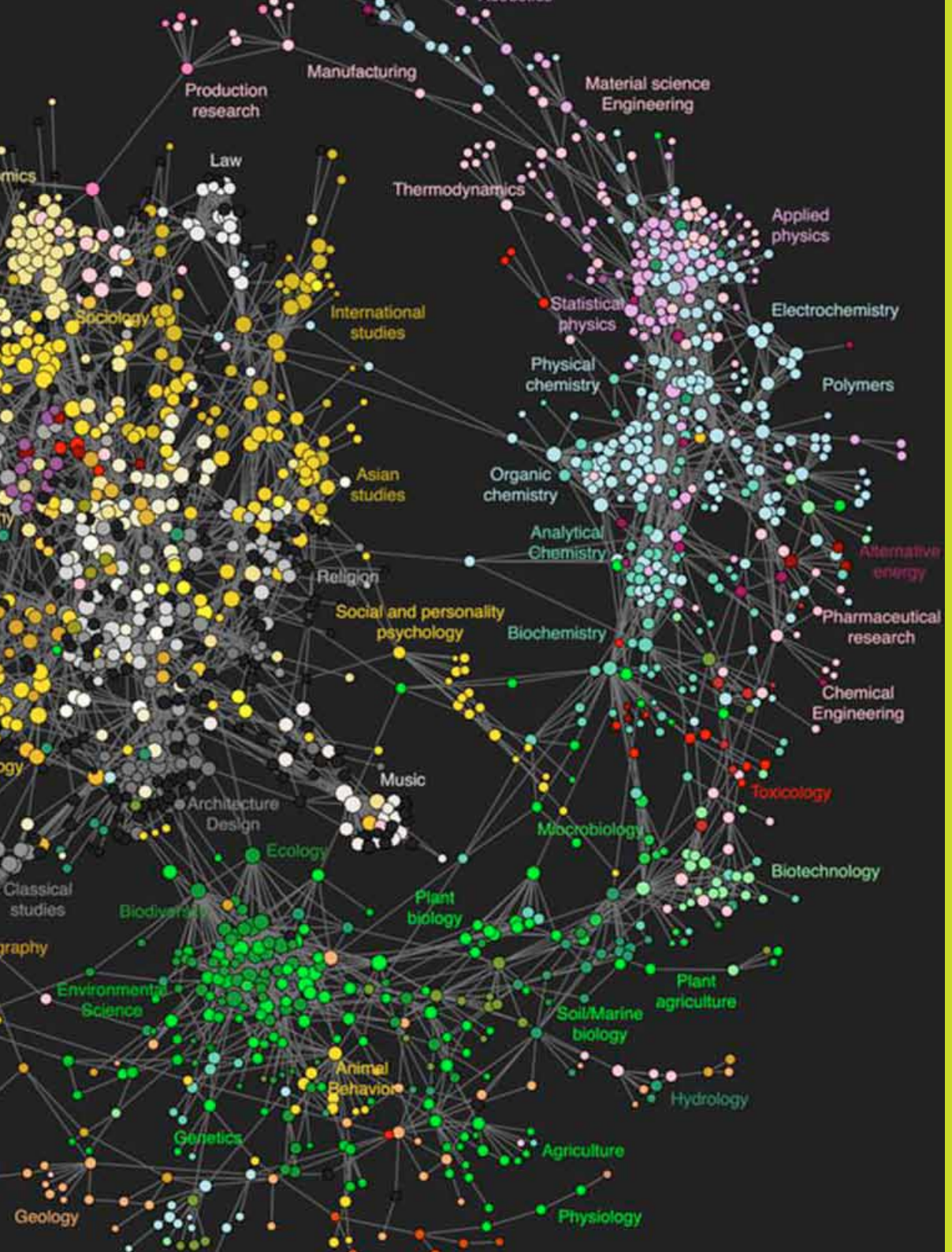
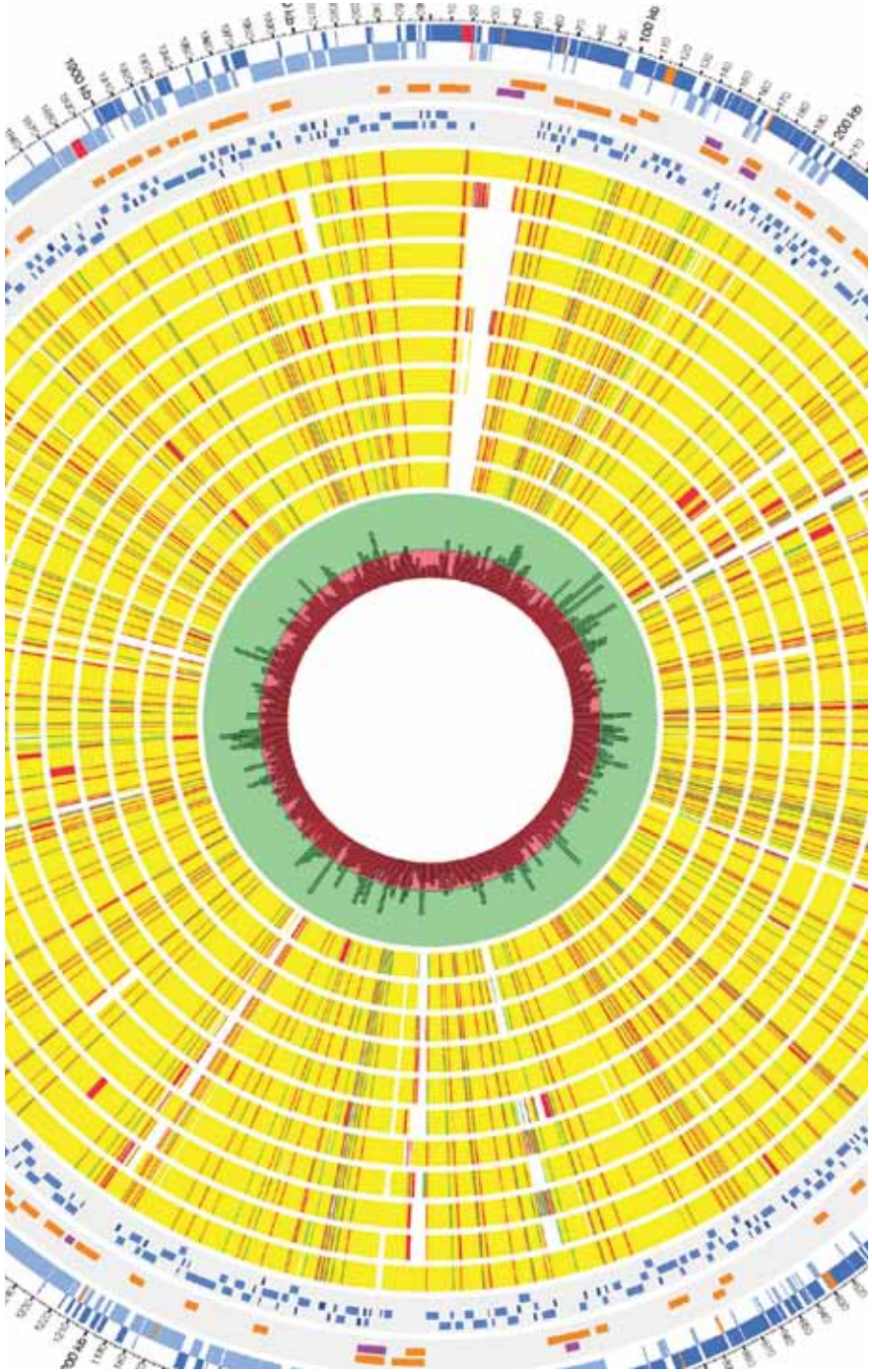


