

Year Five Knowledge and Skills Framework 2020-2021

St. Columba's Catholic Primary School
Every Person is Precious to God



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 use dates and historical language in their work?

Can they draw a timeline with different time periods outlined which show different information, such as, periods of history, when famous people lived, etc.?

Can they use their mathematical skills to work out exact time scales and differences as need be?

Challenge

Can they create timelines which outline the development of specific features, such as medicine; weaponry; transport, etc.

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 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?
Can they begin to appreciate that how we make decisions has been through a Parliament for some time?
Do they appreciate that significant events in history have helped shape the country we have today?
Challenge
Can they suggest relationships between causes in history?
Can they trace the main events that define Britain's journey from a mono to a multi-cultural society?
Historical Enquiry
Can they test out a hypothesis in order to answer a question?
Do they appreciate how historical artefacts have helped us understand more about British lives in the present and past?
Challenge
Can they research the life of one person who has had an influence on the way Great Britain is divided into four separate countries?

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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 carry out a survey to discover features of cities and villages?

Can they find the same place on a globe and in an atlas?

Can they label the same features on an aerial photograph as on a map?

Can they plan a journey to a place in England?

Can they accurately measure and collect information(e.g. rainfall, temperature, wind speed, noise levels etc.)?

Challenge

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Can they give accurate measurements between 2 given places within the UK?
Physical Geography
Can they describe the main features of a well known city?
Can they explain how a location fits into its wider geographical location; with reference to physical features?
Can they describe the main physical differences between cities and villages?
Can they use appropriate symbols to represent different physical features on a map?
Challenge - Can they explain how a locality has changed over time with reference to physical features?
Human Geography
Can they explain why people are attracted to live in cities?
Can they explain why people may choose to live in a village rather than a city?
Can they explain how a locality has changed over time with reference to human features?
Can they find different views about an environmental issue? What is their view?
Can they suggest different ways that a locality could be changed and improved?
Challenge
Can they report on ways in which humans have both improved and damaged the environment?
Geographical Knowledge
Can they locate the Tropic of Cancer and the Tropic of Capricorn?
Do they know the difference between the British Isles, Great Britain and UK?
Can they name up to six cities in the UK and locate them on a map?
Can they locate and name some of the main islands that surround the UK?
Can they locate and name the main countries in South America on a world map and atlas?
Can they name the areas of origin of the main ethnic groups in the UK & in their school?
Challenge
Can they name the counties that make up the home counties of London?
Can they name some of the main towns and cities in Yorkshire and Lancashire?

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Science Knowledge and Skills Objectives 2020-2021

Working Scientifically

Can they plan and carry out a scientific enquiry to answer questions, including recognising and controlling variables where necessary? •

Can they make a prediction with reasons?

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

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

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

Can they take repeat readings when appropriate?

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

Can they report and present findings from enquiries through written explanations and conclusions?

Can they use a graph to answer scientific questions?

Challenge

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 use information to help make a prediction?

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

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

Can they explain why a measurement needs to be repeated?

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

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?

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Animals inc. Humans
Can they describe the changes as humans develop to old age?
Challenge
Can they create a timeline to indicate stages of growth in certain animals, such as frogs and butterflies?
Can they describe the changes experienced in puberty?
Can they draw a timeline to indicate stages in the growth and development of humans?
Living Things and their Habitats
Can they describe the differences in the life cycles of a mammal, an amphibians, an insects and a bird?
Can they describe the life cycles of common plants?
Can they explore the work of well know naturalists and animal behaviourists? (David Attenborough and Jane Goodall)
Challenge
Can they observe their local environment and draw conclusions about life-cycles, e.g. plants in the vegetable garden or flower border?
Can they compare the life cycles of plants and animals in their local environment with the life cycles of those around the world, e.g. rainforests?
Properties and Changes to Materials
Can they compare and group together everyday materials on the basis of their properties, including hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets?
Can they explain how some materials dissolve in liquid to form a solution?
Can they describe how to recover a substance from a solution?
Can they use their knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving, evaporating?
Can they give reasons, based on evidence for comparative and fair tests for the particular uses of everyday materials, including metals wood and plastic?
Can they describe changes using scientific words? (evaporation, condensation)
Can they demonstrate that dissolving, mixing and changes of state are reversible changes?
Can they 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?
Can they use the terms 'reversible' and 'irreversible'?
Challenge
Can they describe methods for separating mixtures? (filtration, distillation)
Can they work out which materials are most effective for keeping us warm or for keeping something cold?
Can they use their knowledge of materials to suggest ways to classify? (solids, liquids, gases)

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Can they explore changes that are difficult to reverse, e.g. burning, rusting and reactions such as vinegar with bicarbonate of soda?
Can they explore the work of chemists who created new materials, e.g. Spencer Silver (glue on sticky notes) or Ruth Benerito (wrinkle free cotton)?
Earth and Space
Can they identify and explain the movement of the Earth and other planets relative to the sun in the solar system?
Can they explain how seasons and the associated weather is created?
Can they describe and explain the movement of the Moon relative to the Earth?
Can they describe the sun, earth and moon as approximately spherical bodies?
Can they use the idea of the earth's rotation to explain day and night and the apparent movement of the sun across the sky?
Challenge
Can they compare the time of day at different places on the earth?
Can they create shadow clocks?
Can they begin to understand how older civilizations used the sun to create astronomical clocks, e.g. Stonehenge?
Can they explore the work of some scientists? (Ptolemy, Alhazen, Copernicus)
Forces
Can they explain that unsupported objects fall towards the earth because of the force of gravity acting between the earth and the falling object?
Can they identify the effects of air resistance, water resistance and friction that act between moving surfaces?
Can they recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect?
Challenge
Can they describe and explain how motion is affected by forces? (including gravitational attractions, magnetic attraction and friction)
Can they design very effective parachutes?
Can they work out how water can cause resistance to floating objects?
Can they explore how scientists, such as Galileo Galilei and Isaac Newton helped to develop the theory of gravitation?

