

Art Curriculum 2014

Purpose of study

Art, craft and design embody some of the highest forms of human creativity. A high-quality art and design education should engage, inspire and challenge pupils, equipping them with the knowledge and skills to experiment, invent and create their own works of art, craft and design. As pupils progress, they should be able to think critically and develop a more rigorous understanding of art and design. They should also know how art and design both reflect and shape our history, and contribute to the culture, creativity and wealth of our nation.

Aims

The national curriculum for art and design aims to ensure that all pupils:

- produce creative work, exploring their ideas and recording their experiences
- become proficient in drawing, painting, sculpture and other art, craft and design techniques
- evaluate and analyse creative works using the language of art, craft and design
- know about great artists, craft makers and designers, and understand the historical and cultural development of their art forms.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Schools are not required by law to teach the example content in [square brackets].

Year 6 Art Drawing, Painting, 3D and Printing

<p>EXPLORING AND DEVELOPING IDEAS 1a To create sketch books to record their observations and use them to review and revisit ideas. 1b To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials (e.g. pencil, charcoal, paint, clay)</p>	<p>INVESTIGATING AND MAKING 2a Investigate and combine visual and tactile qualities and match them to the purpose of their work. 2b Apply and develop use of tools and techniques, including drawing. 2c Design and make images and artefacts that communicate observations, ideas and feelings by using a variety of methods.</p>	<p>EVALUATING 3a Compare methods and ideas used in their own and others' work and say what they think and feel. 3b Adapt work in response to their views and describe how they may develop it further.</p>	<p>KNOWLEDGE AND UNDERSTANDING 4a How visual and tactile elements including colour, pattern, texture, line, tone, shape, form can be combined. 4b How materials and processes can be matched to ideas and intentions. 4c About great artists, architects and designers in history.</p>
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Emerging (Level 3)	Developing (Level 4)	Consolidating (Level 5)
<p>I explore ideas and collect visual and other information for my work. I use a number of sketches to base my work on. I use a viewfinder to help me in my sketching. I annotate my sketches in my art sketchbook to explain ideas. I sketch lightly (so I do not need to use a rubber). I mix colours using tints and tones. I use watercolour paint to produce washes for backgrounds and then add detail. I experiment in creating mood and feelings with colour. My cutting skills are precise. My skills now include: Coiling, Overlapping I know the striking effect work in a limited colour palette can have, through experimentation. I can make paper coils and lay them out to create patterns or shapes. I use mosaic. I use montage. I have the basics of cross-stitch and backstitch. I know how to colour fabric and have used this to add pattern. I can make weavings such as 'God's eyes'. I have the basics of quilting, padding and gathering fabric. I comment on similarities and differences between my own and others' work. I use different grades of pencil at different angles to show different tones. I use hatching and cross hatching to show tone and texture in my drawings. I explore comics throughout the 20th and 21st centuries to see how styles are used for effect. I use a number of brush techniques using thin and thick brushes, to produce shapes, textures, patterns and lines. I make notes in my sketchbook of how artists have used paint and paint techniques to produce pattern, colour, texture, tone, shape, space, form and line. I use tessellation and other patterns in my collage. I use my cutting skills to produce repeated patterns. I look at mosaic, montage and collage from other cultures. I know how to colour fabric and have used this to add pattern. I create texture in my textiles work by tying and sewing threads or by pulling threads. I use my textiles skills to create artwork that is matched to an idea or purpose. I am aware of textiles work from other cultures and times.</p>	<p>I explore ideas and collect visual and other information to help me to develop my work. I keep these in my art sketchbook. I select the most suitable drawing materials for the type of drawing I want to produce. I use shading to add interesting effects to my drawings, using different grades of pencil. I explain the ideas behind my images in my art sketchbook. I use a variety of different shaped lines to indicate movement in my drawings. I use shading to show shadows and reflections on 3D shapes. I have studied other artists' drawings and have experimented with some of these styles. I make comments on the ideas, methods and approaches used in my own and others' work, relating these to the context in which their work was made. I adapt and refine my work to reflect the purpose and meaning of the work. I can create colours by mixing to represent images I have observed in the natural and man-made world. I experiment with different colours to create a mood. My paintings use colour and shapes to reflect feelings and moods. I sketch (lightly) before I paint so as to combine lines with colour to produce images that convey a purpose. I experiment with techniques that use contrasting textures, colours or patterns. (rough/smooth, light/dark, plain/patterned) I have experimented with ceramic mosaic techniques to produce a piece of art. My work reflects a purpose, which I write about in my art sketchbook. My collage is based on observational drawings. My collage reflects a real purpose and I write about this in my art sketchbook. My collage combines both visual and tactile qualities. My collage takes inspiration from artists or designers. I have a sound understanding of how to use the techniques of sewing (cross stitch & backstitch) appliqué, embroidery, plaiting, finger knitting. I combine some of the techniques I know to create hangings. My work is based on tapestries, artefacts and hangings throughout history and in other cultures.</p>	<p>I explore ideas and collect visual and other information. I keep these in my art sketchbook. I select appropriate drawing materials. I know when different materials can be combined and use this to good effect. I am developing my own style of drawing. I choose appropriate techniques to convey the meaning of my work. My drawings communicate movement. My drawings of still life include shadows and reflections. My work includes historical studies of technical drawings, such as ancient architecture. I analyse and comment on ideas, methods and approaches used in my own and others' work, relating these to its context. I adapt and refine my work to reflect my own view of its purpose and meaning. My painting techniques are well developed. I am developing a style of my own. My paintings convey a purpose. Some of my paintings include texture gained through paint mix or brush technique. My paintings are based on observations and can convey realism or an impression of what I observe. I combine colours and create tints, tones and shades to reflect the purpose of my work. The lines in my paintings are sometimes stark and cold and at other times warm to reflect different features or intentions. I choose the most appropriate materials for my collages to fit the purpose. My collage work has a definite theme that is apparent to any viewer. I can modify and change materials to be used in my collage. My collage has a striking effect because of: its colour choices, [or any of the other possibilities below]: pattern, lines, tones, shapes, [or any combination of these]. I write about the visual and tactile qualities of my work in my sketchbook. My textile techniques are precise and help me to convey the purpose of my work. I have developed a preference for the type of textile work I prefer and am developing a range of pieces in a particular style, for a range of purposes My textile work sometimes combines visual and tactile elements, fit for purpose. My textile work is sometimes based on historical or cultural observations.</p>