BRITISH LIBRARY

Beautiful Science

An exhibition at the British Library



Introduction

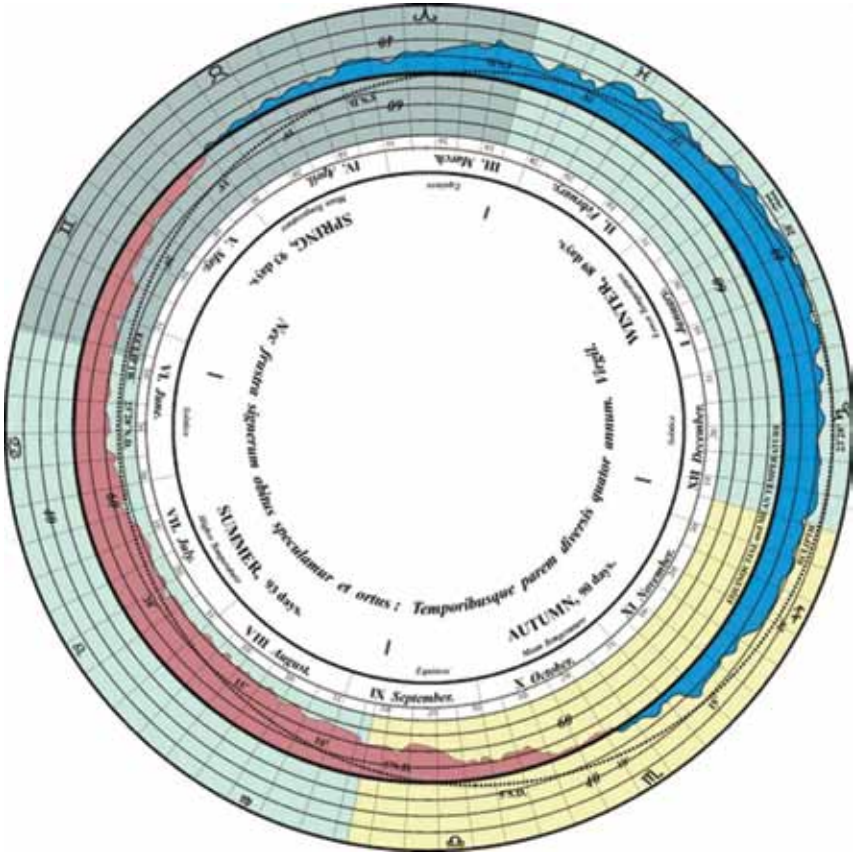
It is often said that a picture is worth a thousand words. Visualising data is fundamental to the ability of scientists to make new discoveries and communicate their findings. Often straddling the interface of science and graphic design, some can be considered works of art in their own right, or a complex concept beautifully encapsulated in a single image.

