

# St Thomas of Canterbury Catholic Primary School

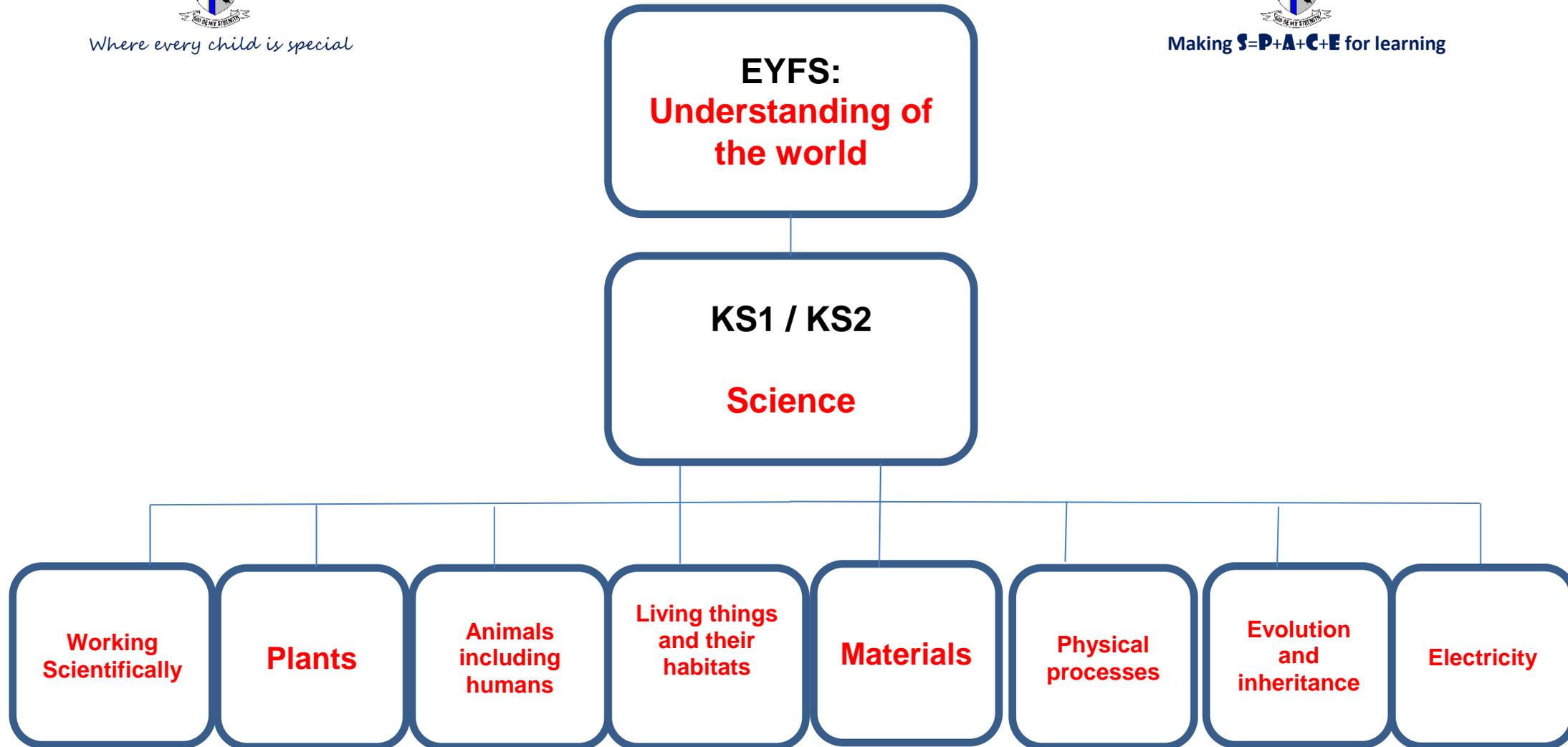
## Scheme of Work **Science**



*Where every child is special*



Making **S=P+A+C+E** for learning



# Working Scientifically

## EYFS

### Skills:

To make simple observations. Ask questions. Suggest answers to questions and talk about what they see. To explore the environment.

## Year 1

### Skills:

Ask simple questions and recognise they can be answered in different ways. Make observations and use simple equipment. Perform simple tests. Identify and classify. Use their observations and ideas to suggest answers to questions. Gather and record data to help in answering questions.

## Year 2

### Skills:

Ask simple questions and recognise they can be answered in different ways. Observe closely, using simple equipment. Perform simple tests. Identify and classify. Use their observations and ideas to suggest answers to questions. Gather and record data to help in answering questions.