DT Curriculum 2014

Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Schools are not required by law to teach the example content in [square brackets].

Key stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

DESIGN	MAKE	EVALUATE	TECHNICAL KNOWLEDGE
<p>1a Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.</p> <p>1b Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p>	<p>2a Select from and use a wider range of tools and equipment to perform practical tasks [e.g. Cutting, shaping, joining and finishing], accurately.</p> <p>2b Select from and use a wider range of materials and components, including constructional materials, textiles and ingredients according to their functional properties and aesthetic qualities.</p> <p>2c Follow safe procedures and safety to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</p> <p>2d Understand and apply the principles of a healthy and varied diet.</p>	<p>3a Investigate and analyse a range of existing products.</p> <p>3b Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p> <p>3c Understand how key events and individuals in design and technology have helped shaped the world.</p> <p>3d Recognise quality depends on how something is made and if it meets its intended use and suggest alternative ways of making a product if the first attempt fails.</p>	<p>4a Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.</p> <p>4b Understand and use mechanical systems in their products [e.g. Gears, pulleys, cams, levers and linkages]</p> <p>4c Understand and use electrical systems in their products [e.g. series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>4d Apply their understanding of computing to program, monitor and control their products.</p> <p>4e Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.</p>

Emerging (Level 3)	Developing (Level 4)	Consolidating (Level 5)
<p>I generate ideas and recognise that my designs have to meet a range of different needs.</p> <p>I make realistic plans to achieve my aims.</p> <p>I think ahead about the order of my work, choosing appropriate tools, equipment, materials, components and techniques.</p> <p>I clarify my ideas using labelled sketches and models to communicate the details of my designs.</p> <p>I identify where my evaluations have led to improvements in my products.</p> <p>I select ingredients for my food product.</p> <p>I work in a safe and hygienic way.</p> <p>I measure out my ingredients by weight or quantity, using scales where appropriate.</p> <p>My food product is presented to impress the intended user.</p> <p>I describe my food product in terms of taste, texture, flavour and relate this to the intended purpose of the food.</p> <p>My product has been cooked or chilled to change the nature of the raw ingredients.</p> <p>I select the appropriate textile(s) for my product.</p> <p>I use sharp scissors accurately to cut textiles.</p> <p>I know that the texture and other properties of materials affect my choice.</p> <p>My designs improve as I go along.</p> <p>I combine materials to add strength or visual appeal.</p>	<p>I generate ideas by collecting and using information.</p> <p>I take the views of users' into account when designing my products.</p> <p>I produce step-by-step plans.</p> <p>I communicate alternative ideas using words, labelled sketches and models showing that I am aware of the constraints of my design.</p> <p>I reflect on my designs and develop them bearing in mind the way they will be used.</p> <p>I identify what is working well and what can be improved.</p> <p>I measure using mm and then use scoring, and folding to shape materials accurately with a focus on precision.</p> <p>I make cuts (scissors, snips, saw) accurately and reject pieces that are not accurate and improve my technique.</p> <p>I make holes (punch, drill) accurately.</p> <p>My methods of working are precise so that products have a high quality finish.</p> <p>My joins are strong and stable, giving extra strength to my products.</p> <p>Some joins are flexible to allow for dismantling or folding.</p> <p>My textile work incorporates the views of intended users' and for the purpose.</p> <p>I use my art textiles skills such as stitching to help create a product that is sturdy and fit for purpose.</p> <p>My textile products include structural changes, such as plaiting or weaving to create new products such as rope, belts, bracelets etc.</p>	<p>I draw on and use various sources of information.</p> <p>I use my understanding of familiar products to help develop my own ideas.</p> <p>I work from my own detailed plans, modifying them where appropriate.</p> <p>I clarify my ideas through discussion, drawing and modelling.</p> <p>I communicate my ideas.</p> <p>I use my science knowledge of micro-organisms to store and prepare food properly.</p> <p>I use my science knowledge of irreversible changes to create food products that combine to make a new material, that I can then describe using its sensory qualities.</p> <p>I use proportions and ratio to produce recipes of my food product, scaling up and down for different quantities.</p> <p>I reflect on my designs and develop them bearing in mind the way they will be used.</p> <p>I test and evaluate my products, showing that I understand the situations my products will have to work.</p> <p>I am aware that resources may be limited (budget, time, availability).</p> <p>I evaluate my products and how I used information sources to inform my design.</p> <p>I measure and select materials with cost and workability in mind.</p> <p>I make very careful and precise measurements so that joins, holes and openings are in exactly the right place.</p> <p>I ensure that edges are finished by sometimes adding other materials. (e.g. edging strips).</p> <p>My product is well received by intended users.</p> <p>I hide some joints for aesthetic effect.</p> <p>My products have an awareness of commercial appeal.</p> <p>I experiment with a range of materials until I find the right mix of affordability, appeal and appropriateness for the job.</p> <p>I combine art skills to add colour and texture to my work.</p> <p>I mark out using my own patterns and templates.</p> <p>I join textiles using art skills of stitching, embroidering and plaiting to make a durable and desirable product.</p>

