

Science End of Year Skills - Year 6

Working Scientifically

Upper Key Stage 2 - Thinking like Scientists

- I can use my scientific experiences to raise different kinds of questions
- I can select and plan the most appropriate type of scientific enquiry to answer a question
- I can recognise how and when to set up comparative and fair test and explain which variables need to be controlled
- I can select the most appropriate equipment to take accurate measurements and explain how to use the equipment

Upper Key Stage 2 - Experimenting like Scientists

- I can measure and record accurate and precise results using a range of scientific equipment
- I can design my own results tables to record results from a range of investigations
- I can select which observations to make, what measurements to use and how long to make them for
- I can recognise when it is appropriate to take repeat readings and know how to calculate average results
- I can produce my own keys to help with classification and identification

Upper Key Stage 2 - Finding answers like Scientists

- I can describe how famous scientist developed their ideas based on observation and experiment
- I can present the findings of my investigations using scatter graphs and line graphs
- I can describe the results of my investigations, identifying different casual relationships in data
- I can use evidence to produce a conclusion, using scientific knowledge to explain results
- I can use evidence to refute or support a scientific idea
- I can recognise when further tests and observations may need to be collected to reach a conclusion
- I can select appropriate secondary sources to research ideas
- I can separate opinion from fact
- I can use relevant scientific language to communicate and justify scientific ideas
- I can explain how scientific ideas have changed over time
- I can use the research of famous scientists to help me explain the outcomes of my investigations

Science Units

Animals, including humans

- I can label the main parts of the circulatory system
- I can describe the function of the heart, blood vessels and blood
- I can describe how the heart pumps blood around the body
- I can describe how water and nutrients are transported around the body
- I can describe a healthy lifestyle
- I can explain how the structure of the heart allows it to pump blood around the body
- I can explain what could happen to me if I have an unhealthy diet and don't exercise
- I can explain the dangers of alcohol, smoking and drugs on the human body

Living things and habitats

- I can describe the main features of each vertebrate group: fish, amphibians, reptiles, birds and mammals
- I can describe the main features of each invertebrate group: worms, snails and slugs, spiders and insects
- I can explain why living organisms are placed in different groups
- I can describe how variations between individuals of the same species occur
- I can use evidence from my observations to show that characteristics can be passed from parents to offspring
- I can explain why characteristics that give animals and plants advantages can lead to adaptations
- I can explain how plants and animals have adapted to their environments, leading to evolution

Materials

See Year 5 unit

Light

- I can provide examples to demonstrate that light travels in straight lines
- I can use my knowledge about the way light travels to explain how we see objects
- I can use my knowledge about the way light travels to explain the shape of shadows
- I can use my observations of the world around me to describe how mirrors can be used
- I can use the results of my investigations to describe other phenomena of light (rainbows, refraction, colour filters)

Earth and Evolution

- I can use fossil evidence to explain what life was like on Earth millions of years ago
- I can explain how the fossil record provides evidence for evolution

Electricity

- I can identify and draw recognised circuit symbols
- I can construct simple circuits from circuit diagrams
- I can draw simple circuit diagrams using recognised circuit symbols
- I can use evidence from my investigations to describe the relationship between the brightness of a lamp or the volume of a buzzer with the number and voltage of cells in a circuit
- I can use results of my investigations to describe what happens when you change components in a circuit
- I can apply my knowledge of simple circuits to solve everyday problems

Foundation End of Year Skills - Year 6

Milestone 3 (Year 5 and 6)

History

Year 6 Key Skills

- I can reasons for the outcome of events
- I can evaluate sources
- I can compare aspects of the past to the present

Investigate and interpret the past

- I can use sources of evidence to deduce information about the past
- I can select suitable sources of evidence for historical enquiries
- I can use sources of information to form testable hypotheses about the past
- I can seek out and analyse a wide range of evidence in order to justify claims about the past
- I can show an awareness of the concept of propaganda and how historians must understand the social context of evidence studies
- I can understand that no simple source of evidence gives the full answer to questions about the past
- I can refine lines of enquiry as appropriate

Build an overview of world history

- I can identify continuity and change in the history of the locality of the school
- I can give a broad overview of life in Britain in the periods studied
- I can compare some of the times studied with those of the other areas of interest around the world
- I can describe the social, ethnic, cultural or religious diversity of past society
- I can describe the characteristic features of the past, including ideas, beliefs, attitudes and experiences of men, women and children

Understand chronology

- I can describe the main changes in a period of history (using terms such as: social, religious, political, technological and cultural)
- I can identify periods of rapid change in history and contrast them with times of relatively little change
- I can understand the concepts of continuity and change over time, representing them, along with evidence, on a timeline
- I can use dates and terms accurately in describing events

