

Harrow Gate Primary Academy **Geography** Big Ideas



Weather



Local Study



Volcanoes and Earthquakes



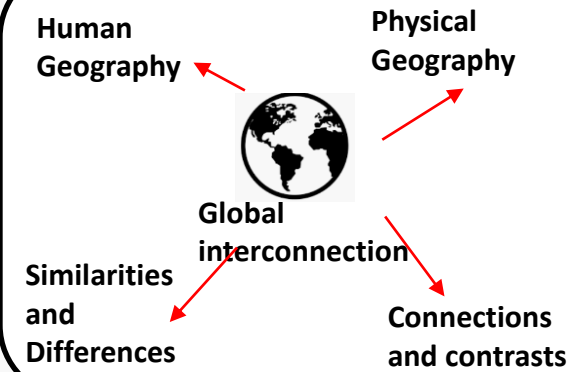
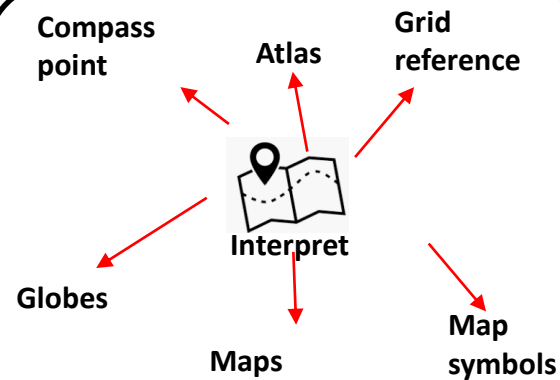
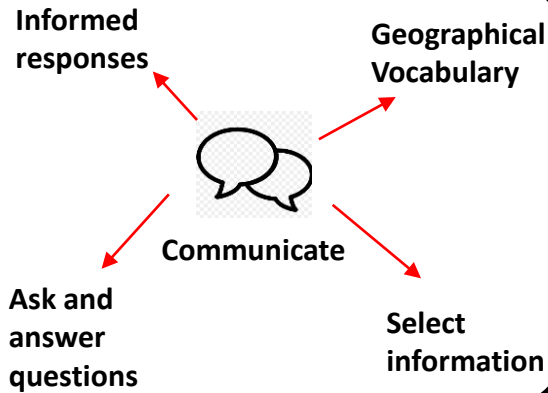
Rivers and Seas



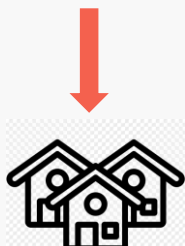
Land Use



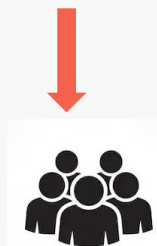
Biomes



Locate



Settlement



Society



Economy



Environment

Focus

INTENT:

Geography education is fully inclusive to every child. Our aims are to fulfil the requirements of the National Curriculum for Geography; providing a broad, balanced and differentiated curriculum; ensuring the progressive development of geographical concepts, knowledge and skills; and for the children to develop a love for geography. We aim to 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 will 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. (The 2014 Primary National Curriculum in England)

The aims of teaching geography in our school are:

- To inspire pupils' curiosity to discover more about the world
- To enable children to know about the location of the world's continents, countries, cities, seas and oceans.
- To develop in children the skills of interpreting a range of sources of geographical information, including maps, diagrams, globes, aerial photographs and Geographical Information Systems (GIS).
- To help children understand how the human and physical features of a place shapes its location and can change over time.
- To provide opportunities to study mathematics across the curriculum through geography lessons



Reception

How is Africa different to the UK?

- Environment
- Find UK / Africa on a map
- Size comparison
- Animals
- Weather
- Colours used on a map (blue for sea / ocean)

What is Britain's landscape?

- Name 4 countries of Britain: England / Ireland / Scotland / Wales
- Physical features
- 4 seasons and Weather

Nursery

Where I live

- England map
- Stockton on Tees
- Seasons
- Weather

What I might see in a forest.

- Environments
- Caring for the environment
- Forest features
- Find England on a map
- Woods on a simple map

Year 2

Similarities and differences between Stockton on Tees and Cairo.

- Human and Physical geography
- Capital cities of UK
- 4 seas around UK
- Local river – Tees
- Egypt river – Nile
- Egypt capital city
- Maps and globes
- Atlas

What is the weather like around the world?

- Continents
- Oceans
- Equator
- North pole
- South pole
- Weather and affects

Year 5

How is the UK economy driven by land use?

- Land use
- 6 Types of land use
- Settlement
- County
- City
- Counties of England
- Major cities of UK
- UK economic activity
- OS map symbols for Land Use
- 6 figure grid reference

The UK and North America: similarities and differences

- Climate Zones
- Biomes
- Vegetation regions
- UK geographical facts
- North America Geographical facts
- 6 figure grid reference

How have rivers and seas influenced where we live?

