

How organisms affect, and are affected by, their environment, including the accumulation of toxic materials	*	*	*	*	*		
Heredity as the process by which genetic information is transmitted from one generation to the next	*	*	*	*	*		
Differences between species	*	*	*	*	*	*	*
The variation between individuals within a species being continuous or discontinuous, to include measurement and graphical representation of variation	*	*	*	*	*	*	*
The variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection	*	*	*	*	*		
Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction	*	*	*	*	*		
The importance of maintaining biodiversity and the use of gene banks to preserve hereditary material	*	*	*	*	*		
Chemistry							
Differences between atoms, elements and compounds					*		
Chemical symbols and formulae for elements and compounds					*		
Conservation of mass changes of state and chemical reactions					*		
Chemical reactions as the rearrangement of atoms					*		
Representing chemical reactions using formulae and using equations					*		
Earth as a source of limited resources and the efficacy of recycling	*	*	*	*	*	*	
The carbon cycle	*	*	*	*	*		
The composition of the atmosphere		*	*	*	*		
The production of carbon dioxide by human activity and the impact on climate	*	*	*	*	*		
Physics							
The seasons and the Earth's tilt, day length at different times of year, in different hemispheres	*	*	*	*	*		

Geography

BBG teaching session (→)	Animal Handling	Rainforest Challenge	Gardens Tour	Glasshouse Tour	Photosynthesis, The Planet and Me	Natural Art	Japanese Challenge
Extend their locational knowledge and deepen their spatial awareness of the world's countries using maps of the world to focus on Africa, Russia, Asia (including China and India), and the Middle East, focusing on their environmental regions, including polar and hot deserts, key physical and human characteristics, countries and major cities	*	*	*	*	*		*
Understand geographical similarities, differences and links between places through the study of human and physical geography of a region within Africa, and of a region within Asia	*	*	*	*	*		*
Understand, through the use of detailed place-based exemplars at a variety of scales, the key processes in physical geography relating to: geological timescales and plate tectonics; rocks, weathering and soils; weather and climate, including the change in climate from the Ice Age to the present; and glaciation, hydrology and coasts	*	*	*	*	*		*
Understand, through the use of detailed place-based exemplars at a variety of scales, the key processes in human geography relating to: population and urbanization; international development; economic activity in the primary, secondary, tertiary and quaternary sectors; and the use of natural resources	*	*	*	*	*		*
Understand how human and physical process interact to influence, and change landscapes, environments and the climate; and how human activity relies on effective functioning of natural systems	*	*	*	*	*		*
Build on their knowledge of globes, maps and atlases and apply and develop this knowledge routinely in the classroom and in the field	*	*	*	*	*		*
Use fieldwork in contrasting locations to collect, analyse and draw conclusions from geographical data, using multiple sources of increasingly complex information	*	*	*	*	*		*

English

BBG teaching session (→)	Animal Handling	Rainforest Challenge	Gardens Tour	Glasshouse Tour	Photosynthesis, The Planet and Me	Natural Art	Japanese Challenge
Understand increasingly challenging texts through: learning new vocabulary, relating it explicitly to known vocabulary and understanding it with the help of context and dictionaries	*	*	*	*	*	*	*
Understand increasingly challenging texts through: making inferences and referring to evidence in the text	*	*	*	*	*		*
Write accurately, fluently, effectively and at length for pleasure and information through: summarizing and organising material, and supporting ideas and arguments with any necessary factual detail		*			*		*
Consolidate and build on their knowledge of grammar and vocabulary through: drawing on new vocabulary and grammatical constructions from their reading and listening, and using these consciously in their writing and speech to achieve particular effects	*	*	*	*	*	*	*
Consolidate and build on their knowledge of grammar and vocabulary through: discussing reading, writing and spoken language with precise and confident use of linguistic and literary terminology	*	*	*	*	*	*	*
Speak confidently and effectively, including through: using Standard English confidently in a range of formal and informal contexts, including classroom discussion	*	*	*	*	*	*	*

Mathematics

BBG teaching session (→)	Animal Handling	Rainforest Challenge	Gardens Tour	Glasshouse Tour	Photosynthesis, The Planet and Me	Natural Art	Japanese Challenge
Select and use appropriate calculation strategies to solve increasingly complex problems	*	*	*	*	*		*

Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems	*	*	*	*	*		*
Select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems	*	*	*	*	*		*

History

BBG teaching session (->)	Animal Handling	Rainforest Challenge	Gardens Tour	Glasshouse Tour	Photosynthesis, The Planet and Me	Natural Art	Japanese Challenge
Ideas, political power, industry and empire: Britain, 1745 - 1901		*	*	*	*		
Challenges for Britain, Europe and the wider world 1901 to the present day		*	*	*	*		

Art & Design

BBG teaching session (->)	Animal Handling	Rainforest Challenge	Gardens Tour	Glasshouse Tour	Photosynthesis, The Planet and Me	Natural Art	Japanese Challenge
To use a range of techniques and media, including painting						*	
To increase their proficiency in the handling of different materials						*	
To analyse and evaluate their own work, and that of others, in order to strengthen the visual impact or applications of their work						*	
About the history of art, craft, design and architecture, including periods, styles and major movements from ancient times up to the present day						*	

Citizenship

BBG teaching session (→)	Animal Handling	Rainforest Challenge	Gardens Tour	Glasshouse Tour	Photosynthesis, The Planet and Me	Natural Art	Japanese Challenge
The roles played by public institutions and voluntary groups in society, and the ways in which citizens work together to improve their communities, including opportunities to participate in school-based activities	*	*	*	*	*	*	*

Physical Education

BBG teaching session (→)	Animal Handling	Rainforest Challenge	Gardens Tour	Glasshouse Tour	Photosynthesis, The Planet and Me	Natural Art	Japanese Challenge
Take part in outdoor and adventurous activities which present intellectual and physical challenges and be encouraged to work in a team, building on trust and developing skills to solve problems, either individually or as a group		*			*	*	*