Data visualisation and information design are transforming how we see the world and providing insight into the latest scientific discoveries. Today's technology enables us to see all kinds of data like human population, music, health, global climate change and even human emotion presented via the visualisation.

The British Library will present an exhibition exploring how scientists past and present have represented information visually. We will link classic examples of interesting and inspiring historical scientific diagrams with cutting-edge graphics by today's scientists.

A visitor to *Beautiful Science* will be taken on a journey of scientific discovery from Darwin, to the latest techniques employed by NASA. They will gain a strong appreciation of science as a visual pursuit and an understanding of the ways that visualisation has enabled improved understanding across a number of fields.

On display you will find classic scientific diagrams from the Library's collections together with visualisations from contemporary researchers and designers. *Beautiful Science* will highlight science as a visual pursuit allowing visitors to discover how the data that underpins scientific discovery can be represented visually to stunning and surprising effect.



The partnership opportunity

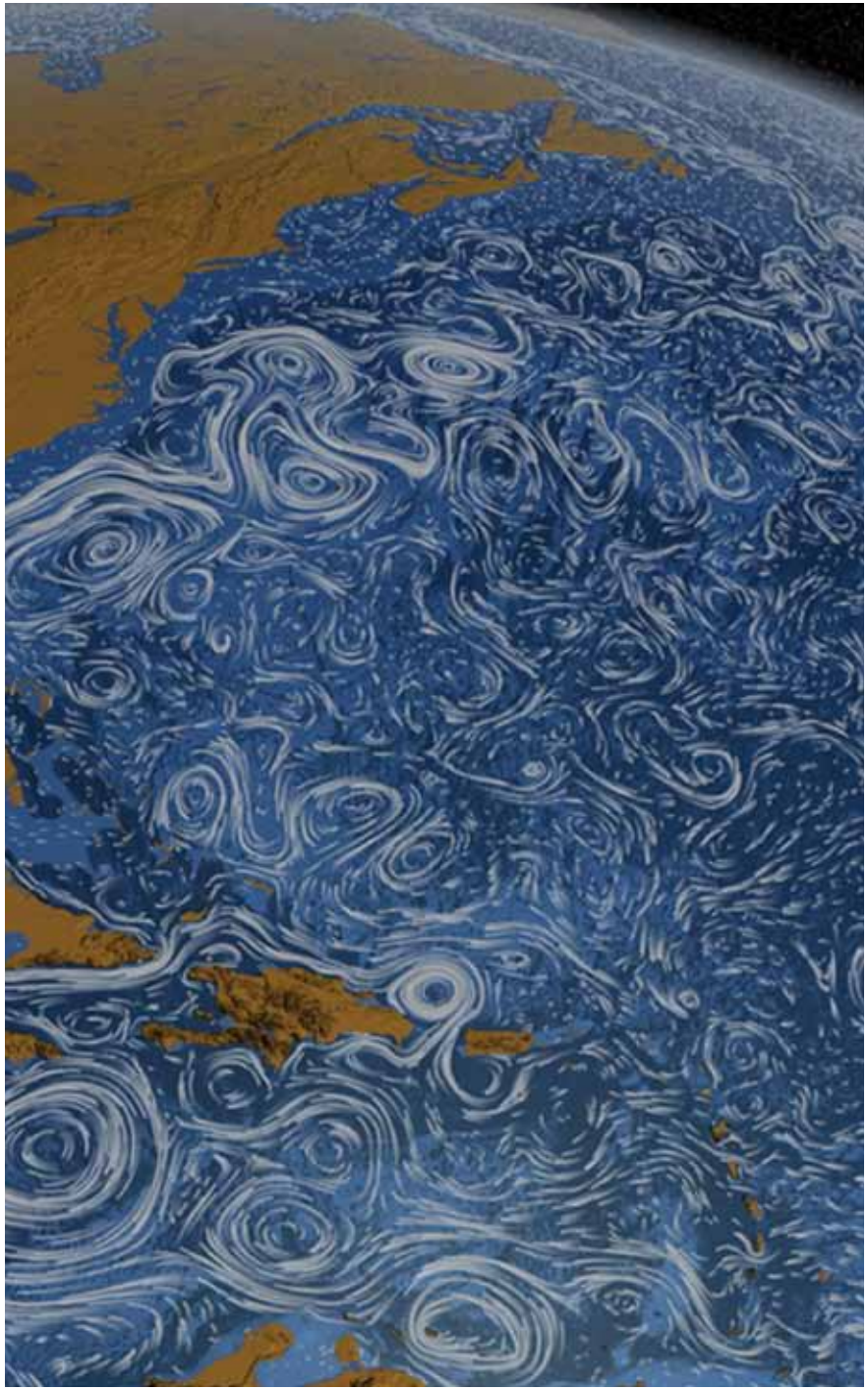
The exhibition will offer the opportunity to see a rich variety of rarely displayed material from the British Library's vast collections, including manuscripts and printed items such as periodicals, newspapers, books and pamphlets.

Support of the *Beautiful Science* learning and communities programme would enable you to raise awareness of your existing CSR programmes and charitable work.