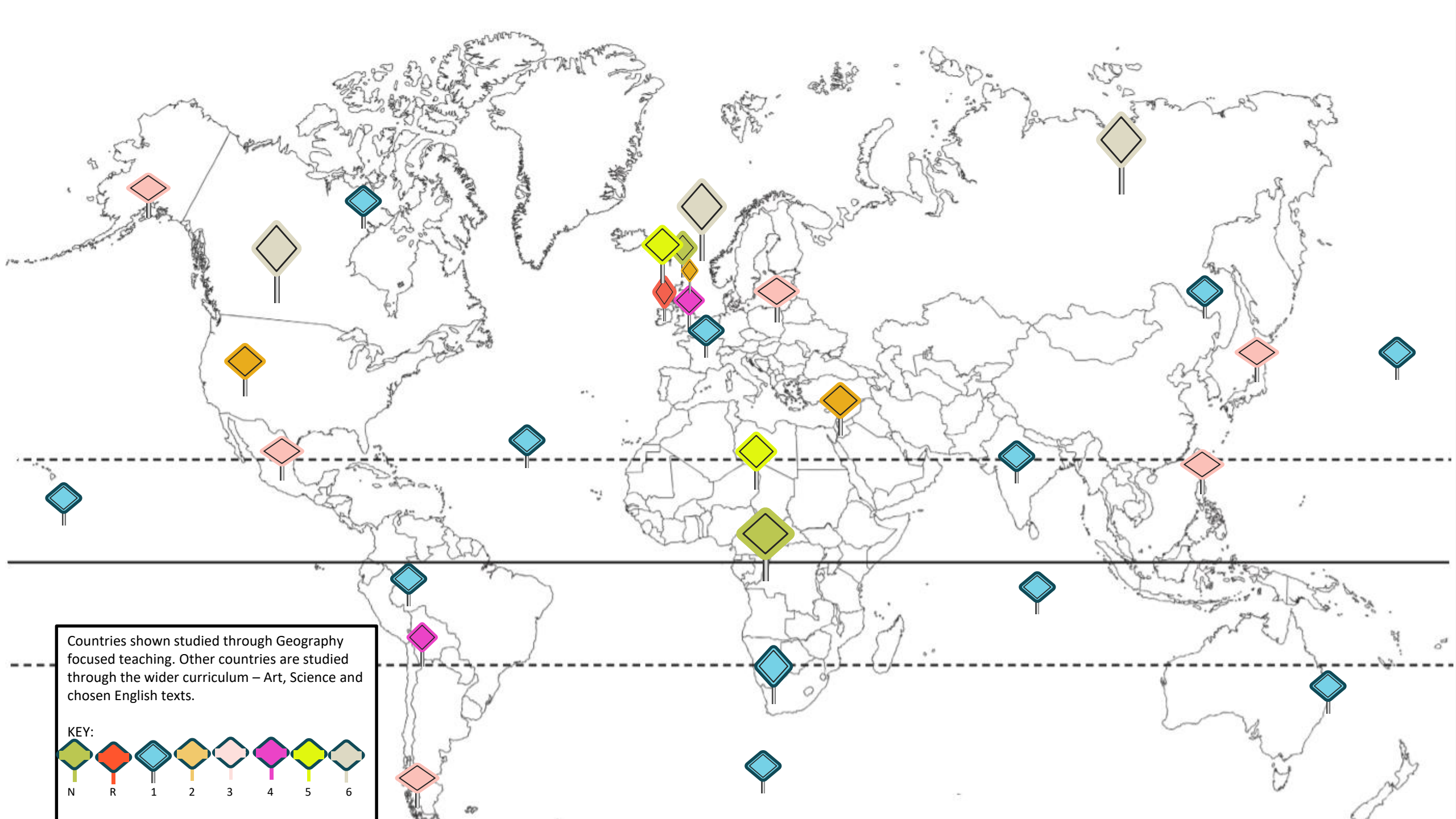
- Seas around UK
- Significant trade routes in and out of UK.
- Significant rivers in the UK
- Definition of River
- Journey of a river
- Water cycle
- Economic effects of a river
- Erosion
- 4 figure grid reference

Year 4

Year 3

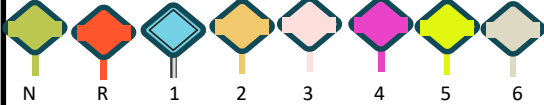
How do volcanoes and earthquakes affect peoples lives?

- Volcano definition
- Volcano features / vocab
- Earthquake definition
- Tectonic plates
- The Ring of Fire – on a map
- Volcanos in Italy, Philippines, Japan and Mexico
- 4 figure grid references
- Map symbols

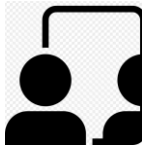


Countries shown studied through Geography focused teaching. Other countries are studied through the wider curriculum – Art, Science and chosen English texts.

KEY:



Harrow Gate Primary Academy **History** Big Ideas



Living history



Local Study



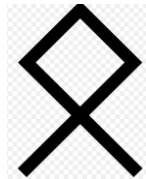
Explorers



Stone Age



Roman Britain



Anglo Saxon
Britain



Vikings



Henry VIII



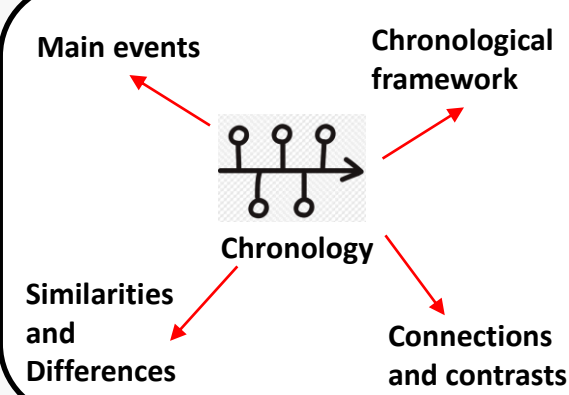
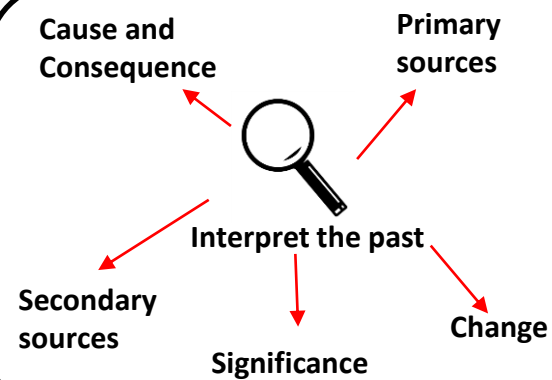
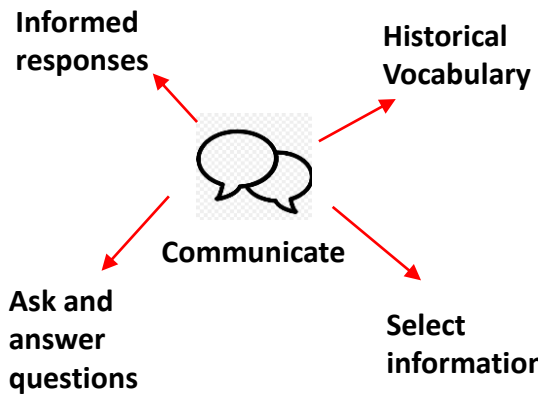
Victorian Britain