## Year 3

### Skills:

Ask relevant questions and use scientific enquiry to answer them. Set up simple fair tests. Make careful observations and measurements. Gather, record and present data in a variety of ways. Record findings using drawings, labelled diagrams, keys, bar charts and tables. Draw simple conclusions and suggest improvements. Use straightforward evidence to answer questions.

## Year 4

### Skills:

Use different scientific enquiry to answer them. Set up simple fair tests. Make careful observations and measurements. Gather, record, classify and present data in a variety of ways. Record findings using drawings, labelled diagrams, keys, bar charts and tables. Draw simple conclusions and suggest improvements. Use straightforward evidence to answer questions or support findings.

## Year 5

### Skills:

Planning different types of scientific enquiries. Taking measurements with accuracy. Recording data in tables, diagrams, bar and line graphs. Using test results to make predictions to set up further tests. Presenting findings on conclusions, causal relationships and degree of trust in results. Identifying scientific evidence to support or refute ideas or arguments.

## Year 6

### Skills:

Planning different types of scientific enquiries. Taking measurements with precision. Recording data in scatter graphs, bar and line graphs. Using test results to make predictions to set up further comparative fair tests. Presenting findings on conclusions, causal relationships and degree of trust in results. Identifying scientific evidence to support or refute ideas or arguments.

# Plants

## EYFS

**Content:**  
To make observations of plants.

## Year 1

**Content:**  
Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.

## Year 2

**Content:**  
Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

## Year 3

**Content:**  
Identify and describe functions of parts of flowering plants. Explore the requirements of plants for life and growth and how they vary from plant to plant. Investigate the way water is transported within plants. Explore the part flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

## Year 4

## Year 5

## Year 6

## Animals including humans

### EYFS

**Content:**

To know about similarities and differences between themselves and others.

### Year 1

**Content:**

Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals. Identify, name, draw and label the basic parts of the human body and say which part is associated with each sense.

### Year 2

**Content:**

Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals for survival. Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

### Year 3

**Content:**

Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.

### Year 4

**Content:**

Construct and interpret a variety of food chains, identifying producers, predators and prey. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.

### Year 5

**Content:**

Describe the changes as humans develop to old age.

### Year 6

**Content:**

Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise and drugs on their body function. Describe the ways in which nutrients and water are transported within animals, including humans.

# Living things and their habitat

## EYFS

**Content:**

To make observations of animals. To talk about changes and explain why some things occur.

## Year 1

## Year 2

**Content:**

Explore and compare the difference between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats. Describe how animals obtain their food from plants and other animals, using simple food chains.

## Year 3

## Year 4

**Content:**

Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things.

## Year 5

**Content:**

Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.

## Year 6

**Content:**

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.

# Materials

## EYFS

**Content:**  
To explore and observe everyday materials. To know about similarities and differences between materials. To talk about changes and explain why some things occur.

## Year 1

**Content:**  
Distinguish between an object and the material form which it is made. Identify and name a variety of everyday materials. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their physical properties.

## Year 2

**Content:**  
Identify and compare the suitability of everyday materials for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

## Year 3

**Content:**  
Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter.

## Year 4

**Content:**  
Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

## Year 5

**Content:**  
Compare and group together everyday materials on the basis of their properties, including hardness, solubility, transparency, conductivity and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons for uses of everyday materials. Demonstrate reversible changes. Explain that some changes result in the formation of new materials

## Year 6

# Physical processes

EYFS

Year 1/2

Year 3

Year 3

Year 4

Year 5

Year 6

**Content:**

Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials but not others. Compare and group a variety of materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Describe magnets as having two poles. Predict whether two magnets will attract or repel, depending on which poles are facing.

**Content:**

Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a source is blocked by a solid object. Find patterns in the way that the size of shadows change

**Content:**

Identify how sounds are made, associating them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between pitch of a sound and features of the object that produced it. Recognise that sounds get fainter as the distance from the sound source increases.

**Content:**

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 allow a smaller force to have a greater effect.

**Content:**

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 a light source to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as objects that cast them.

**Seasonal change**

**Earth and Space**

**Evolution and Inheritance**

**EYFS**

**Year 1**

**Year 2**

**Year 3**

**Year 4**

**Year 5**

**Year 6**

**Content:**  
Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.

**Content:**  
Describe the movement of the Earth, and other planets, relative to the Sun in our solar system. Describe the movement of the Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

**Content:**  
Recognise that living things have changed over time and that fossils provide information about living things that inherited 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.

# Electricity

EYFS

Year 1

Year 2

Year 3

Year 4

Year 5

Year 6

**Content:**

Identify common appliances that run on electricity. Construct a simple series circuit, identifying and naming its basic parts. Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights. Recognise some common conductors and insulators, and associate metals with being good conductors.

**Content:**

Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a circuit. Compare and give reasons for variations in how components function, including brightness of bulbs, loudness of buzzers and on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram.