Sciences, University of Cambridge

Henslow was Darwin's tutor when he was at Cambridge and the founder of the Cambridge University Botanical Gardens. Darwin said that Henslow "influenced my whole career more than any other". This is one of over 3,000 sheets of dried plant specimens that Henslow compiled. As the inscription records, this particular specimen was sent back by Darwin to Henslow from his travels on the Beagle at the beginning of 1833. Some of Henslow's teaching sheets are also on display in this part of the exhibition, together with two watercolours by Conrad Martens, the artist on the Beagle voyage.

### **CURRICULUM LINKS:**

Science – variety of plants and animals , observation

History – Darwin's life, famous people, Victorians

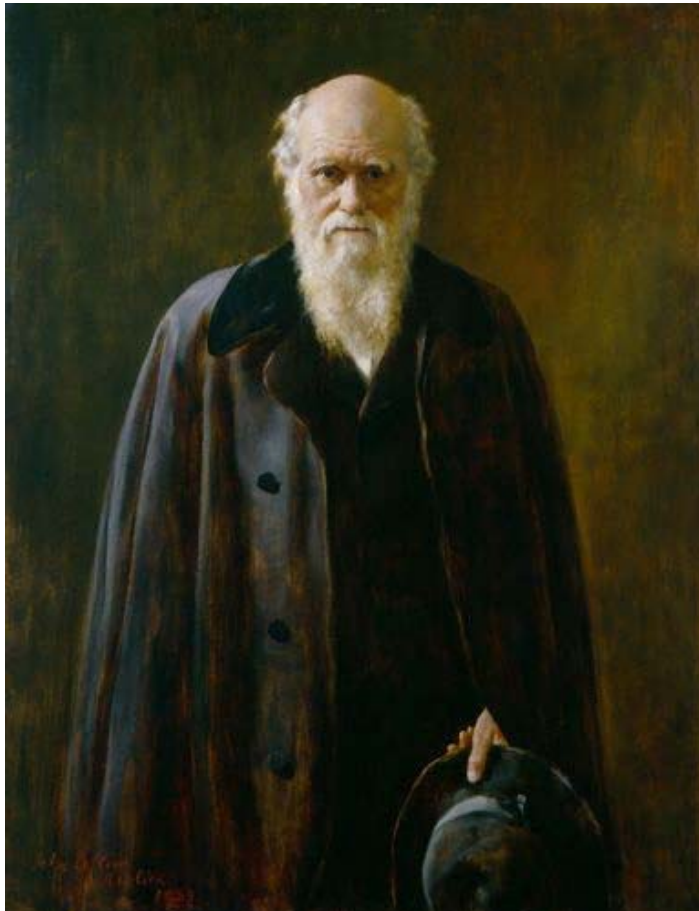
Geography – Voyage of the Beagle, maps

English – non-fiction writing

### **ACTIVITY:**

Collection and display of different types of plants.

Write a diary entry from the Voyage of the Beagle



## John Collier (1850–1934)

### **Portrait of Charles Darwin 1883**

Oil on Canvas  
National Portrait Gallery, London

In 1881 Collier painted Darwin from life in a portrait for the Linnaean Society, widely acclaimed at the time as the best likeness of him. This picture is a second version of the composition, commissioned by Darwin's family after his death. The portrayal combines directness and intimacy with a dignity derived from compositional similarities with Old Masters such as Rembrandt and Titian. Other images of Darwin including photographs and caricatures are on display in Gallery 10.

### **CURRICULUM LINKS:**

History –famous people, Victorians

English – interview a portrait

### **ACTIVITY:**

Look carefully the portrait. What do you think Darwin is thinking?

Compare this portrait to other images of Darwin.

## THE HISTORY OF THE EARTH

### Gallery 12

This section features grand landscapes and scenes of prehistory inspired by new research in geology and paleontology, in which Darwin himself was immersed. As well as paintings showing different views of this new research, this part of the exhibition includes collections of fossils, paintings of geological features like gizers and glaciers and Darwin's own copy of Patrick Syme's "Werner's Nomenclature of Colours" which shows how colours were given names with reference to animals, plants and minerals.