Geography Curriculum 2014

Purpose of study

A high-quality geography education should inspire in pupils a curiosity and fascination about the world and its people that will remain with them for the rest of their lives. Teaching should equip pupils with knowledge about diverse places, people, resources and natural and human environments, together with a deep understanding of the Earth's key physical and human processes. As pupils progress, their growing knowledge about the world should help them to deepen their understanding of the interaction between physical and human processes, and of the formation and use of landscapes and environments. Geographical knowledge, understanding and skills provide the frameworks and approaches that explain how the Earth's features at different scales are shaped, interconnected and change over time.

Aims

The national curriculum for geography aims to ensure that all pupils:

- develop contextual knowledge of the location of globally significant places – both terrestrial and marine – including their defining physical and human characteristics and how these provide a geographical context for understanding the actions of processes
- understand the processes that give rise to key physical and human geographical features of the world, how these are interdependent and how they bring about spatial variation and change over time
- are competent in the geographical skills needed to:
 - collect, analyse and communicate with a range of data gathered through experiences of fieldwork that deepen their understanding of geographical processes
 - interpret a range of sources of geographical information, including maps, diagrams, globes, aerial photographs and Geographical Information Systems (GIS)
 - communicate geographical information in a variety of ways, including through maps, numerical and quantitative skills and writing at length.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Schools are not required by law to teach the example content in [square brackets].

Year 6 – Geography – *An environmental issue i.e. The Future.*

Key stage 2

Pupils should extend their knowledge and understanding beyond the local area to include the United Kingdom and Europe, North and South America. This will include the location and characteristics of a range of the world's most significant human and physical features. They should develop their use of geographical knowledge, understanding and skills to enhance their locational and place knowledge.

Locational knowledge

- name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time

[e.g. mountain survival]

- identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones (including day and night)

[e.g. mountains]

Place knowledge

- understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom, a region in a European country, and a region within North or South America

[e.g. mountains, earthquakes, volcanos]

Human and physical geography

- describe and understand key aspects of:
- physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes [e.g. mountain survival], and the water cycle
- human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water [e.g. The environment]

Geographical skills and fieldwork

- use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied
- use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom and the wider world
- use fieldwork to observe, measure, record and present the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs, and digital technologies.

Year 6 – Geography Skills

Emerging (Level 3)

I ask, "Which PHYSICAL features does this place have?"
 I ask, "Which HUMAN features does this place have?"
 I give reasons for why some of those features are where they are.
 I describe different points of view on an environmental issue affecting a locality.***
 I find out about places and the features in those places by either going to that place to observe or by looking at information sources.
 I use my writing skills to communicate what I know.
 I use my maths skills to help me record and present my observations. (Charts, graphs, tables, scales etc).
 I use my ICT skills to help me find out information and present what I have found out.

I use the terms PHYSICAL and HUMAN accurately and can describe these features.
 I am building up a list of geography words (see 'recommended geography words list').
 I make detailed sketches of the features of a location.
 I devise questionnaires to find out local opinions on an issue.
 I look at maps of areas I am studying and identify features.
 I draw maps and plans of localities I have studied that include keys, grid references, four figure grid references (e.g.:05,15), a scale (e.g. 1 square =1KM), a compass rose indicating North and some standard Ordnance Survey symbols.
 I use the contents and index pages of an Atlas to find places quickly.
 I have looked at how a map is a flat representation of a place on the globe. I have used a globe to explore the nature of our world and can point out the North and South poles.
 I use the internet to help find out about a location, including aerial photographs (e.g. Google Earth).
 I can plan a route using 8 points of the compass.
 I can describe a place using information I have found out using my geography words well.
 I compare places that I have studied using the physical and human features for my comparisons.
 I give some reasons for the similarities and differences between places, using geographical language.
 When I describe where a place is I use the 8 points of the compass to describe its position.
 When I describe where a place is, I use country, region and names of towns, cities, and rivers.
 I know where the British Isles are and can name The United Kingdom (England, Scotland, Wales & Northern Ireland), and The Republic of Ireland.
 I can name and locate the capital cities London, Dublin, Edinburgh, Cardiff and Belfast.
 I can name and identify the Cambrian Mountains, the Grampian Mountains, the Lake District, and the Pennines.
 I can name and identify the three longest rivers in the UK (Severn, Thames, Trent).
 I can name and identify the seas around the United Kingdom (The English Channel, the Irish Sea and the North Sea).
 I can name the significant places and features of a location I am studying (and of my country of birth).
 I can name and locate France (Paris), Germany (Berlin) Italy (Rome), and Spain (Madrid).
 I can name and locate the largest mountain range in Europe (The Alps).