The British Library works with people of all ages and abilities and has worked with a wide range of organisations – from youth clubs and nursing homes to disability groups and many more. The Library's extensive resources, education and outreach programmes would provide development and engagement opportunities for your staff. A number of sponsorship options are available for discussion ranging from sponsorship of the exhibition design and build, to the on-site learning and events programmes.

Examples of benefits, dependent upon level of partnership interest:

- Full naming rights
- Branding on all printed and electronic materials
- Onsite branding at the entrance to the exhibition gallery, on banners visible to Eurostar travellers leaving St Pancras International station, and on banners and posters along Euston Road
- Inclusion in the exhibition pamphlet and its accompanying events programme
- Employee benefits to include staff development workshops related to exhibition themes
- VIP private event for up to 250 guests
- Small bespoke VIP private exhibition tours and curated 'show-and-tells' from the Library's extensive collections
- Inclusion of corporate details and key messages in press release and media activity as part of co-developed PR push at key points during the campaign
- Learning sessions tailored to suit your staff training and development objectives.



The exhibition

Data Visualisation: A Historical Timeline

A timeline when key scientific diagramming techniques came into practice will highlight the historical development of data visualisation. Here we will define our terms and note the variety of techniques available to practitioners, drawing upon themes outlined by Edward Tufte in the information design classic *The Visual Display of Quantitative Information*.

Plotting for a Healthy Society

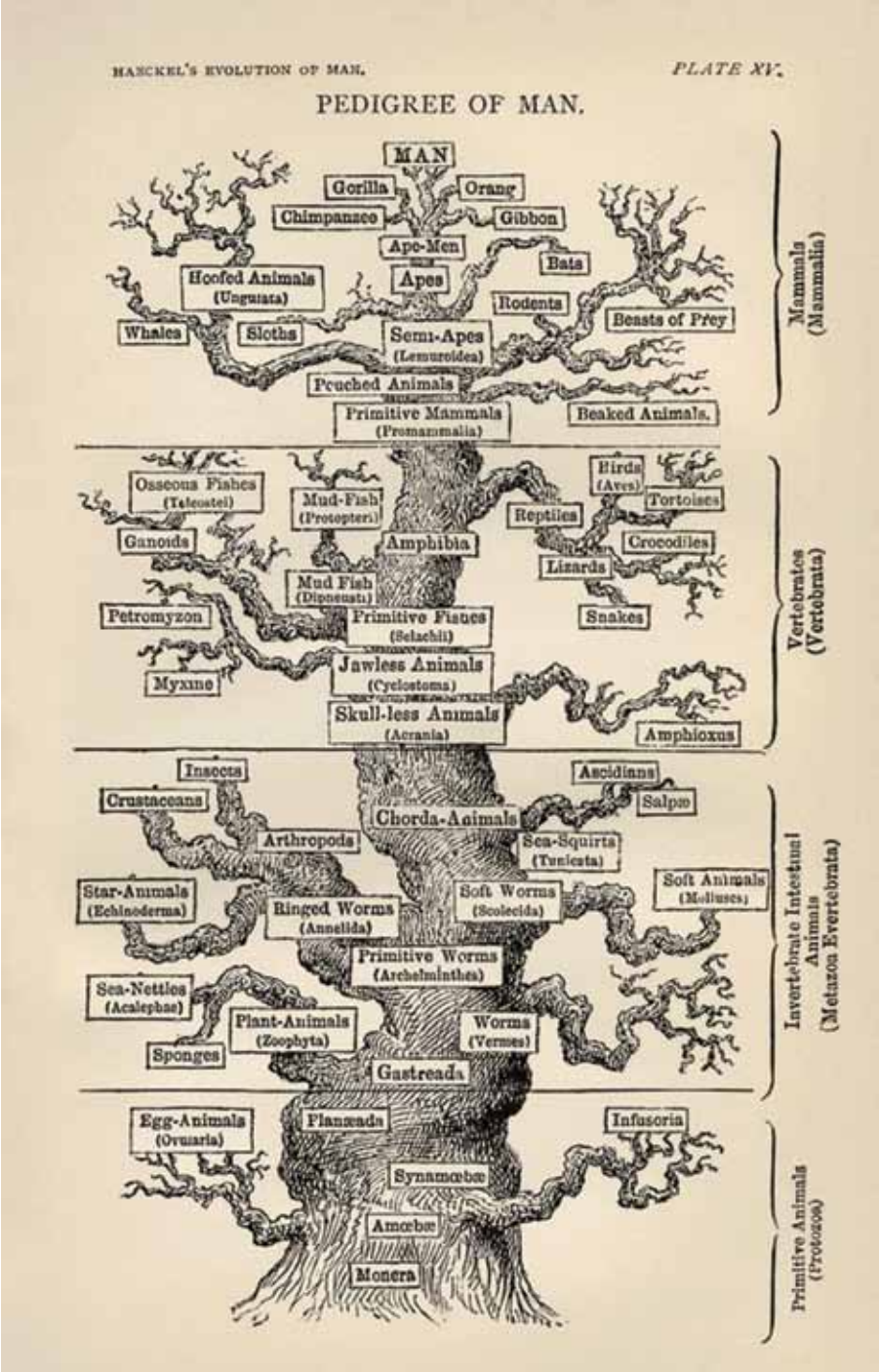
We will explore how data visualisation can help illuminate the health of our communities and the transmission, causes, and cures of disease. Highlighting diagrams that laid the foundations for the development of public health, visitors will learn about the original data that forms the basis for these diagrams, and how the process of visualisation allows researchers to gain new insights.

