

## Year Six Knowledge and Skills Framework 2020-2021

St. Columba's Catholic Primary School  
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### History Knowledge and Skills Objectives 2020-2021

Links to the National Curriculum:

- They should understand how our knowledge of the past is constructed from a range of sources.
- They should note connections, contrasts and trends over time.
- They should regularly address questions about change, similarity and difference.

Pupils should be taught about

- Changes in Britain from the Stone Age to the Iron Age
- Britain's settlement by Anglo-Saxons and Scots
- The Viking and Anglo-Saxon struggle for the Kingdom of England to the time of Edward the Confessor
- A local history study
- A study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066

#### **Chronological Understanding**

Can they say where a period of history fits on a timeline?

Can they place a specific event on a timeline by decade?

Can they place features of historical events and people from past societies and periods in a chronological framework?

#### **Challenge**

Do they appreciate that some ancient civilizations showed greater advancements than people who lived centuries after them?

#### **Knowledge and Interpretation**

Can they summarise the main events from a specific period in history, explaining the order in which key events happened?

Can they summarise how Britain has had a major influence on world history?

Can they summarise what Britain may have learnt from other countries and civilizations through time gone by and more recently?

Can they describe features of historical events and people from past societies and periods they have studied?

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Can they recognise and describe differences and similarities/ changes and continuity between different periods of history?
Do they have a good understanding as to how crime and punishment has changed over the years?
<b>Challenge</b>
Can they suggest relationships between causes in history?
Can they appreciate how Britain once had an Empire and how that has helped or hindered our relationship with a number of countries today?
<b>Historical Enquiry</b>
Can they look at two different versions and say how the author may be attempting to persuade or give a specific viewpoint?
Can they identify and explain their understanding of propaganda?
Can they describe a key event from Britain's past using a range of evidence from different sources?
<b>Challenge</b>
Can they suggest why there may be different interpretations of events?
Can they suggest why certain events, people and changes might be seen as more significant than others?
Can they pose and answer their own historical questions?

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### Geography Knowledge and Skills Objectives 2020-2021

Links to the National Curriculum

- 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
- Describe and understand key aspects of physical geography, including: rivers and mountains
- Describe and understand key aspects of 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
- 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.

#### Geographical Enquiry

Can they confidently explain scale and use maps with a range of scales?

Can they choose the best way to collect information needed and decide the most appropriate units of measure?

Can they make careful measurements and use the data?

Can they use OS maps to answer questions?

Can they use maps, aerial photos, plans and web resources to describe what a locality might be like?

#### Challenge

Can they define geographical questions to guide their research?

Can they use a range of self selected resources to answer questions?

#### Physical Geography

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Can they give extended descriptions of the physical features of different places around the world?
Can they describe how some places are similar and others are different in relation to their physical features?
Can they accurately use a 4 figure grid reference?
Can they create sketch maps when carrying out a field study?
<b>Challenge</b>
Can they plan a journey to another part of the world which takes account of time zones?
Do they understand the term sustainable development? Can they use it in different contexts?
<b>Human Geography</b>
Can they give an extended description of the human features of different places around the world?
Can they map land use with their own criteria?
Can they describe how some places are similar and others are different in relation to their human features?
<b>Challenge</b>
Can they explain how human activity has caused an environment to change?
Can they analyse population data on two settlements and report on findings and questions raised?
<b>Geographical Knowledge</b>
Can they recognise key symbols used on ordnance survey maps?
Can they name the largest desert in the world?
Can they identify and name the Tropics of Cancer and Capricorn as well as the Arctic and Antarctic circles?
Can they explain how the time zones work?
<b>Challenge</b>
Can they name and locate the main canals that link different continents?
Can they name the main lines of latitude and meridian of longitude?

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### Science Knowledge and Skills Objectives 2020-2021

#### Working Scientifically

Can they explore different ways to test an idea, choose the best way, and give reasons?

Can they vary one factor whilst keeping the others the same in an experiment? Can they explain why they do this?

Can they plan and carry out an investigation by controlling variables fairly and accurately?

Can they make a prediction with reasons?

Can they use information to help make a prediction?

Can they use test results to make further predictions and set up further comparative tests?

Can they explain, in simple terms, a scientific idea and what evidence supports it?

Can they present a report of their findings through writing, display and presentation?

Can they explain why they have chosen specific equipment? (incl ICT based equipment)

Can they decide which units of measurement they need to use?