**William Dyce (1806–1864)**  
**Pegwell Bay, Kent—A  
Recollection of October  
5th, 1858, 1858–60**

Oil on canvas  
Tate, London. Purchased 1894

William Dyce's painting is a deeply imaginative response to the new scientific knowledge of the times. His close observation of the striated chalk cliffs reflects contemporary interest in geology. The middle-class family—his own—are admiring the view and collecting shells on the beach. But the picture is a 'recollection', depicting the moment when Donati's comet streaked across the sky in the autumn of 1858, not to appear again for over two thousand years. The combination of this fleeting episode and the fading light with the age-old rocks suggests the brevity of human life and happiness.



#### **CURRICULUM LINKS:**

**History: Victorian Britain**

**English: Creative writing around the idea of time and memory**

**Geography: Knowledge and understanding of places**

**Science: The Earth and beyond**

#### **ACTIVITY:**

**Think about time – days, months, years, millenium. Make a time line.**

# ENDLESS FORMS TEACHERS' NOTES - PRIMARY



**Robert Farren (1832-1910)**

**Duria Antiquior (An Earlier Dorset), c. 1850**

Oil on canvas

Sedgwick Museum of Earth Science, University of Cambridge

This dramatic scene is a copy of a design by Henry de la Beche made by Robert Farren, Professor Adam Sedgwick's assistant at the Museum of Geology in Cambridge. Farren probably made this large painting as a teaching aid. The imaginative reconstruction of the prehistoric earth, with dinosaurs and other ancient creatures, was based on the latest fossil finds—in this case from Lyme Regis in Dorset, on the southern coast of England. A fierce, crocodile-like ichthyosaur grips a plesiosaur with its razor-sharp teeth, while another plesiosaur in turn snatches at a pterodactyl.

## **CURRICULUM LINKS:**

**Science- Scientific enquiry, living things**

**History - Time and chronology**

**English - Creative writing**

**Art - exploring and developing ideas**

## **ACTIVITY:**

**A fossil is a prehistoric print in the rock - make your own prints or rubbings using natural objects.**

## THE STRUGGLE FOR EXISTENCE

### Gallery 12

The next section of the exhibition reflects Darwin's vision of the ruthless conflict among species which led to 'natural selection', or 'the survival of the fittest' and includes wonderful animal paintings as well as John Hancock's dramatic taxidermy "Struggle with the Quarry, 1851" which was exhibited at the Great Exhibition of the same year.

#### Sir Edwin Landseer (1802-1873)

##### Morning c. 1853

Oil on Canvas

Philadelphia Museum of Art, The Henry P. McIlhenny Collection, in Memory of Frances R. McIlhenny,, 1986

Sir Edwin Landseer's epic scenes of combat between stags in the Scottish Highlands were extremely familiar to his contemporaries—they were certainly known to Darwin. The stags in this picture were described in verse as 'mighty heroes of the mountainside.' They symbolised the competitive struggle not only between animals but between humans, and its often tragic outcomes.



#### John Hancock (1808-1890)

##### Struggle with the Quarry, 1851

Taxidermy mount, from a series of three showing the stages of falconry

The Natural History Society of Northumbria, Hancock Museum, Newcastle upon Tyne

John Hancock exhibited his dramatic falconry groups at the Great Exhibition of 1851, which the Darwin family visited. A heron has caught an eel, only to be struck down by an arctic gyrfalcon, itself controlled by the unseen falconer. This energetic hunting image—a counterpart to the celebration of thrusting

capitalism in the 1851 Exhibition—represents nature as a ruthless tussle between species, with man—the most intelligent and powerful species—supreme: a concept which Darwin inherited and refined.

#### CURRICULUM LINKS:

Science- Scientific enquiry, living things in their environment

Art - knowledge and understanding

History - Victorian Britain

#### ACTIVITY:

Explore food chains and make a chart with illustrations.

## ANIMAL KIN Gallery II

Darwin's new ideas about evolution and the descent of man made people look at other species of animals in a new way. In 1872 Darwin published "The Expression of Emotions in Man and Animals" which explored the similarities between species and which was illustrated by artist's drawings and for the first time, photographs. Paintings and objects in this section of the exhibition reflect the way Darwin's belief in the kinship of animals and humans brought him in tune with the animal painters of the Victorian era.