I can identify the parts of a river and understand how land use is different along the river's course. (Source, meander, mouth) and areas around (flood plains). *OR
 I can identify the parts of a coastline (river mouth, beach, cliffs, stacks, caves). *
 I can explain the process of erosion and deposition (at either the coast or in a river).*
 I know how erosion, deposition and flooding can affect people.*
 I can identify how a place where people live (settlement) has changed over time and give some reasons for this, giving precise observations or research as evidence for this.**
 I use both physical and human factors in my explanation. **
 I can compare places where people live and give reasons for the differences. **

I keep a class weather chart throughout the school year and discuss weather around the world. ***
 I collect temperature and rainfall information and keep this on a class record sheet throughout the school year. ***
 I can summarise an environmental issue either in the local area or an area I am studying. ***
 I can suggest solutions to different points of view as to how a locality can be improved. ***
 I know how I can contribute to a reduction in climate change. ***

Developing (Level 4)

I ask, "Which PHYSICAL and HUMAN features does this place have?"
 I give reasons why some of those features are where they are.
 I ask, "What may this place be like in the future?"
 I collect statistics about people and places / present them in the most appropriate ways.
 I map land use of a location with given criteria. (e.g. leisure, shopping, residential etc).
 I describe different points of view on an environmental issue affecting a locality and give my opinion on the issue, giving reasons.
 I find out about places and the features in those places by either going to that place to observe or by deciding which will be the best sources of information to look at.
 I choose the most appropriate writing skills to communicate what I know.
 I choose the most appropriate maths skills to help me record and present my observations. (Charts, graphs, tables, scales etc).
 I use the terms PHYSICAL and HUMAN accurately and can describe these features.
 I am confidently using geographical words (see 'recommended geography words list').
 I make detailed field sketches of the features of a location, labelling them with appropriate geographical words.
 My field sketches show layouts, patterns or movement (as appropriate).
 I make careful measurements of rainfall, temperature, distances, depths (as appropriate) and record these in the most suitable way. (Including use of ICT).
 I look at and make detailed maps of areas I am studying.
 I draw maps and plans of localities I have studied that include keys, grid references, four figure grid references (e.g. :05,15), a scale (e.g. 1 square =1KM), a compass rose, indicating North and standard Ordnance Survey symbols.
 I use the contents and index pages of an Atlas to find places quickly, and use my knowledge of the 7 continents to help me locate places in the contents.
 I use aerial photographs to match features on a map to the photograph.
 I use aerial photographs to help describe a location in more detail.
 I identify buildings and land use by using aerial photographs.
 I use the internet to help find out about a location (e.g. Google Earth).
 I can describe a place using information I have found out using my geographical words well.
 I compare and contrast places that I have studied using the physical and human features for my comparisons, and my knowledge of continents, countries, climate, temperature, and economy.
 I give some reasons for the similarities and differences between places, using geographical language and what I know about relationships between countries.
 When I describe where a place is I use the 8 points of the compass to describe its position.
 When I describe where a place is, I use continent, country, region and names of towns, cities, and rivers.
 When I describe places, I do so in terms of its economic development as well as other features.
 I can name and locate all places and features learned previously and:
 I can name and locate the River Rhine (longest river in Europe).
 I can name the two largest seas around Europe (the Mediterranean Sea, the North Sea).
 I can name the significant places and features of a location I am studying (and of my country of birth).
 I can name and locate the continents (Africa, Asia, Europe, North America, South America, Antarctica)
 I can name the largest cities in each continent (Lagos, Tokyo, Paris, New York, Sydney, and Sao Paulo).
 I can name the six countries with the highest populations (Brazil, China, India, Indonesia, Russia, and USA).
 I keep a class weather chart throughout the school year and discuss changes, relating this to news and opinions about climate change.
 I collect temperature and rainfall information and keep this on a class record sheet throughout the school year.
 I can summarise an environmental issue , its possible causes, and solutions either in the local area or an area I am studying.
 I can suggest more than one solution as to how a locality can be improved.
 I know how I can contribute to a reduction in climate change.

Consolidating (Level 5)

I ask, "Which PHYSICAL and HUMAN features does this place have?" I give reasons for those features using geographical language.
 I ask, "What may this place be like in the future?" and describe the possibilities, giving reasons that I back up with my evidence.
 I collect statistics about people and places and present them in the most appropriate ways.
 I map land use of a location and devise my own criteria. (e.g. leisure, shopping, residential etc).
 I summarise different points of view on an environmental issue affecting a locality and give my opinion on the issue, giving reasons.***
 I find out about places and the features in those places by either going to that place to observe or by deciding which will be the best sources of information to look at.
 I understand how the physical features of a location can affect the human activity and can give examples of this (e.g. leisure and tourism in a hot country, cities near rivers etc).
 I am confidently using geographical words (see 'recommended geography words list').
 I make detailed field sketches and combine these with digital images of the features of a location, labelling them with appropriate geography words.
 My field sketches and digital images/data show layouts, patterns or movement (as appropriate).
 I make careful measurements of rainfall, temperature, distances, depths (as appropriate) and record these in the most suitable way. (Including use of ICT)
 I look at and make detailed maps of areas I am studying, including any patterns that are apparent using appropriate colour coding to show these patterns.
 I draw maps and plans of localities I have studied that include keys, four figure grid references and I can use these four figure references to find 6 figure references. (e.g.: 221,151), a scale (e.g. 1 square =1KM), a compass rose, indicating North and standard Ordnance Survey symbols.
 I use the contents and index pages of an Atlas with confidence and speed.
 I use aerial photographs to identify patterns (such as 'ribbon development', industry around rivers, ports etc).
 I use the internet to help find out about a location (e.g. Google Earth).
 I use knowledge of time zones to work out journey times around the world.
 I can describe a place using information I have found out using my geographical words well.
 I compare and contrast places that I have studied using the physical and human features for my comparisons, and my knowledge of continents, countries, climate, temperature, and economy.
 I give some reasons for the similarities and differences between places, using geographical language and what I know about relationships between countries.
 When I describe where a place is I use the 8 points of the compass to describe its position.
 When I describe where a place is, I use continent, country, region and names of towns, cities, and rivers.
 When I describe places, I do so in terms of economic development as well as other features.
 I can name and locate all places and features learned previously and:
 The three largest mountain ranges in the world: The Andes, the Himalayas and the Rocky Mountains.
 I can name and identify the three longest rivers in the world: The River Nile, the Amazon and the Mississippi.
 I can name and identify the largest desert in the world, The Sahara.
 I can name and identify the oceans: The Arctic, Atlantic, Indian and Pacific.
 I can name and locate the two canals linking seas or oceans: The Panama and the Suez Canals.
 I can identify the parts of a river (source, meander, mouth) and areas around (flood plains). *OR
 I can identify the parts of a coastline (river mouth, beach, cliffs, stacks, caves). *
 I can explain the process of erosion and deposition (at either the coast or in a river).*
 I know how erosion, deposition and flooding can affect people.*
 I can describe a place in terms of how economically developed it is.
 I can identify how a place where people live (settlement) has changed over time and give some reasons for this, using both physical and human factors in my explanation. **
 name and locate the two canals linking seas or oceans: The Panama and the Suez Canals.