Communicate historically

- I can use appropriate historical vocabulary to communicate, including: dates, time period, era, chronology, continuity, change, century, decade, legacy
- I can use English, maths and computing skills to a good standard in order to communicate information about the past
- I can organise my understanding of history in different ways to make sure it makes sense such as:
 - Writing
 - Drawing
 - Painting and collage
 - Drama
 - Making models
 - Making a museum display

Geography

Year 6 Key Skills

- I can use scales on a map (1:10000)
- I can use 6 figure grid references and identify features

Investigate Places

- I can collect and analyse statistics and other information in order to draw clear conclusions about locations
- I can identify and describe how the physical features affect the human activity within a location
- I can use a range of geographical resources to give detailed descriptions and opinions of the characteristic features of a location
- I can use different types of fieldwork sampling (random and systematic) to observe, measure and record the human and physical features in the local area.
- I can record the results from above in a range of ways
- I can analyse and give views on the effectiveness of different geographical representations of a location (e.g. aerial images compared with maps and topographical maps – as in London's Tube map)
- I can name and locate some of the countries and cities of the world and their identifying human and physical characteristics, including hills, mountains, rivers, key topographical features and land-use patterns; and understand how some of these aspects have changed over time
- I can name and locate the countries of North and South America and identify their main physical and human characteristics

Investigate Patterns

- I can identify and describe the geographical significance of latitude, longitude, Equator, Northern and Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, and time zones (including day and night)
- I can understand some of the reasons for geographical similarities and differences between countries
- I can describe how locations around the world are changing and explain some of the reasons for change
- I can describe geographical diversity across the world
- I can describe how countries and geographical regions are interconnected and interdependent

Communicate Geographically

- I can describe and understand key aspects of physical geography including: climate, zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes and the water cycle
- I can describe and understand key aspects of human geography including: settlements, land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water supplies
- I can use the 8 points of a compass, 4-figure grid references, symbols and a key (that uses standard ordnance survey symbols) to communicate knowledge of the UK and the world
- I can create maps of locations identifying patterns (e.g. land use, climate zones, population densities, height of land)

Art

Year 6 Key skills

All the skills from Year 3 to Year 5

Develop ideas

- I can develop and imaginatively extend ideas from starting points throughout the curriculum
- I can collect information, sketches and resources and present ideas in a sketch book
- I can use the qualities of materials to enhance ideas
- I can spot the potential in unexpected results as work progresses
- I can comment on artworks with a fluent grasp of visual language

Master techniques

Painting

- I can sketch before painting to combine line and colour
- I can create a colour palette based upon colours observed in the natural or built world
- I can use the qualities of watercolour and acrylic paints to create visually interesting pieces

- I can combine colours, tones and tints to enhance the mood of a piece
- I can use brush techniques and the qualities of paint to create texture
- I can develop a personal style of painting, drawing upon ideas from other artists

Collage

- I can mix textures (rough and smooth, plain and patterned)
- I can combine visual and tactile qualities
- I can use ceramic mosaic materials and techniques
- Sculpture
- I can show life-like qualities and real-life proportions or, if more abstract, provoke different interpretations
- I can use tools to carve and add shapes, texture and pattern
- I can combine visual and tactile qualities
- I can use frameworks (e.g. wire or moulds) to provide stability and form

Drawing

- I can use a variety of techniques to add interesting effects (e.g. reflections, shadows, direction of sunlight)
- I can use a choice of techniques to depict movement, perspective, shadows and reflections
- I can choose a style of drawing suitable for the work (e.g. realistic or impressionistic)
- I can use lines to represent movement

Print

- I can build up layers of colours
- I can create an accurate pattern, showing fine detail
- I can use a range of visual elements to reflect the purpose of the work

Textiles

- I can show precision in techniques
- I can choose from a range of stitching techniques
- I can combine previously learned techniques to create pieces

Digital media

- I can enhance digital media by editing (including sound, video, animation, still images and installation)

To take inspiration from the greats (classic and modern)

- I can give details (including own sketches) about the style of some notable artists, artisans and designers
- I can show how the work of those studied was influential in both society and to other artists
- I can create original pieces that show a range of influences and styles

Design Technology

Year 6 Key Skills

- I can use belts and pulleys to make a mechanism work
- I can understand the limitations of resources
- I can plan with time, cost and materials in consideration

Master practical skills

Food

- I can understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms)
- I can measure accurately and calculate ratios of ingredients to scale up or down from a recipe
- I can demonstrate a range of baking and cooking techniques
- I can create and refine recipes, including ingredients, methods, cooking times and temperature

Materials

- I can cut materials with precision and refine the finish with appropriate tools (e.g. sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape)
- I can show an understanding of the qualities of materials to choose appropriate tools to cut and shape (e.g. the nature of fabric may require sharper scissors than would be used to cut paper)

Textiles

- I can create objects (e.g. a cushion) that employ a seam allowance
- I can join textiles with a combination of stitching techniques (e.g. back stitch for seams and running stitch to attach decoration)
- I can use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (e.g. soft decoration for comfort on a cushion)