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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

Can they identify and draw simple objects, and use marks and lines to produce texture?

Do they successfully use shading to create mood and feeling?

Can they organise line, tone, shape and colour to represent figures and forms in movement?

Can they show reflections?

Can they explain why they have chosen specific materials to draw with?

Painting

Can they create a range of moods in their paintings?

Can they express their emotions accurately through their painting and sketches?

Printing

Can they print using a number of colours?

Can they create an accurate print design that meets a given criteria?

Can they print onto different materials?

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Sketch Books
Do they keep notes in their sketch books as to how they might develop their work further?
Do they use their sketch books to compare and discuss ideas with others?
3D/Textiles
Do they experiment with and combine materials and processes to design and make 3D form?
Can they sculpt clay and other mouldable materials?
Can they use textile and sewing skills as part of a project, e.g. hanging, textile book, etc.? This could include running stitch, cross stitch, backstitch, appliqué and/or embroidery.
Collage
Can they use ceramic mosaic to produce a piece of art?
Can they combine visual and tactile qualities to express mood and emotion?
Use of IT
Can they create a piece of art work which includes the integration of digital images they have taken?
Can they combine graphics and text based on their research?
Can they scan images and take digital photos, and use software to alter them, adapt them and create work with meaning?
Can they create digital images with animation, video and sound to communicate their ideas?
Knowledge
Can they experiment with different styles which artists have used?
Do they learn about the work of others by looking at their work in books, the Internet, visits to galleries and other sources of information?

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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 come up with a range of ideas after they have collected information?

Do they take a user's view into account when designing?

Can they produce a detailed step-by-step plan?

Can they suggest some alternative plans and say what the good points and drawbacks are about each?

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

Can they explain why their finished product is going to be of good quality?

Can they explain how their product will appeal to the audience?

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Can they use a range of tools and equipment expertly?
Do they persevere through different stages of the making process?
Evaluating processes and products
Do they keep checking that their design is the best it can be?
Do they check whether anything could be improved?
Can they evaluate appearance and function against the original criteria?
Cooking and nutrition
Can they describe what they do to be both hygienic and safe?
How have they presented their product well?
Textiles
Do they think what the user would want when choosing textiles?
How have they made their product attractive and strong?
Can they make up a prototype first?
Can they use a range of joining techniques?
Electrical and mechanical components
Can they incorporate a switch into their product?
Can they refine their product after testing it?
Can they incorporate hydraulics and pneumatics?
Stiff and flexible sheet materials
Are their measurements accurate enough to ensure that everything is precise?
How have they ensured that their product is strong and fit for purpose?
Mouldable materials
Are they motivated enough to refine and further improve their product using mouldable materials?

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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 combine sequences of instructions and procedures to turn devices on or off?

Do they understand input and output?

Can they use an ICT program to control an external device that is electrical and/or mechanical?

Can they use ICT to measure sound or light or temperature using sensors?

Can they explore 'What is' questions by playing adventure or quest games?

Can they write programs that have sequences and repetitions?

Data Retrieving and Organising

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Can they listen to streaming audio such as online radio?
Can they download and listen to podcasts?
Can they produce and upload a podcast?
Can they manipulate sounds using Audacity?
Can they select music from open sources and incorporate it into multimedia presentations?
Can they work on simple film editing?
Communicating
Can they use instant messaging to communicate with class members?
Can they conduct a video chat with someone elsewhere in the school or in another school?
Using the Internet
Can they use a search engine using keyword searches?
Can they compare the results of different searches?
Can they decide which sections are appropriate to copy and paste from at least two web pages?
Can they save stored information following simple lines of enquiry?
Can they download a document and save it to the computer?
Databases
Can they create a formula in a spreadsheet and then check for accuracy and plausibility?
Can they search databases for information using symbols such as = > or
Can they create databases planning the fields, rows and columns?
Can they create graphs and tables to be copied and pasted into other documents?
Presentation
Can they use a range of presentation applications?
Do they consider audience when editing a simple film?
Do they know how to prepare and then present a simple film?
Can they use ICT to record sounds and capture both still and video images?
Can they make a home page for a website that contains links to other pages?
Can they capture sounds, images and video?
Can they use the word count tool to check the length of a document?
Can they use bullets and numbering tools?

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Challenge
Can they make a multimedia presentation that contains: sound; animation; video and buttons to navigate?
Can they save an image document as a gif or i peg. file format using the 'save as' command?
Can they make an information poster using graphics skills to good effect?