History Curriculum 2014

Purpose of study

A high-quality history education will help pupils gain a coherent knowledge and understanding of Britain's past and that of the wider world. It should inspire pupils' curiosity to know more about the past. Teaching should equip pupils to ask perceptive questions, think critically, weigh evidence, sift arguments, and develop perspective and judgement. History helps pupils to understand the complexity of people's lives, the process of change, the diversity of societies and relationships between different groups, as well as their own identity and the challenges of their time.

Aims

The national curriculum for history aims to ensure that all pupils:

- know and understand the history of these islands as a coherent, chronological narrative, from the earliest times to the present day: how people's lives have shaped this nation and how Britain has influenced and been influenced by the wider world
- know and understand significant aspects of the history of the wider world: the nature of ancient civilisations; the expansion and dissolution of empires; characteristic features of past non-European societies; achievements and follies of mankind
- gain and deploy a historically grounded understanding of abstract terms such as 'empire', 'civilisation', 'parliament' and 'peasantry'
- understand historical concepts such as continuity and change, cause and consequence, similarity, difference and significance, and use them to make connections, draw contrasts, analyse trends, frame historically-valid questions and create their own structured accounts, including written narratives and analyses
- understand the methods of historical enquiry, including how evidence is used rigorously to make historical claims, and discern how and why contrasting arguments and interpretations of the past have been constructed
- gain historical perspective by placing their growing knowledge into different contexts, understanding the connections between local, regional, national and international history; between cultural, economic, military, political, religious and social history; and between short- and long-term timescales.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Schools are not required by law to teach the example content in [square brackets] or the content indicated as being 'non-statutory'.

Year 6 - History

Pupils should continue to develop a chronologically secure knowledge and understanding of British, local and world history, establishing clear narratives within and across the periods they study. They should note connections, contrasts and trends over time and develop the appropriate use of historical terms. They should regularly address and sometimes devise historically valid questions about change, cause, similarity and difference, and significance. They should construct informed responses that involve thoughtful selection and organisation of relevant historical information. They should understand how our knowledge of the past is constructed from a range of sources.

In planning to ensure the progression described above through teaching the British, local and world history outlined below, teachers should combine overview and depth studies to help pupils understand both the long arc of development and the complexity of specific aspects of the content.

Topics

- | | |
|---|---|
| <ul style="list-style-type: none">▪ changes in Britain from the Stone Age to the Iron Age | <ul style="list-style-type: none">▪ Ancient Greece – a study of Greek life and achievements and their influence on the western world▪ the achievements of the earliest civilizations – an overview of where and when the first civilizations appeared [Year 6] |
|---|---|

Examples (non-statutory)

This could include:

- late Neolithic hunter-gatherers and early farmers, for example, Skara Brae
- Bronze Age religion, technology and travel, for example, Stonehenge
- Iron Age hill forts: tribal kingdoms, farming, art and culture