Can they explain why a measurement needs to be repeated?

Can they record their measurements in different ways? (incl bar charts, tables and line graphs)

Can they take measurements using a range of scientific equipment with increasing accuracy and precision?

Can they find a pattern from their data and explain what it shows?

Can they use a graph to answer scientific questions?

Can they link what they have found out to other science?

Can they suggest how to improve their work and say why they think this?

Can they record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models?

Can they report findings from investigations through written explanations and conclusions?

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Can they identify scientific evidence that has been used to support to refute ideas or arguments?
Can they report and present 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?
<b>Challenge</b>
Can they choose the best way to answer a question?
Can they use information from different sources to answer a question and plan an investigation?
Can they make a prediction which links with other scientific knowledge?
Can they identify the key factors when planning a fair test?
Can they explain how a scientist has used their scientific understanding plus good ideas to have a breakthrough?
Can they plan in advance which equipment they will need and use it well?
Can they make precise measurements?
Can they collect information in different ways?
Can they record their measurements and observations systematically?
Can they explain qualitative and quantitative data?
Can they draw conclusions from their work?
Can they link their conclusions to other scientific knowledge?
Can they explain how they could improve their way of working?
<b>Animals inc. Humans</b>
Can they identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood?
Can they recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function?
Can they describe the ways in which nutrients and water and transported within animals, including humans?
<b>Challenge</b>
Can they explore the work of medical pioneers, for example, William Harvey and Galen and recognise how much we have learnt about our bodies?
Can they compare the organ systems of humans to other animals?
Can they make a diagram of the human body and explain how different parts work and depend on one another?
Can they name the major organs in the human body?
Can they locate the major human organs?
Can they make a diagram that outlines the main parts of a body?
<b>Living Things and their Habitats</b>

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Can they describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences including microorganisms, plants and animals?
Can they give reasons for classifying plants and animals based on specific characteristics?
<b>Challenge</b>
Can they explain why classification is important?
Can they readily group animals into reptiles, fish, amphibians, birds and mammals?
Can they sub divide their original groupings and explain their divisions?
Can they group animals into vertebrates and invertebrates?
Can they find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification?
<b>Evolution and Inheritance</b>
Can they recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago?
Can they recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents?
Can they give reasons why offspring are not identical to each other or to their parents?
Can they explain the process of evolution and describe the evidence for this?
Can they identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution?
<b>Challenge</b>
Can they talk about the work of Charles Darwin, Mary Anning and Alfred Wallace?
Can they explain how some living things adapt to survive in extreme conditions?
Can they analyse the advantages and disadvantages of specific adaptations, such as being on two rather than four feet?
Can they begin to understand what is meant by DNA?
<b>Electricity</b>
Can they identify and name the basic parts of a simple electric series circuit? (cells, wires, bulbs, switches, buzzers)
Can they compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers, the on/off position of switches?
Can they use recognised symbols when representing a simple circuit in a diagram?
<b>Challenge</b>
Can they make their own traffic light system or something similar?
Can they explain the danger of short circuits?

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Can they explain what a fuse is?
Can they explain how to make changes in a circuit?
Can they explain the impact of changes in a circuit?
Can they explain the effect of changing the voltage of a battery?
<b>Light</b>
Can they recognise that light appears to travel in straight lines?
Can they 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?
Can they 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?
Can they use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them?
<b>Challenge</b>
Can they explain how different colours of light can be created?
Can they use and explain how simple optical instruments work? (periscope, telescope, binoculars, mirror, magnifying glass, Newton's first reflecting telescope)
Can they explore a range of phenomena, including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters.



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### Art Knowledge and Skills Objectives 2020-2021

Links to the National Curriculum

Pupils should be taught to develop their techniques, including their control and their use of materials, with experimentation and an increasing awareness of different kinds of art, craft and design.

Pupils should be taught:

- to create sketch books to record their observations and use them to review and revisit ideas
- 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)
- about the greatest artists, architects and designers in history

#### Drawing

Do their sketches communicate emotions and a sense of self with accuracy and imagination?

Can they explain why they have combined different tools to create their drawings?

Can they explain why they have chosen specific drawing techniques?

#### Painting

Can they explain what their own style is?

Can they use a wide range of techniques in their work?

Can they explain why they have chosen specific painting techniques?

#### Printing

Can they overprint using different colours?

Do they look very carefully at the methods they use and make decisions about the effectiveness of their printing methods?