Visualising Global Ebbs and Flows

We cover weather and climate, allowing the visitor to make the connection between individual weather observations and global climate. We will highlight how historical weather data is being used by modern scientists to inform cutting-edge climate models. Compelling visualisations of ocean currents bearing more resemblance to a swirling Van Gogh painting than to dry scientific data are illuminating how earth scientists can use visualisations to examine the circulation of the Earth's oceans to inform our understanding of the Earth's climate.

Mapping Our Origins

Here, visitors will explore how the Tree of Life has changed from Darwin's first attempt at describing it in *The Origin of Species* to an artistic and elaborate version by Ernst Haeckel, to those that are being developed by today's scientists. We will also explore the way that visual representations of the human genome are allowing researchers to understand the potential for personalised medicine.



A selection of star objects

Collection items for display may include:

Florence Nightingale
Diagram of the Causes of Mortality in the Army in the East (1858)
This diagram, widely thought to be the world's first pie chart, demonstrated conclusively that the real cause of death of soldiers in the Crimean War was poor medical conditions in army hospitals – not their wounds, and led to the founding of the Red Cross.

John Snow
On the Mode of Communication of Cholera (1854)
This map by John Snow is the first time that 'data' was mapped. By mapping incidences of cholera, Dr. John Snow was able to tie the cholera to a contaminated water pump, thereby showing that cholera was transmitted by water, not "bad air" as previously suggested.

Luke Howard
The Climate of London (1847)
Luke Howard, often referred to as the father of meteorology, produced beautiful and meticulous records of the London climate.

India Office Ships Logs paired with ACRE Project Results
Ships Logbooks, housed by the British Library India Office Records, contain beautiful and meticulous records of daily temperature and windspeed kept by the captains. These records are now being used by contemporary scientists to reconstruct past atmospheric conditions, with implications for better understanding the Earth's climate.

Perpetual Ocean
A hypnotic visualisation of ocean surface currents produced by the NASA Goddard Scientific Visualization Studio.

Charles Darwin
On the Origin of Species (1861)
The original tree of life, showing how a variety of species may be descended from a common ancestor.

Ernst Haeckel
The Evolution of Man (1879)
Ernst Haeckel advocated Darwin's theory of evolution and expanded it to include his own views. He used a tree to visualise his idea of the evolution of man. (shown opposite)

The people we reach: Students in formal learning

Recognising that the learners of today are the researchers of tomorrow, the Library's learning programme reaches students in formal learning at all ages and their teachers. Through our regional partners within the public library network we also engage young adults not necessarily in formal education who are seeking to learn in more unstructured ways.

We focus on developing skills for learning, especially those in research, critical thinking, visual, verbal and information literacy and creativity. We also specialise in offering free CPD conferences and events for teachers.

We offer support to key subjects such as English Literature, Literature, History, Art and Design, Citizenship and Religious Education and we are increasing support for Science, Social Science and Business. We promote lifelong learning through an inclusive programme geared towards learners of all ages and abilities.

Onsite

Our onsite learning programme includes a range of free workshops ranging from those which develop creative thinking amongst primary and nursery school age children through to secondary and FE groups to HE and adult groups. We offer a lively programme of family activities and events during school holidays. 20,000 young learners and 3,000 teachers, adult learners and family groups take part in our onsite learning programme each year.

Digital

Our digital learning programme at www.bl.uk/learning has won plaudits and major awards, notably for *Timelines: sources from History* which won both the Nominet and Museum Heritage Award in 2010. The site contains growing resources to complement the school curriculum. 1.3 million individuals benefited from the bl.uk/learning website this year.

We are developing a new generation of online teaching and learning tools for English Literature and Language study. The project is called *English Literature Online*. It will become a single, definitive and sustainable online destination for the international study and exploration of literature in English.











The people we reach: Our exhibition visitors

94% of our audience is ABC1
44% aged between 35 and 50
30% are under 35 years of age
26% are over 60

30% are from London
28% from elsewhere within the UK
24% of visitors come from overseas
17% from the South East

The Library's visitors have grown by 36% over the past 10 years and continue to grow with 49% first time visits during 2010.

95% rate their experience of the exhibitions programme as either excellent or good.





We have characterised the British Library's adult exhibition visitors into six different groups, designed to capture their essential motivation.

Inspiration-Seekers

This group looks for inspiration wherever they go – they are willing to try new things, take risks and be experimental. They're creative, culturally active and highly engaged in the arts. They are most likely to have a vocational involvement in the arts/creative sector and they are younger than many of the other segments. 24% are under 35 years of age.

Knowledge-Seekers

This group seeks intellectual stimulation and development for personal rather than academic reasons. They are lifelong learners and this is what drives their cultural engagement. They include an above average proportion of older visitors. 21% are aged 65+.