Year 6 – History Skills

Emerging (Level 3)	Developing (Level 4)	Consolidating (Level 5)
<p>I use a time line to place events I have found out about.</p> <p>I understand that a time line can be divided into BC (Before Christ and AD Anno Domini).</p> <p>I can divide recent history into the present, using 21st Century, and the past using 19th and 20th Centuries.</p> <p>I can name the date of any significant event from the past that I have studied and place it in approximately the right place on a time line.</p> <p>I use words and phrases such as century, decade, before Christ, after, before, during to describe the passing of time. I use evidence to describe the houses and settlements of people in the past.</p> <p>I use evidence to describe the culture and leisure activities from the past.</p> <p>I use evidence to describe the clothes, way of life and actions of people in the past.</p> <p>I use evidence to describe buildings and their uses of people from the past.</p> <p>I use evidence to describe the things people believed in the past (attitudes and religion).</p> <p>I use evidence to describe what was important to people from the past.</p> <p>I use evidence to show how the lives of rich and poor people from the past differed.</p> <p>I use evidence to find out how any of the above may have changed during a time period.</p> <p>I use evidence to give reasons why changes may have occurred.</p> <p>I show on a time line, the changes that I have identified.</p> <p>I can describe some similarities and differences between some people, events and objects (artefacts) I have studied.</p> <p>I can describe how some of the things I have studied from the past affect life today.</p> <p>I have looked at two versions of the same event in history and have identified differences in the accounts.</p> <p>I give reasons why there may be different accounts of history. I use documents, printed sources (e.g. archive materials) the Internet, databases, pictures, photographs, music, artefacts, historic buildings, visits to museums and galleries and visits to sites to collect evidence about the past.</p> <p>I ask, "What was it like for a... (child, rich person, etc) during...</p> <p>I suggest sources of evidence to help me answer questions. I present my findings about the past using my speaking, writing, maths, ICT, drama and drawing skills.</p> <p>I use dates and terms accurately.</p> <p>I discuss the most appropriate way to present my information, which I realise is for an audience.</p>	<p>I use a time line to place events I have found out about both in this country and abroad.</p> <p>I understand that a time line can be divided into periods: Before Christ (Ancient Civilizations such as Ancient Greeks and Egyptians or Maya etc) AD Romans (AD 43), Anglo-Saxons, Tudors (AD 1485) Stuarts (AD 1603), Georgians (AD 1714), Victorians (AD 1837), Today (AD 1939...).</p> <p>I can describe the main changes in a period of history (using words such as 'social', 'religious', 'political', 'technological' and 'cultural'.</p> <p>I can name the date of any significant event from the past that I have studied and place it in the right place on a time line.</p> <p>I use words and phrases such as era, period, century, decade, Before Christ, AD, after, before, during to describe the passing of time. With help, I choose reliable sources of factual evidence to describe the houses and settlements of people in the past.</p> <p>With help, I choose reliable sources of factual evidence to describe the culture and leisure activities from the past.</p> <p>With help, I choose reliable sources of factual evidence to describe the clothes, way of life and actions of people in the past.</p> <p>With help, I choose reliable sources of factual evidence to describe buildings and their uses of people from the past.</p> <p>With help, I choose reliable sources of factual evidence to describe the things people believed in the past (attitudes and religion).</p> <p>With help, I choose reliable sources of factual evidence to describe what was important to people from the past.</p> <p>With help, I choose reliable sources of factual evidence to show how the lives of rich and poor people from the past differed.</p> <p>With help, I choose reliable sources of factual evidence to find out how any of the above may have changed during a time period.</p> <p>I give my own reasons why changes may have occurred, backed up by evidence I have researched.</p> <p>I show on a time line, the changes that I have identified.</p> <p>I can describe similarities and differences between some people, events and objects (artefacts) I have studied.</p> <p>I can describe how some of the things I have studied from the past affect life today.</p> <p>I have looked at different versions of the same event in history and have identified differences in the accounts.</p> <p>I know that people both now and in the past represent events or ideas in a way that persuades others.</p> <p>I know and understand that it is important to know that some evidence from the past (and present) is propaganda, opinion or misinformation, and that this affects interpretations of history.</p> <p>I give clear reasons why there may be different accounts of history. I use documents, printed sources (eg archive materials) the Internet, databases, pictures, photographs, music, artefacts, historic buildings, visits to museums and galleries and visits to sites to collect evidence about the past.</p> <p>I ask, "What was it like for a... (child, rich person, etc) during...</p> <p>I choose reliable sources of evidence to help me answer questions, realising that there is often not a single answer to historical questions. I present my findings about the past using my speaking, writing, maths, ICT, drama and drawing skills.</p> <p>I use dates and terms accurately.</p> <p>I choose the most appropriate way to present my information, which I realise is for an audience</p>	<p>I use a time line to place events, periods and cultural movements (linked to art, music and architecture) I have found out about from all around the world.</p> <p>I use a time line to demonstrate changes and developments in culture, technology, religion and society.</p> <p>My time lines use the following key periods as reference points for my descriptions of the past: Before Christ (Ancient Civilizations such as Ancient Greeks and Egyptians or Maya etc) AD Romans (AD 43), Anglo-Saxons, Tudors (AD 1485) Stuarts (AD 1603), Georgians (AD 1714), Victorians (AD 1837), Today (AD 1939...).</p> <p>I can describe the main changes in a period of history (using words such as 'social', 'religious', 'political', 'technological' and 'cultural'.</p> <p>I can name the date of any significant event from the past that I have studied and place it in the right place on a time line.</p> <p>I use words and phrases such as era, period, century, decade, Before Christ, AD, after, before, and during to describe the passing of time. I choose reliable sources of factual evidence to describe the houses and settlements of people in the past.</p> <p>I choose reliable sources of factual evidence to describe the culture and leisure activities from the past.</p> <p>I choose reliable sources of factual evidence to describe the clothes, way of life and actions of people in the past.</p> <p>I choose reliable sources of factual evidence to describe buildings and their uses of people from the past.</p> <p>I choose reliable sources of factual evidence to describe the things people believed in the past (attitudes and religion).</p> <p>I choose reliable sources of factual evidence to describe what was important to people from the past.</p> <p>I choose reliable sources of factual evidence to show how the lives of rich and poor people from the past differed.</p> <p>I choose reliable sources of factual evidence to find out how any of the above may have changed during a time period.</p> <p>I give my own reasons why changes may have occurred, backed up by evidence I have researched.</p> <p>I show on a time line, the changes that I have identified.</p> <p>I can describe similarities and differences between some people, events and objects (artefacts) I have studied.</p> <p>I can describe how some of the things I have studied from the past affect life today.</p> <p>I make links between some of the features of past societies. (e.g. religion, houses, society, technology.) I evaluate evidence, which helps me to choose the most reliable forms.</p> <p>I know that people both in the past and now, including myself, have a point of view and that this can affect interpretation of the past.</p> <p>I give clear reasons why there may be different accounts of history, linking this to factual understanding of the past. I use documents, printed sources (e.g. archive materials) the Internet, databases, pictures, photographs, music, artefacts, historic buildings, visits to museums, galleries and sites to collect evidence about the past.</p> <p>I ask, "What was it like for a... (child, rich person, etc) "during...</p> <p>I choose reliable sources of evidence to help me answer questions, realising that there is often not a single answer to historical questions. I present my findings about the past using my speaking, writing, maths, ICT, drama and drawing skills.</p> <p>I use dates and terms accurately.</p> <p>I use the key vocabulary of the time to convey my understanding of the past.</p> <p>I choose the most appropriate way to present my information, which I realise is for an audience.</p>

ICT Curriculum 2014

Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Schools are not required by law to teach the example content in [square brackets].