Ancient Egypt



WWI and WWII



Locate



Settlement



Society



Economy

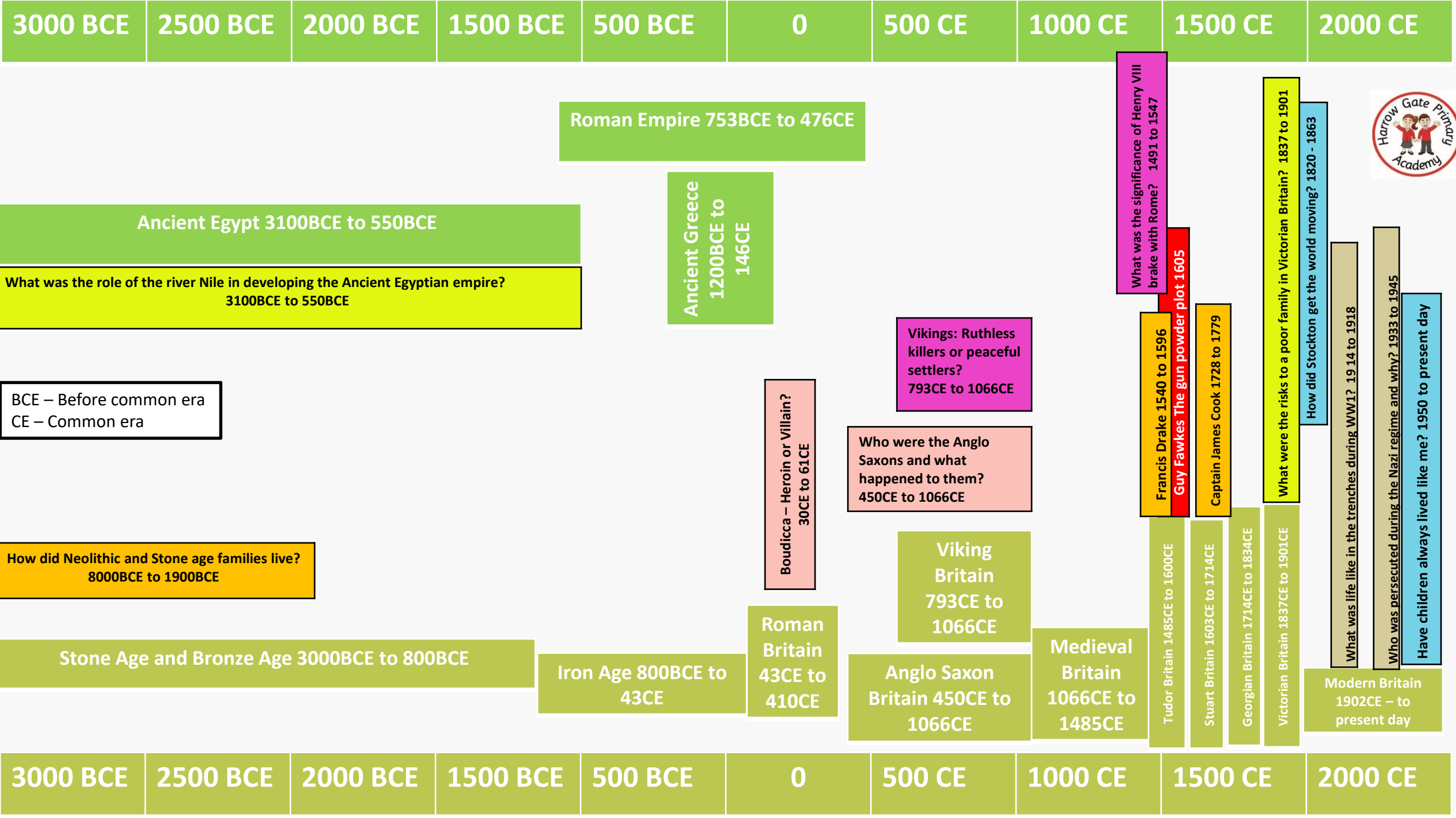


Belief



Conflict / Battle / War

Focus





History at Harrow Gate Primary Academy

INTENT:

History intends to prepare each student for their next phase of education whilst at the same time giving all students a broad and balanced view of the History of Britain and other societies and epochs. In this, students will develop a well-rounded knowledge of the past and its events, with intention to improve every students' cultural capital, understanding of the world around them and their own heritage. History at Harrow Gate aims to be ambitious, and motivating. Ambitious in our coverage of History and thorough teaching of Historical skills. Motivating, through engaging activities, trips and visitors that give all students an opportunity to question the past.