Information-Driven

This group is highly intellectually motivated and learning is a constant endeavour in their life. They primarily see the British Library as a research resource and visit the exhibition programme as a supplement to that.

Traditional Exhibition-goers

This group wants not only knowledge from their visit but an emotional, even spiritual, experience, a chance to see awe-inspiring things. They are cultural dabblers and visit a whole range of venues across London but they return to the British Library because they are convinced of the range of possibilities its exhibition programme offers.

British Library Loyal

This group is highly aware of what the British Library offers them and needs little persuasion to participate in the exhibitions programme.

Social Spacers

This group uses the British Library in an informal and social way and they 'drop in' on our exhibitions from time to time. The physical environment and the building's spaces form an important part of the visit experience.



Inspiring Science 2013

In 2013 the British Library will launch its inaugural science festival.

Running from 11 – 24th March, *Inspiring Science* will link to both to National Science and Engineering week and Brain Awareness week. A series of events, installations, talks and panel discussions will take place across a wide spectrum of scientific activities and thought leadership.

We are working with a variety of partner organisations to deliver an outstanding programme. We aim to attract those with a general interest in the various subjects and themes, as well as academics and leading specialists in their fields.

The British Library would look to work collaboratively with sponsors to develop content for the 2014 festival.

The 2013 festival programme includes:

Encounters between Art and Science
25 February – 24 March

An exhibition of science-inspired art installations created by artists on the Art and Science MA programme at Central Saint Martins.

Ideas in the Bath?
Serendipity, Chance and Science
11 March, 18:00 – 20:30

How luck and chance feature in scientific practice and careers.

Your Creative Brain: Neuroscience of Imagination
15 March, 18:30 – 21:00

Neuroscientists, artists, musicians, philosophers, and even 'extreme puppeteers' explore imagination and creativity from different angles.

TalkScience@BL
Open Data: What's the Use?
19 March, 18:00 – 20:30

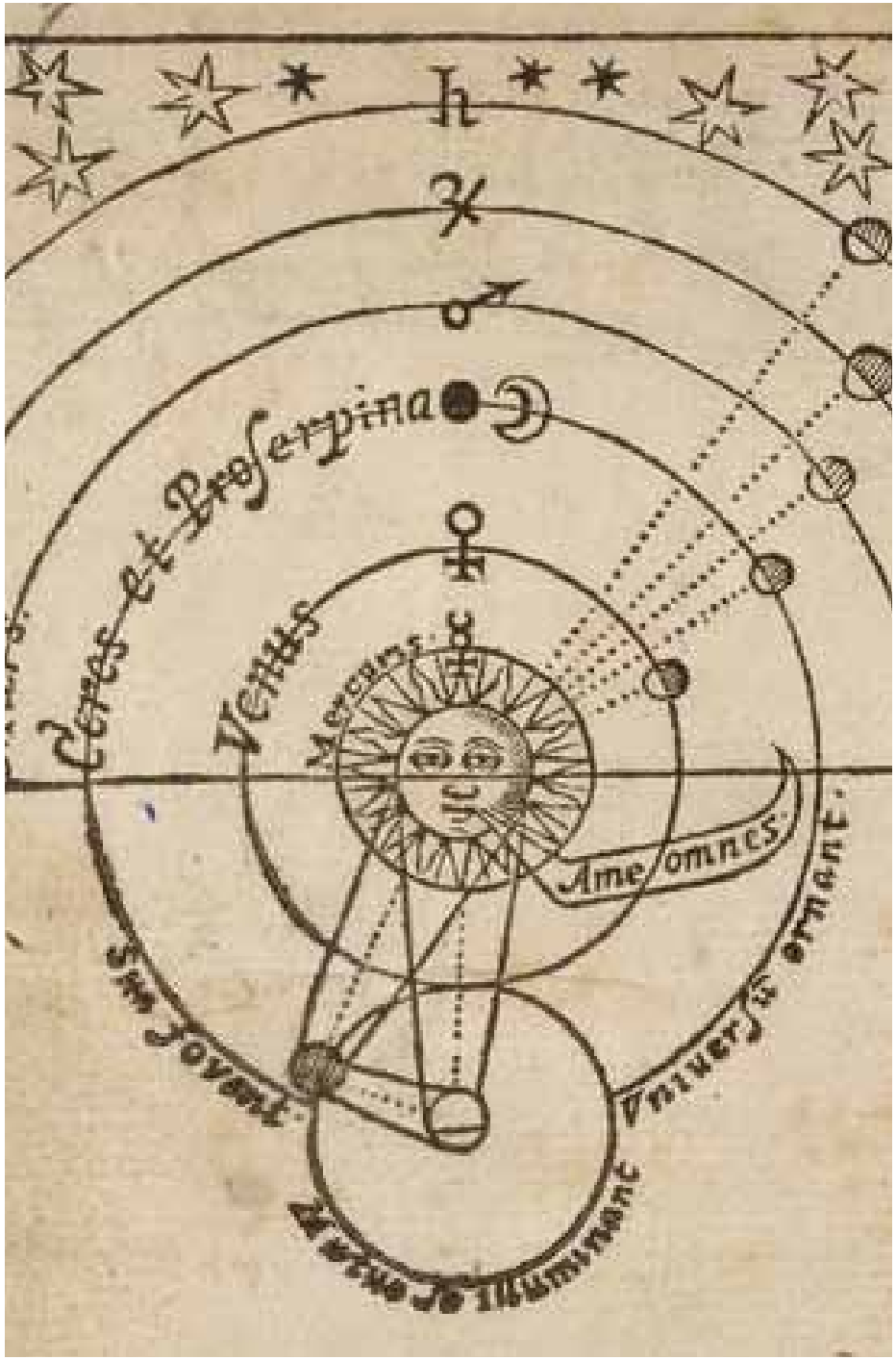
Joining the festival, our series of successful TalkScience@BL events. A look at the open data revolution with Open Data Institute co-founder, Professor Nigel Shadboldt.