Computing – Key Stages 1 and 2

Subject content

Key stage 1

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Key stage 2

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

ICT: End of Year Expectations Year 6

	Digital Literacy		Developing Ideas and Making Things Happen		Exchanging and Sharing Information	
	Multimedia		Programming	Handling Data	Technology in our lives	E-Safety
Key Skills	<ul style="list-style-type: none"> • I can talk about audience, atmosphere and structure when planning a particular outcome. • I can confidently identify the potential of unfamiliar technology to increase my creativity. • I can combine a range of media, recognising the contribution of each to achieve a particular outcome. • I can tell you why I select a particular online tool for a specific purpose. • I can be digitally discerning when evaluating the effectiveness of my own work and the work of others. 		<ul style="list-style-type: none"> • I can deconstruct a problem into smaller steps, recognising similarities to solutions used before. • I can explain and program each of the steps in my algorithm. • I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm. • I can recognise when I need to use a variable to achieve a required output. • I can use a variable and operators to stop a program. • I can use different inputs (including sensors) to control a device or onscreen action and predict what will happen. <p>I can use logical reasoning to detect and correct errors in a algorithms and programs.</p>	<ul style="list-style-type: none"> • I can plan the process needed to investigate the world around me. • I can select the most effective tool to collect data for my investigation. • I can check the data I collect for accuracy and plausibility. • I can interpret the data I collect. • I can present the data I collect in an appropriate way. • I use the skills I have developed to interrogate a database. 	<ul style="list-style-type: none"> • I can tell you the Internet services I need to use for different purposes. • I can describe how information is transported on the Internet. • I can select an appropriate tool to communicate and collaborate online. • I can talk about the way search results are selected and ranked. • I can check the reliability of a website. • I can tell you about copyright and acknowledge the sources of information that I find online. • I know that websites can use my data to make money and target their advertising. 	<ul style="list-style-type: none"> • I protect my password and other personal information. • I can explain the consequences of sharing too much about myself online. • I support my friends to protect themselves and make good choices online, including reporting concerns to an adult. • I can explain the consequences of spending too much time online or on a game. • I can explain the consequences to myself and others of not communicating kindly and respectfully. <p>I protect my computer or device from harm on the Internet.</p>
Suggested Software	Clicker 6 Espresso Powerpoint Publisher Movie maker Word Wordle Photostory		Google sketchup Movie Maker Digital Camera Kodu game lab Scratch	MSW LOGO Microsoft Excel Data loggers	Microphones Webcams Digital Camera	Twitter Edmondo Socrative
Example Activity	We are photographers – Children explore photography and effects using I-pad or digital camera.	We are architects – Children plan, design and create their own eco house using Google Sketch up.	We are animators – create a cartoon using scratch.		Children search for specific facts about chosen authors using different keywords to answer a list of pre-designed questions.	

Science Curriculum 2014

Purpose of study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

The national curriculum for science aims to ensure that all pupils:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics
- develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

Scientific knowledge and conceptual understanding

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure, superficial understanding will not allow genuine progression: pupils may struggle at key points of transition (such as between primary and secondary school), build up serious misconceptions, and/or have significant difficulties in understanding higher-order content.

Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study science.

Science – key stages 1 and 2

The nature, processes and methods of science

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. The notes and guidance give examples of how 'working scientifically' might be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data. 'Working scientifically' will be developed further at key stages 3 and 4, once pupils have built up sufficient understanding of science to engage meaningfully in more sophisticated discussion of experimental design and control.

Spoken language

The national curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

School curriculum

The programmes of study for science are set out year-by-year for key stages 1 and 2. Schools are, however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, schools therefore have the flexibility to introduce content earlier or later than set out in the programme of study. In addition, schools can introduce key stage content during an earlier key stage if appropriate. All schools are also required to set out their school curriculum for science on a year-by-year basis and make this information available online.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Schools are not required by law to teach the content indicated as being 'non-statutory'.