At Harrow Gate Primary School, we have designed our History curriculum with the intent that our children will:

Become increasingly critical and analytical thinkers

Possess a secure understanding of the chronology of the British Isles and other important periods of History

To discover links and connections to the History they learn and the wider community and locality

Further their knowledge and explanations of change and continuity over time with regards to the history of the British Isles and other societies and epochs

Differentiate between source types and explain how interpretations in History may differ

Draw on similarities and differences within given time frames and across previously taught History

Enquire into Historical themed questions and form their own opinions and interpretation of the past

Reception

Nursery

Year 2

Year 1

Events beyond living memory that are significant nationally or globally

Who was the most significant explorer, Francis Drake or James Cook? (Autumn 1)

Use a chronological framework – SIMPLE TIMELINE
Identify ways in which we could find out about the past.
Use a given historical account / story can identify **similarities** and **differences** between now and then

Francis Drake	James Cook
Career	Career
Privateer or Pirate?	Expeditions
Around the world	Ships
Discoveries	Discoveries



Changes in Britain from the Stone Age to the Iron Age

How did Neolithic families live? (Summer 2)

Use a chronological framework – SIMPLE TIMELINE
Identify ways in which we could find out about the past.
Use a given historical account / story can identify similarities and differences between now and then

Stone Age

Palaeolithic Period

Mesolithic Period

Neolithic Period

Tools

Settlement



Local Study:

How did Stockton get people moving? (Summer 2)

Using a chronological framework (NOT a date timeline)

Begin to identify how they are the **same** and **different** to given historical
Stockton – Darlington Railway
Steam locomotives
George Stephenson
The Rocket



Why do we celebrate Bonfire night?

British History / London and parliament
Simple time line of events
Religion
King James Guy Fawkes
Recall important narrative
Traditions



Who am I?



Who am I?



Why do we celebrate Bonfire night?

British History
Simple time line of events
Religion
King James
Recall important narrative



Living history

Have children always lived like me? (Autumn 1)

Using a chronological framework (NOT a date timeline)
Begin to identify how they are the **same** and **different** to given historical subject

Food
Stockton History
School
Toys



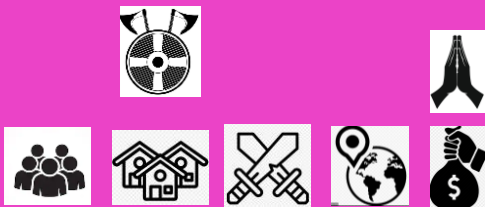
Year 4

Vikings: Ruthless killers or peaceful settlers? (Autumn 1)

Use dates and terms related to the passing of time
Look for links and affects in time studied **connections**
Offer a reasonable explanation for events
Recognise the **significance** of a historical event on future life.

Complex terms : BCE / CE

Viking timeline
Raiders from the north
Lindisfarne
Trade
Invasion
Danelaw
Laws
Society
Legacy



What was the significance of Henry VIII brake with Rome? (summer 2)

Use dates and terms related to the passing of time
Look for links and affects in time studied connections
Offer a reasonable explanation for events
Recognise the significance of a historical event on future life.

Complex terms : BCE / CE

Who was Henry VIII

Significant dates linked with marriages and break with Rome

Catholic Faith

Protestant Faith

Persecution

Parliament

Wealth



Year 3

Who were the Anglo Saxons and what happened to them? (Summer 2)

Use a **timeline** to order events
To identify an opinion in a source.
To understand different versions of the past may exist and give reasons for this

To identify reasons for and results of peoples actions cause

Immigration

Counties

Christianity

Alfred the Great

1066

William the Conqueror



Boudicca – Hero or Villain? (Autumn 1)

Use a **timeline** to order events
To identify an **opinion** in a source.
To understand different versions of the past may exist and give reasons for this

To identify reasons for and results of peoples actions **cause**

Primary and Secondary sources

Romans

Celts

Life – culture

Boudicca

Boudicca's revolt



History at Harrow Gate Primary Academy

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History at Harrow Gate Primary Academy

A study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066

What were the risks to a poor family in Victorian Britain? (Autumn 1)

Confidently use dates and terms related to the passing of time

Consider different aspects of the life of different people / classes. **contrasts**

Compare life in early and late times studied **trend over time**

Timeline

Health

Child Labour

Housing

Poverty – bias and opinion

Crime

Society



Year 5

The achievements of the earliest civilizations – an overview of where and when the first civilizations appeared

What was the role of the river Nile in developing the Ancient Egyptian empire? (Summer 2)

Confidently use dates and terms related to the passing of time

Consider different aspects of the life of different people / classes. **contrasts**

Compare life in early and late times studied **trend over time**

Nile – continent, countries and size

Ancient Egypt cities

Ancient Egypt transport

Ancient Egypt Technology

Trade and civilisation

Empire



What was life like in the trenches during WW1? (Autumn 1)

To use historical sources to identify **trends**

To question the validity of sources – propaganda / fake news

Identify how belief can have an **impact** on historical events

Cause

Effect

Trench life

Propaganda

The soldiers



Year 6

Who was persecuted during the Nazi regime and why? (Summer 2)

To use historical sources to identify **trends**

To question the validity of sources – propaganda / fake news

Identify how belief can have an **impact** on historical events

German culture 1933

Success of the Jews

The Nazi party

Propaganda

Rise of The Nazi Party 1933 – 1945

Persecution of minorities

Persecution of Jews



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Harrow Gate Primary Academy **Art** Big Ideas