Myths and Realities 17:
Addictive Personality
18 March, 18:30 – 20:00

A panel discussion on what drives addiction.

Full Frontal Nerdity
22 March, 19:00 – 21:30

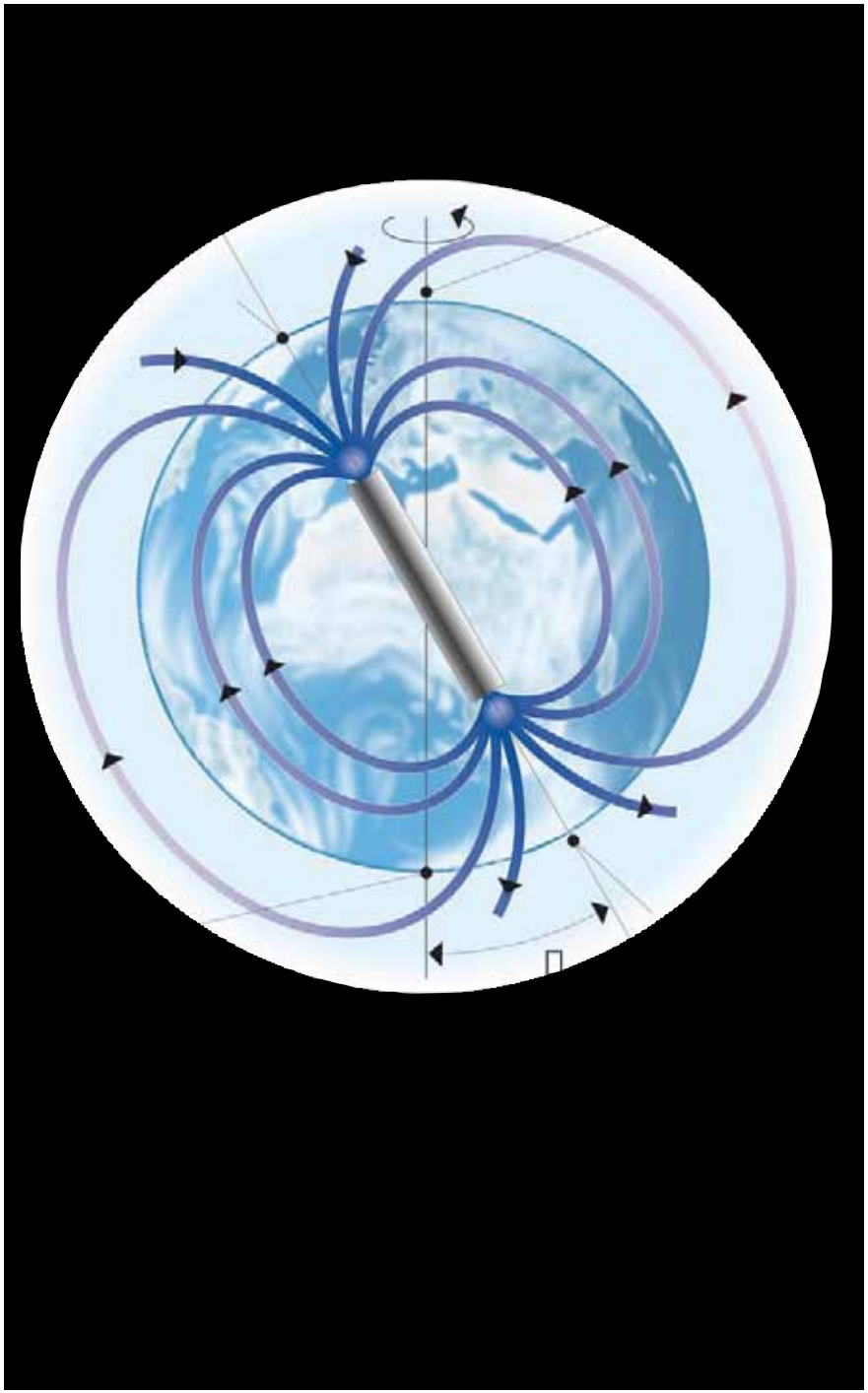
An evening of science, comedy and cabaret.



The marketing and outreach campaign

The British Library is planning a comprehensive multi-channel marketing campaign that is strategically constructed to make sure public awareness is continually refreshed throughout the exhibition.

- A high profile communications programme, targeting national press, arts broadcasts, print and digital media in a wide range of consumer and specialist magazines, including London-based correspondents of foreign media
- Multi-channel direct marketing through e-newsletters, event booklets and direct mail. We have approximately 200,000 subscribers to our e-newsletters, and send approximately 2.5 million e-communications per year
- Press advertising in national and local newspapers
- Advertising on the Underground across the London network
- Online advertising with external sites such as Times Online along with extensive coverage on www.bl.uk which has over 9 million unique users per year
- Direct marketing to schools, HE and FE institutions across UK.



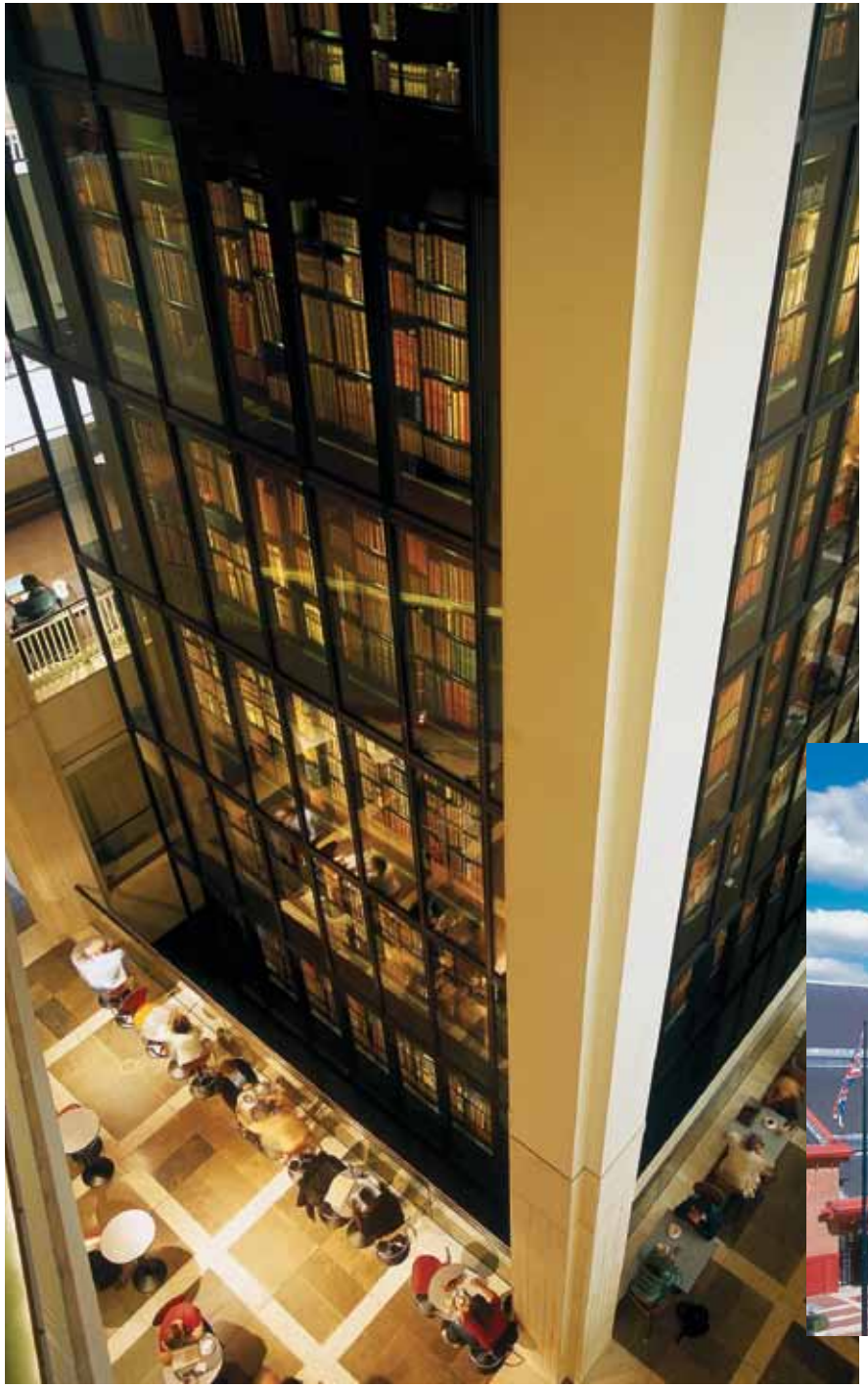
The marketing and outreach campaign

The Library's Learning and Outreach team works with schools and local community groups, helping to break down barriers to engagement.

Workshops, events and e-learning resources will be developed in relation to the exhibitions key themes. Workshops and events can be tailored to fulfil your company's objectives.

The British Library is keen to work with partners to enable them to message their existing CSR and education programmes, utilising the Library's resources and networks.

Our public programme receives high-profile visibility on our on-site billboard outside St Pancras International station and on our posters and banner sites along Euston Road. Our award-winning programme presents two major temporary exhibitions each year alongside promotion of the Library's permanent exhibition of treasures from its collections. In 2010/2011 812,000 visitors attended exhibitions and events, and over 10 million people watched the BBC's season of TV documentaries about maps providing valuable publicity for our *Magnificent Maps* exhibition.



Get in touch

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