Year 6 – Science

<p style="text-align: center;">Working Scientifically</p> <ul style="list-style-type: none"> planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments. 	<p style="text-align: center;">Living Things and their habitats</p> <ul style="list-style-type: none"> describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics. Describe the life process of reproduction (humans) Recognise the impact of diet, exercise, drugs and life style on the way their bodies function (From Y5 Animals incl humans) 	<p style="text-align: center;">Evolution and Inheritance</p> <ul style="list-style-type: none"> recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 	<p style="text-align: center;">Properties and changes of materials (Non-reversible)</p> <ul style="list-style-type: none"> explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<p style="text-align: center;">Light</p> <ul style="list-style-type: none"> recognise that light appears to travel in straight lines use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. <p>RECAP: Y4 Earth and Space objectives</p>	<p style="text-align: center;">Forces</p> <ul style="list-style-type: none"> explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
<p>Notes and Non-Statutory Guidance Pupils should:</p> <ul style="list-style-type: none"> use their science experiences to: explore ideas/ raise different kinds of questions; select/ plan the most appropriate type of scientific enquiry to use to answer scientific questions; recognise when/ how to set up comparative/ fair tests. Explain which variables to controlled and why. Use/ develop keys etc to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment. Make own decisions about observations/ measurements to make etc Choose appropriate equipment and explain how to use it accurately. Decide how to record data; look for different causal relationships in their data and identify evidence that refutes or supports their ideas. Use results to identify when further tests and observations might be needed Recognise which secondary sources will be most useful/ begin to separate opinion from fact. Use relevant scientific language/ illustrations to discuss, communicate/ justify scientific ideas. Talk about how scientific ideas have developed over time. Pupils are not expected to cover each aspect for every area of study. 	<p>Notes and Non-Statutory Guidance Build on learning about grouping living things in Y4 by looking at the classification system in more detail. Introduce idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Observe (directly where possible) to classify animals into commonly found invertebrates (e.g. insects, spiders, snails, worms)/ vertebrates (fish, amphibians, reptiles, birds and mammals). Find out about the significance of the work of scientists e.g. Carl Linnaeus, a pioneer of classification. Learn how to keep bodies healthy and how bodies might be damaged. Learn about the changes experience in puberty Pupils might work scientifically by: use classification systems/keys to identify animals/ plants in immediate environment. Research unfamiliar animals/ plants from broad range of other habitats. Decide on classification.</p>	<p>Notes and Non-Statutory Guidance Build on fossils Y3 rock topic. Find out more about how living things on earth have changed over time. Introduce idea that characteristics are passed from parents to their offspring, e.g. by considering different breeds of dogs, and what happens when e.g. labradors crossed with poodles. Appreciate that variation in offspring over time can make animals more or less able to survive in particular environments e.g. explore how giraffes' necks got longer, or development of insulating fur on the arctic fox. Find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution. Note: At this stage, pupils are not expected to understand how genes and chromosomes work.</p>	<p>Notes and Non-Statutory Guidance Explore changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda. Find out about how chemists create new materials e.g. Spencer Silver, who invented the glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton. Observe and compare the changes that take place e.g. burning different materials or baking bread or cakes. Research and discuss how chemical changes have an impact on our lives, for example, cooking, and discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.</p>	<p>Notes and Non-Statutory Guidance Build on light in Y4 Explore the way that light behaves, including light sources, reflection and shadows. Talk about what happens and make predictions. Pupils might work scientifically by: deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. Investigate the relationship between light sources, objects and shadows by using shadow puppets. Look at a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters (they do not need to explain why these phenomena occur).</p>	<p>Notes and Non-Statutory Guidance Explore falling objects and raise questions about the effects of air resistance. Observe how different objects such as parachutes and sycamore seeds fall. Experience forces that make things begin to move, get faster or slow down. Explore effects of friction on movement and find out how it slows or stops moving objects e.g. observing the effects of a brake on a bicycle wheel. Explore effects of levers, pulleys and simple machines on movement. Find out how scientists e.g. Galileo Galilei / Isaac Newton helped develop theory of gravitation. Pupils might work scientifically by: exploring falling paper cones or cup-cake cases. Designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective. They might explore resistance in water by making and testing boats of different shapes. They might design and make products that use levers, pulleys, gears and/or springs and explore their effects.</p>

Year 6 Investigative Science Skills

	Emerging (Level 3)	Developing (Level 4)	Consolidating (Level 5)
Planning	This is the equipment/information I need for my investigation	This is the equipment /information I need	
Collecting data What are we measuring or observing?	I am getting better at choosing which equipment I need.	This is how I am going to use the equipment...	I am using this equipment because
Collecting data What might affect what we are observing or measuring	With help: I am practising to know what to measure or observe What do you think will happen toif we changeand keepthe same? I think X might happen because (everyday knowledge)	I am going to look/listen to X I am going to measureX List up to 3 variables that will effect X. A, B and C will effect X I think because.... (science knowledge)	I am going to observe ... because Choose most suitable variable A, B and C etc will effect Y and the one we will investigate is A because ... What do you think will happen to Y if we change a and keep b, and c the same (using appropriate units)
Gathering evidence	With help from my friends or teacher I am getting better at saying: This is what I have observed... This is what I have measured ... (Accurate)	This is what I have observed... This is what I have measured ... (Accurate)	This is what I have observed... This is what I have measured ... They are accurate because.. They are reliable because
Describing what's been found out with a reason	I am practising to say: we found out and we think it happened because	We found out X. The faster the X the slower the Y (er/er rule)	Using the graph and table, we found out X. This happened because...
Using evidence to explain		We didn't think this would happen This is a spooky result. It might of happened because Identifies evidence and uses it. Our evidence is X and it tell us ...	We didn't think this would happen This is a spooky (anomalous) result. It might have happened because We even do our test to see if it happened again. identifies evidence and uses it. Our evidence is X and tell us ... (in any application)
Communicating scientific ideas	I am practising to show you what I have found out using tables bar charts, drawing, writing		
Suggesting improvements	I am practising to suggest improvements to our method . If we did this again we would do	Suggest improvements to our method and say why. If we did this again we would do X because ...	Evaluate effectiveness of method. Our method was successful because We could improve it if we!
Keeping safe	With help I am getting better at telling you if something might not be safe	This could be a risk in my investigation..	This is a list of all the possible risks