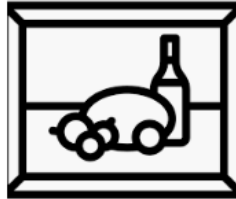
Colour and Pattern



Shape



Nature



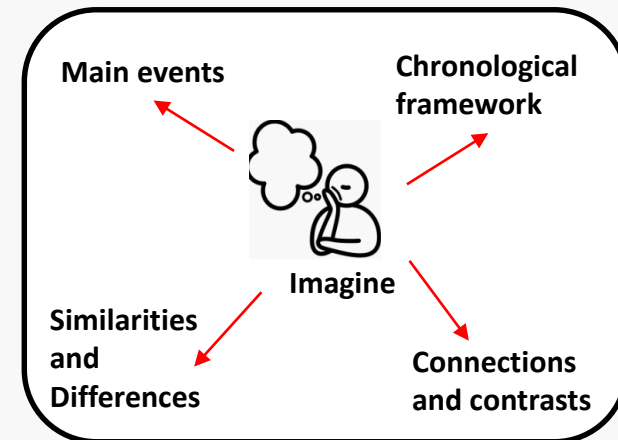
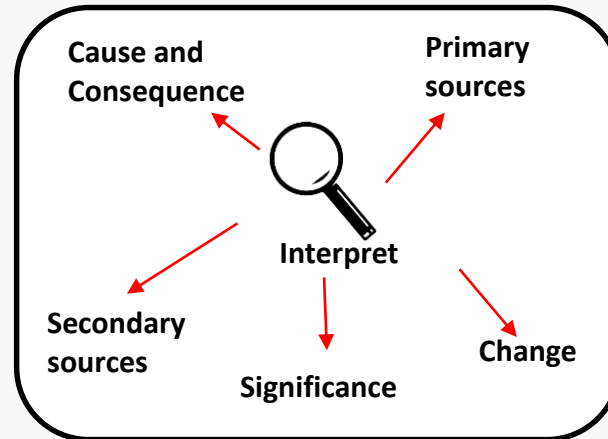
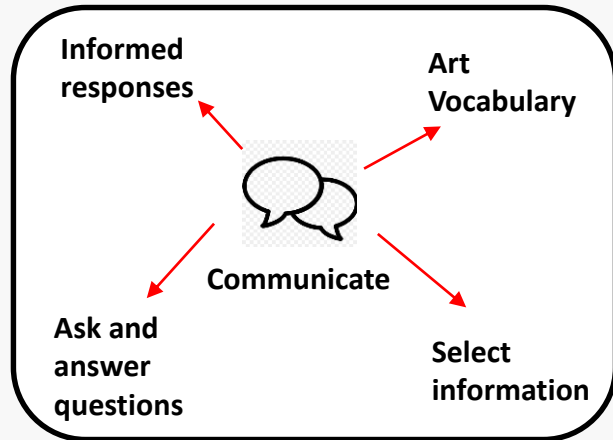
Real life



Perspective



Emotion



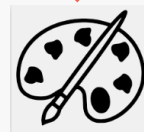
Locate



Belief



Drawing



Paint and pastels



Sculpture



Collage



Printing



Digital



Textiles

Focus

ART at Harrow Gate Primary Academy

INTENT:

At Harrow Gate Primary Academy, we believe that high-quality Art lessons will inspire children to think innovatively and develop creative procedural understanding.

The Art curriculum provides children with opportunities to develop their skills using a range of media and materials. Children learn the skills of drawing, painting, printing, collage, textiles, 3D work and digital art and are given the opportunity to explore and evaluate different creative ideas. Children will be introduced to a range of works and develop knowledge of the styles and vocabulary used by famous artists. It is paramount that art work be purposeful; be this as a means of expression or to explore the styles of other artists that inspire our own work. Pupils should be clear what the intended outcomes are and have a means to measure their own work against this.

In Art, children are expected to be reflective and evaluate their work, thinking about how they can make changes and keep improving. This should be meaningful and continuous throughout the process, with evidence of age-related verbal and written reflection. Children are encouraged to take risks and experiment and then reflect on why some ideas and techniques are successful or not for a particular project

Reception

Creative activities through whole curriculum.
Focus on artist David Hockney



Creative activities through whole curriculum.
Focus on artist Mackenzie Thorpe



Year 1

How do artists use colour and pattern?
Drawing / Painting and Pastels / Digital Media

Mondrian	Kandinsky	Pollock
Primary colours	Secondary colours	
Tertiary colours	Neutral colours	
Warm colours	Cool colours	
Shade	Tints	Abstract Art



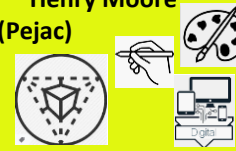
Year 5

How do artists use perspective?

Drawing / painting and pastels / Digital media

Filippo Brunelleschi **Leonardo DaVinci**
Pietro Perugino **Henry Moore**
Silvestre Santiago (Pejac)

Perspective ART
Forced perspective
Photography



How can artists represent real life?

Drawing / 3d sculpture – clay

Italian Renaissance

Michelangelo 1475 – 1564

The Pieta
Statue of David
Sistine Chapel
Sculpture
Working with Clay



Year 2

How do artists use shape?

Drawing / 3d sculpture using everyday materials

Henry Moore **Antony Gormley**
Dennis Oppenheim

Sculpture
3 Dimensional
Modelling
Types of Sculpture

Carving
Casting



Year 3

How are artists inspired by nature?

Painting and pastels / collage and textiles

Impressionism

Claude Monet 1840 – 1926

Pierre-Auguste Renoir 1841 – 1919

Collage
Textiles
Stitching
Sketching



Year 4

How do artists create emotion without a brush?