Electricals and electronics

- I can create circuits using electronics kits that employ a number of components (e.g. LEDs, resistors, transistors and chips)

Computing

- I can write code to control and monitor models or products

Construction

- I can develop a range of practical skills to create products (e.g. cutting, drilling and screwing, nailing, gluing, filling and sanding)

Mechanics

- I can convert rotary motion to linear using cams
- I can use innovative combinations of electronics (or computing) and mechanics in product designs

To design, make, evaluate and improve

- I can design with the user in mind, motivated by the service a product will offer (rather than simply for profit)
- I can make products through stages of prototypes making continual refinements
- I can ensure products have a high quality finish, using art skills where appropriate
- I can use prototypes, cross-sectional diagrams and computer aided designs to represent designs

To take inspiration from design throughout history

- I can combine elements of design from a range of inspirational designers throughout history, giving reasons for choices
- I can create innovative designs that improve upon existing products
- I can evaluate the design of products so as to suggest improvements to the user experience

MFL

Speaking confidently

- I can understand the main points and opinions in spoken passages
- I can give a short prepared talk that includes opinions
- I can take part in conversations to seek and give information
- I can refer to recent experiences or future plans, everyday activities or interests
- I can vary language and produce extended responses
- I can be understood with little or no difficulty

Reading fluently

- I can read and understand the main points and some of the detail in short written texts
- I can use the context of a sentence or a translation dictionary to work out the meaning of unfamiliar words
- I can read and understand the main points and opinions in written texts, including present, past or future events
- I can show confidence in reading aloud, and in using reference materials

Writing

- I can write short texts on familiar topics
- I can use knowledge of grammar
- I can enhance or change the meaning of phrases
- I can use dictionaries or glossaries to check words
- I can refer to recent experiences or future plans, as well as to everyday activities
- I can include imaginative and adventurous word choices

- I can convey meaning (although there may be some mistakes, the meaning can be understood with little or no difficulty)

Cultural Understanding

- I can give detailed accounts of the custom, history and culture of the countries and communities where the language is spoken
- I can describe, with interesting detail, some similarities and differences between countries and communities where the language is spoken and this country

PSHE

Self-Awareness / Keeping Safe and Healthy

- I can talk about what I'm good at and what I need to improve upon e.g. my strengths and areas for development
- I can explain my opinion about different subjects, including topical issues
- I can discuss different opinions and make informed decisions and choices
- I can appreciate the opinions of other people, even when I don't agree with them
- I can explain how to keep safe in different circumstances, such as at home and 'out and about'
- I can explain what to do in an emergency
- I can describe a healthy lifestyle in some detail, including the benefits of healthy eating, exercise and personal hygiene
- I can discuss the differences between medicines and harmful drugs
- I can explain what drugs are and know that all medicines are drugs, but not all drugs are medicines
- I can talk about major landmarks in my life
- I can talk about the stages in the human life cycle and describe how our bodies change as we approach puberty (Y5 and Y6)
- I can talk about me, my family, where I live and the people I meet
- I can recognise similarities and differences between myself and other people

Social skills, Empathy and Motivation

- I can talk about the factors that help me to learn or hinder my learning
- I am able to persevere, even when experiencing difficulties, and try additional and alternative approaches
- I can play and learn with others, cooperating and sharing responsibilities and tasks
- I know that people have different opinions and try to understand their points of view
- I can communicate effectively with people, listening carefully and taking turns to speak about my opinions or ask relevant questions at appropriate times
- I can listen to, respond to and interact with others
- I can work well in a group and can tell you what helps my group to work well together
- I can justify my opinions during a discussion or debate
- I can explain what bullying is and what to do if I or someone I know is being bullied
- I can describe how to resist pressure from other people who want me to do silly, unkind or dangerous things
- I can describe rules that apply in different circumstances

Skills that promote awareness of spirituality

- I can say what I think worship is and describe how different people worship
- I can talk about faith in terms of what I believe or what others believe
- I can use appropriate language and concepts to describe the spiritual dimension of life

Environmental awareness and global citizenship

- I can research and debate environmental issues in the local area and in the wider world
- I can explain how people protect or damage the local or the global environment
- I can describe the ways of life and cultures of people who live in different parts of the world
- I can use books, DVDs, newspapers and other media to explain how people may be similar or different because of their background, language, religion or colour

- I can use my knowledge of the world around me to explain the word 'stereotype' and identify when stereotypes are being used
- I can begin to describe how different parts of the world are different in terms of resources and money
- I can begin to describe how different parts of the world are linked by trade and why some people gain more from this than others
- I can talk about people and organisations who contribute to the community locally, nationally or internationally
- I can explain how decisions are made locally, nationally or internationally
- I can begin to explain how laws are made
- I can talk about some different jobs people do and perhaps the job I would like to do in the future
- I can use my knowledge of the world around me to describe how anti-social behaviour can impact on our whole community