#### Sketch Books

Do their sketch books contain detailed notes, and quotes explaining about items?

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Do they compare their methods to those of others and keep notes in their sketch books?
Do they combine graphics and text based research of commercial design, for example magazines etc., to influence the layout of their sketch books.
Do they adapt and refine their work to reflect its meaning and purpose, keeping notes and annotations in their sketch books?
<b>3D/Textiles</b>
Can they create models on a range of scales?
Can they create work which is open to interpretation by the audience?
Can they include both visual and tactile elements in their work?
<b>Collage</b>
Can they justify the materials they have chosen?
Can they combine pattern, tone and shape?
<b>Use of IT</b>
Do they use software packages to create pieces of digital art to design.
Can they create a piece of art which can be used as part of a wider presentation?
<b>Knowledge</b>
Can they make a record about the styles and qualities in their work?
Can they say what their work is influenced by?
Can they include technical aspects in their work, e.g. architectural design?

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### DT Knowledge and Skills Objectives 2020-2021

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. When designing and making, pupils should be taught to:

**Design**

**Make**

**Evaluate**

**Technical knowledge**

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.

Pupils should be taught to:

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

#### Developing, planning and communicating ideas

Can they use a range of information to inform their design?

Can they use market research to inform plans?

Can they work within constraints?

Can they follow and refine their plan if necessary?

Can they justify their plan to someone else?

Do they consider culture and society in their designs?

#### Working with tools, equipment, materials and components to make quality products

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Can they use tools and materials precisely?
Do they change the way they are working if needed?
<b>Evaluating processes and products</b>
How well do they test and evaluate their final product?
Is it fit for purpose?
What would improve it?
Would different resources have improved their product?
Would they need more or different information to make it even better?
Does their product meet all design criteria?
Did they consider the use of the product when selecting materials?
<b>Cooking and nutrition</b>
Can they explain how their product should be stored with reasons?
Can they set out to grow their own products with a view to making a salad, taking account of time required to grow different foods?
<b>Textiles</b>
Have they thought about how their product could be sold?
Have they given considered thought about what would improve their product even more?
<b>Electrical and mechanical components</b>
Can they use different kinds of circuit in their product?
Can they think of ways in which adding a circuit would improve their product?
<b>Stiff and flexible sheet materials</b>
Can they justify why they selected specific materials?
How have they ensured that their work is precise and accurate?
Can they hide joints so as to improve the look of their product?
<b>Mouldable materials</b>
Can they justify why the chosen material was the best for the task?
Can they justify design in relation to the audience?

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### Computing Knowledge and Skills Objectives 2020-2021

Links to the National Curriculum

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

#### Algorithms and Programs

Can they explain how an algorithm works?

Can they detect errors in a program and correct them?

Can they use an ICT program to control a number of events for an external device?

Can they use ICT to measure sound, light or temperature using sensors and interpret the data?

Can they explore 'what if' questions by planning different scenarios for controlled devices?

Can they use input from sensors to trigger events?

Can they check and refine a series of instructions?

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<b>Data Retrieving and Organising</b>
Can they explore the menu options and experiment with images (colour effects, options, snap to grid, grid settings etc.)?
Can they add special effects to alter the appearance of a graphic?
Can they 'save as' gif or i peg. wherever possible to make the file size smaller (for emailing or downloading)?
Can they make an information poster using their graphics skills to good effect?
<b>Communicating</b>
Can they conduct a video chat with people in another country or organisation?
<b>Using the Internet</b>
Can they contribute to discussions online?
Can they use a search engine using keyword searches?
Can they use complex searches using such as '+ 'OR' "Find the phrase in inverted commas"?
<b>Databases</b>
Can they collect live data using data logging equipment?
Can they identify data error, patterns and sequences?
Can they use the formulae bar to explore mathematical scenarios?
Can they create their own database and present information from it?
<b>Presentation</b>
Can they present a film for a specific audience and then adapt same film for a different audience?
Can they create a sophisticated multimedia presentation?
Can they confidently choose the correct page set up option when creating a document?
Can they confidently use text formatting tools, including heading and body text?
Can they use the 'hanging indent' tool to help format work where appropriate (e.g. a play script)?
<b>Challenge</b>
Can they incorporate graphics where appropriate, using the most effective text wrapping formats?
Can they conduct a video chat with more than one person at a time?
Can they compare the information provided on two tabbed websites looking for bias and perspective?