Drawing / painting and pastels / printing

Edvard Munch

The Scream

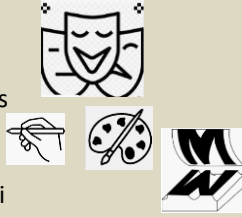
Expressionism

Printing techniques

Reduction print

Andy Warhol

Katsushika Hokusai



Mackenzie Thorpe



1956 to present day

David Hockney



1937 to present day

Abstract Art

Mondrian: 1872 - 1944



Kandinsky: 1866 - 1944



Pollock: 1912 - 1956



Sculpture

Henry Moore: 1898 - 1986



Antony Gormley: 1950 -



Dennis Oppenheim: 1938 - 2011



Impressionists

Claude Monet: 1840 - 1946



Pierre-Auguste Renoir 1841 - 1919



Italian Renaissance
Michelangelo 1475 - 1564



Perspective Art

Filippo Brunelleschi
1377 - 1446

Leonardo DaVinci 1442 - 1519



Pietro Perugino 1446 - 1523



Henry Moore



Silvestre Santiago (Pejac)



Expressionism

Edvard Munch: 1863 - 1944



Harrow Gate Primary Academy Religious Education Big Ideas



Story



Symbols and
religious
expression



Worship



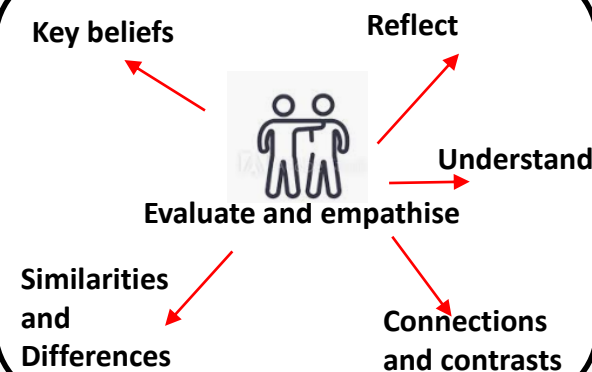
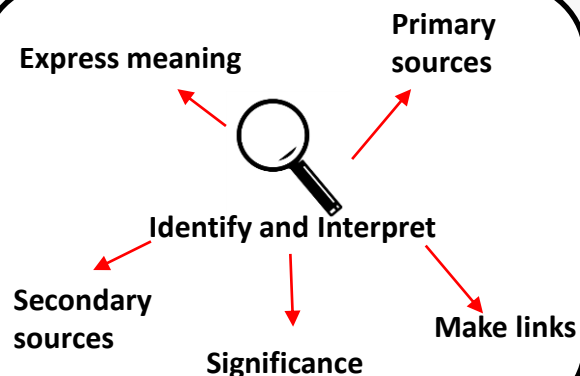
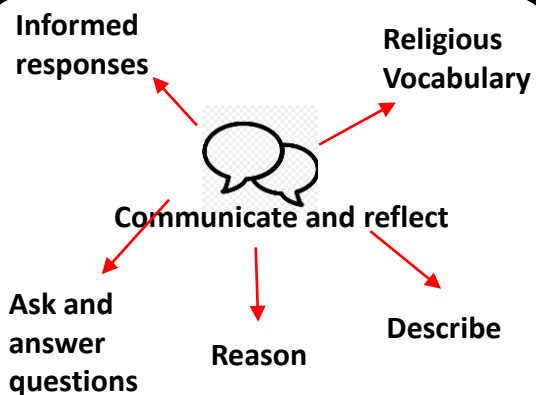
Teachings and
Authority



Pilgrimage



Impact of Faith



Belief



Christianity



Hinduism



Judaism



Sikh



Buddhism



Islam

Focus

INTENT

Religious Education has a significant role for the development of pupils' spiritual, moral, social and cultural development. It promotes respect and open-mindedness towards others with different faiths and beliefs and encourages pupils to develop their sense of identity and belonging through self-awareness and reflection. The principle aim of RE is to engage pupils in an enquiry approach where they can develop an understanding and appreciation for the expression of beliefs, cultural practices and influence of principle religions and worldviews in the local, national and wider global community. The key aims for religious education are reflected in the two attainment targets.

Attainment Target 1- Learning about religion and belief

Attainment target 2- Learning from religion and belief

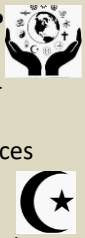
The development of knowledge, skills and understanding focuses on these two key aspects of learning in Religious Education.



Year 6

What are the key beliefs of Islam?

- 1.Key beliefs of Islam
 - 2.Holy scripture and Key Leaders – Prophet Mohammed pbuh
 - 3.Symbols, worship, important places and pilgrimage
 - 4.What is expected of a Muslim
- How do they practice their faith and what contribution does this make to local life
- How do Muslims respond to global issues, human rights, fairness, social justice and environmental issues



Year 5

Year 5

Pilgrimage:

- 1.Key beliefs of Buddhism
 - 2.What religious sources and texts say about pilgrimage/life and death
 - 3.Where do religious followers go on pilgrimage and why do they do this
- The impact of influential and inspirational people on worship and pilgrimage.



What are the key beliefs of Sikhism?

- 1.Key beliefs of Sikhism
- 2.What the Gurus of Sikhism say about God, the world and human life.
- 3.How the 5Ks are symbolic to Sikhs.
- 4.How do Sikhs do what is expected of them in today's world.



Year 4

Are all Christian churches the same and do all Christians believe the same thing?

- 1.What different Christian denominations believe about their faith.
 - 2.The Bible outlines Jesus' words to his disciples. The Bible gives two accounts of the Christmas Story.
 - 3.How Christians worship and why they carry out particular rituals.
 - 4.The expectations of Christian communities.
- How places of worship and religious symbols differ/are similar for different Christian denominations.



How are Christmas and Diwali similar and different?

- 1.What Christians believe about Christmas.
 - 2.The Nativity and its importance to Christians.
 - 3.Christian beliefs and how they celebrate Christmas.
 - 4.What is expected of a Christian child.
- Christian symbols and places of worship.
- Secular traditions at Christmas.



- 1.What Hindus believe about Diwali.
 - 2.The Story of Rama and Sita and its importance to Hindus.
 - 3.Hindu beliefs and how they celebrate Diwali.
 - 4.What is expected of a Hindu child.
- Hindu symbols and places of worship.