### Sir Edwin Landseer (1802-1873) Alexander and Diogenes, 1848

Oil on canvas, Tate, London.  
Bequeathed by Jacob Bell, 1859

Landseer's dogs act out the ancient story of Alexander's encounter with Diogenes. The Emperor offered to give the philosopher any favour he asked; Diogenes asked merely that Alexander would stand aside and stop blocking the sunlight. This is one of the most anthropomorphic and lighthearted of Landseer's compositions. A photograph of it was found among Darwin's collection of images relating to his *Expression of the Emotions in Man and Animals*, a startling discovery. Other paintings by Landseer in this section of the exhibition also explore the relationships between man and animals including the "The Connoisseurs: Portrait of the artist with two dogs, 1865" which Landseer presented to the Prince of Wales (the future Edward VII), as 'an acknowledgement of the Prince's unvarying kindness' to him over many years.



### CURRICULUM LINKS:

Science - humans and other animals  
English - group discussion, characters, dialogue  
History - Victorian England  
PSHE - differences between people, relationships

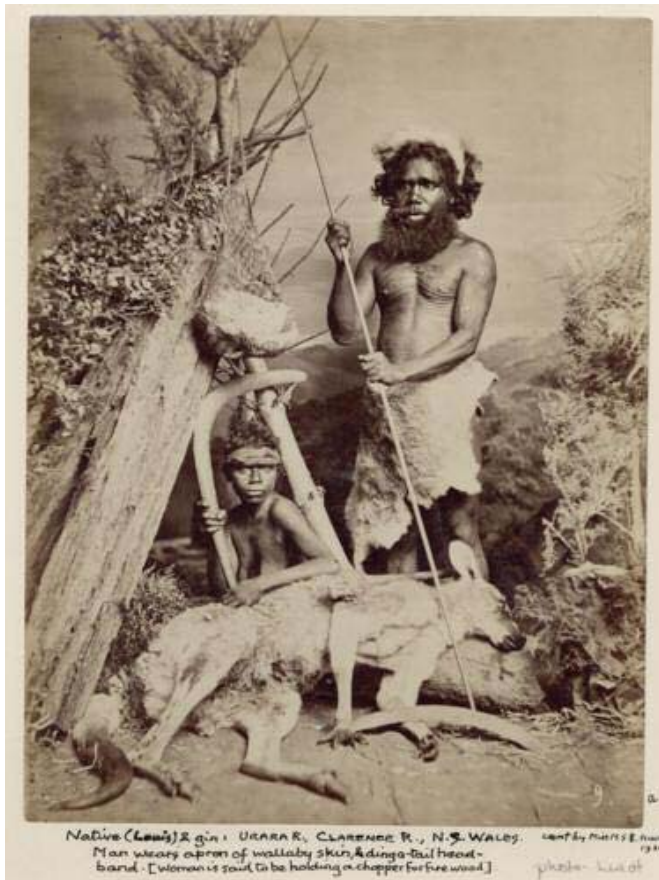
### ACTIVITY:

Look at other expressive faces in this section of the exhibition and then create your own cartoons showing different expressions.

## THE DESCENT OF HUMANKIND Gallery II

Here the exhibition explores artists' responses to the theory of human evolution from an ape-like ancestor, with which Darwin was so closely identified in the public mind. In this part of the exhibition exhibits include 4 skulls - orang-utan, chimpanzee, human and gorilla - which illustrate the similarities which Darwin observed.

In his own time Darwin's ideas about man's descent caused great controversy and unease. Some of the images in this part of the exhibition may provoke similar feelings in us today. Victorian anthropologists and scientists, as well as popular entertainers, all took Darwin's ideas and the images here show the contemporary fascination with different tribal people.



**John William Lindt (1845-1926)**  
**Studio portraits of Urara and Clarence River**  
**aboriginal people c.1872**

Albumen silver prints

Pitt Rivers Museum, University of Oxford

A writer of the time noted that 'these pictures would strike anyone that travelled in the wilds of Australia as most characteristic and truthful . . . the first attempt at representing the native blacks truthfully as well as artistically'. Although the poses of the figures with weapons and a dead kangaroo seem stereotypical, the photographs were based on accurate knowledge and observation.

### **CURRICULUM LINKS:**

**PSHE - differences between people**

**Geography - Global location**

### **ACTIVITY:**

**Group discussion about the differences and similarities between people and how they arise.**

Native (Lands) & Co. URARA R., CLARENCE R., N.S. WALES. Sent by Mr J. E. Lindt 1924  
Man wears apron of wallaby skin, & dingy-tail headdress. [Woman is said to be holding a chopper for fire wood.]  
photo Lindt

## BEAUTY AND SEXUAL SELECTION

### Gallery 13

Darwin's sensitivity to the beauty of the natural world was apparent from his earliest years, and inspired his work as a naturalist. In 1871 he published his views as to why so many beautiful forms existed in nature in his book "The Descent of Man and Beauty in Relation to Sex". He put forward a theory of 'sexual selection', showing how animals had evolved features that made them more attractive to the opposite sex and hence more successful in breeding.

**Martin Johnson Heade (1819-1904)**

**Cattleya Orchid and Three Hummingbirds, 1871**

Oil on panel, National Gallery of Art, Washington, D.C., Gift of the Morris and Gwendolyn Cafritz Foundation

Martin Johnson Heade was a self-confessed 'monomaniac' about hummingbirds and painted these tiny, brilliantly-coloured birds from the 1860s until his death. Generally small in scale and vivid in colour, and with exotic jungle settings, his paintings often include a magnificent orchid in flower, a plant of comparable exoticism to the bird. Orchids were one of the plants that Darwin studied closely as he developed his ideas about beauty.



**'Argus ocellatus'** by J. Smith after Joseph Wolf, from *A Monograph of the Phasianidae, or, Family of the Pheasants* by Daniel Giraud Elliot (1835-1915). New York: D. Elliot, 1872

Hand-coloured lithograph  
Cambridge University Library

This magnificent volume, written by the American naturalist Daniel Giraud Elliot, contains a number of illustrations of the argus pheasant by Joseph Wolf, Darwin's friend and collaborator. Nearby is a video sequence of a male argus pheasant displaying his beautiful markings to the female. The female bird has an 'almost human' appreciation of such 'fine shading and exquisite patterns', and chooses her mate on this basis—an idea that deeply troubled Darwin's contemporaries. In a case nearby are some Argus pheasant feathers which are believed to have belonged to Darwin.

#### CURRICULUM LINKS:

Science - life processes and living things

Art - role of artists, colour, pattern

Maths - shapes

#### ACTIVITY:

Create designs for feathers, using repeating shapes and patterns.

## DARWIN AND THE IMPRESSIONISTS

### Gallery 13

This last section of the exhibition presents a radical interpretation of the impact of Darwin's theories on some of the greatest artists of the 19th century. Darwin's ideas were well known in France and to artists such as Monet, Cezanne and Degas, whose "Little Dancer" is displayed in this part of the exhibition.

**Claude Monet (1840-1926)**  
**Rocks at Port-Coton, The Lion Rock, Belle-Ile, 1886**  
Oil on canvas, Fitzwilliam Museum, Cambridge

Monet first visited the so-called 'wild coast' of Brittany in the autumn of 1886. From the outset, he felt the primeval quality of the landscape, telling a friend that it gave the impression of 'the world's dawn, time abandoned ... the torment of planetary dramas.' The rugged quality of the coast led him to abandon his usual 'soft tender tones' in favour of a darker palette to reflect this formidable natural landscape.



**Edgar Degas (1834-1917)**  
**Little Dancer Aged Fourteen**  
Bronze cast of c. 1922, from an original of c. 1878-81 in wax and mixed media with fabric skirt, Robert and Lisa Sainsbury Collection, Sainsbury Centre for Visual Arts, University of East Anglia

Degas exhibited the original sculpture, of which this is a rare cast, at the sixth Impressionist exhibition in 1881. Made in wax, and dressed in a fabric tutu and hair wig, it had a disturbingly realistic appearance that shocked those who saw it. Many found it ugly and even bestial, with facial features they compared to those of both a monkey and a dog.

#### CURRICULUM LINKS:

Art – knowledge and understanding, evaluating and developing work  
English – speaking and listening, creative writing  
Science – effects of light

#### ACTIVITY:

Look at the way Monet paints light. Create scientific experiments to explore the properties of light.  
Make a model of a person using different materials.