Reception

Nursery

How are Christmas and Hanukkah similar and different?

- 1.What the key beliefs of Christianity are.
 - 2.The sacred events of The Nativity.
 - 3.How and why Christmas is important to Christians
 - 4.What Christians do in school to celebrate.
- Who the important Christian figures in our community are.
- Christian symbols and how they express religious meaning.



- 1.What the key beliefs of Judaism are.
 - 2.The story of Hanukkah.
 - 3.Jewish symbols and how they express religious meaning.
- The celebrations involved in the festival of Hanukkah and where these take place.

Year 1

Why do we celebrate Christmas? How do people celebrate Christmas?

Know some similarities and differences between different religious and cultural communities in this country

People who practise Christianity are called Christians

Christians celebrate Christmas

Christmas is celebrated every year on 25th December

It is celebrate the birth of Jesus Christ



Why do we celebrate Christmas? How do people celebrate Christmas?

Know some similarities and differences between different religious and cultural communities in this country

Christian faith and celebrations

People who practise Christianity are called Christians

Christians celebrate Christmas

Christmas is celebrated every year on 25th December

It is celebrate the birth of Jesus Christ



Year 3

Year 2



STEM at Harrow Gate Primary Academy



What is STEM:

STEM stands for science, technology, engineering, and mathematics. STEM is important because it pervades every part of our lives. Science is everywhere in the world around us. Technology is continuously expanding into every aspect of our lives. Engineering is the basic designs of roads and bridges, but also tackles the challenges of changing global weather and environmentally-friendly changes to our home. Mathematics is in every occupation, every activity we do in our lives. By exposing students to STEM and giving them opportunities to explore STEM-related concepts, they will develop a passion for it and hopefully pursue a job in a STEM field. A curriculum that is STEM-based has real-life situations to help the student learn

Science INTENT:

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.

Design and Technology INTENT:

Design and Technology prepares children to take part in the development of today's rapidly changing world. Creative thinking encourages children to make positive changes to their quality of life. The subject encourages children to become autonomous and creative problem-solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond by developing ideas and eventually making products and systems. Through the study of design and technology they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts. Design and technology helps all children to become discriminating and informed consumers and potential innovators. We live in a technological age, surrounded by artefacts and systems which have been produced, designed and made for us by other humans working together in a complex range of activities.

Through the use of an integrated STEM curriculum the children are innovative problem solvers using their acquired procedural and declarative knowledge across many subjects

Animals including Humans Autumn 1 & 2

(Offspring, needs for survival)

Understand basic needs for survival
To use understanding of healthy food and cutting skills to design and make a healthy snack.

Food and Nutrition DT

Prior Learning: EYFS Healthy eating and food names.
Content: Food hygiene
Food processes and equipment
Cutting terminology / skills

Plants Summer 1

Learning Intention:
To identify the basic parts of a flowering plant and a tree
To understand the basic functions of the flower, stem, leaves and roots
To understand the basic functions of a **tree**.

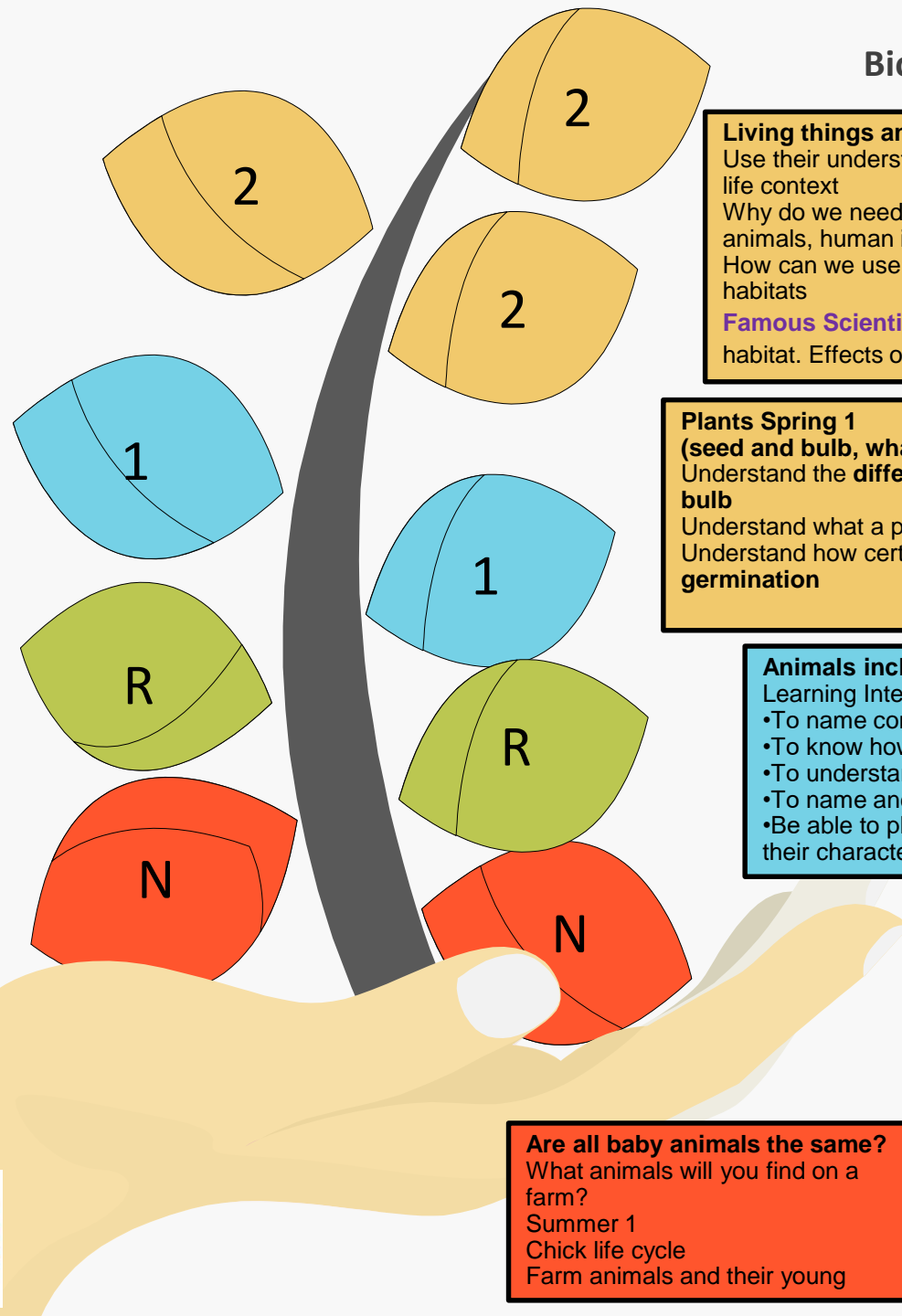
Parts and functions of a plant.

What does a plant need to grow? Summer 1

Plants
The structure of a plant;
Flower
Stem
Leaves
Roots
We use plants as food Vegetable Fruit.
Common plants in our area
Simple plant lifecycle

What does a plant need to grow?

Summer 2
Basic needs – water, sun, soil, seeds
Stem
Leaves
Roots
Insects found in your garden



Living things and their Habitats Summer 1&2

Use their understanding of living things and their habitats to apply to a real life context

Why do we need to know more about certain animals (endangered animals, human impact)?

How can we use our knowledge to observe animals in their natural habitats

Famous Scientist - Jane Goodall Biologist Study of gorillas in natural habitat. Effects of humans on this family group

Plants Spring 1

(seed and bulb, what plants need to grow)

Understand the **difference** between a **seed** and a **bulb**

Understand what a plant needs to **germinate**

Understand how certain conditions can affect **germination**

Animals including humans Summer 2

Learning Intention:

- To name common animals.
- To know how animals are grouped (5 categories).
- To understand how you can identify animals.
- To name and label the parts of the human body.
- Be able to place animals into groups dependent on their characteristics

How can we help our environment?

Spring 2

Water reuse and saving

Recycle paper in the environment

Litter

Compost.

Some creatures and insects from our garden also help it grow and develop

Some creatures and insects can be harmful to our garden and environment plants.

Simple insect life cycle

Are all baby animals the same?

What animals will you find on a farm?

Summer 1

Chick life cycle

Farm animals and their young

Animals Including Humans Autumn 1

Identify and name the main parts of the human circulatory system
Describe how water and nutrients are transported through the body.
Explain the impact of diet, exercise, drugs and lifestyle on the way the body functions.
DT – Food and Nutrition

Living Things and their Habitats Spring 1

To know the differences in the life cycles of a mammals, amphibian , insect and a bird
Describe the life process of **reproduction** in plants and animals

Living things and their habitats Spring 2

Understand that vertebrates can be grouped due to their characteristics.
Use this understanding to use and create classification keys
To know that environments are changing and how this affects the wildlife.
Basic classification, environment
David Attenborough

PLANTS Spring 1

To understand the functions of a flowering plant (plant, tree)
Understand how water is transported through a plant (transpiration)
Understand how the processes of pollination, seed formation and seed dispersal in flowering plants.
Understand the needs of particular plants (e.g. a cactus, volcanic plants etc.)

Living Things and Their Habitats Spring 1

Describe how living things can be classified into broad groups according to common observable characteristics
Understand the characteristics particular of plants, animals and micro-organisms
Justify reasons for classifying living things.
Famous Scientist: Carl Linnaeus

Evolution and Inheritance Autumn 2

Understand that living things have changed over time (**evolved**).
Recognise that living things produce offspring which are similar but not identical
Identify how plants and animals are **adapted** to their environment.
Famous scientist: Charles Darwin Mary Anning Alfred Wallace

Animals including humans Summer 1

Understand and describe the changes in humans as they age.

Animals Including Humans Summer 2

To know the basic parts and functions of the **digestive system** in humans.
To identify the different types of teeth and functions in humans.
To be able to construct food chains

Animals including humans (Nutrition) Summer term

To understand that animals and humans need the right types and amounts of nutrition.
To be able to identify human and animal skeletal systems and muscular systems
To know these provide support, protection and movement.

DT – Food and Nutrition

To use their knowledge of nutrition and seasonality to create a nutritious savoury meal.

Famous Scientist - Louis Pasteur

To use their knowledge of pasteurisation and how foods are processed and manufactured to ensure they are safe for human consumption



Light Autumn 1

To understand what light is and its importance.
To identify sources of light (man-made and natural).
To know how light moves and how it can be reflected.
To understand how the eye detects light.
Use their knowledge of light to create suitable eye wear.



Year 4

Forces and Magnets Summer 2

Understand how things move on different surfaces and the forces acting on them.
Understand the properties of magnets
Use the knowledge of magnets and materials to identify magnetic materials.

DT Pneumatics

To use their knowledge of forces and pneumatics to create a moving figure.
History of Pneumatics
German physicist Otto
James Watt
Uses of Pneumatics
DT vocabulary
Tools required for a simple pneumatic

Electricity Autumn term

To understand that electricity is an energy and identify everyday appliances that use it
To be able to construct simple circuits and know the electrical components but not their symbols
To use their knowledge of circuits and electricity to create a circuit with a switch and a light which serves a purpose

Famous Scientist - Alessandro Volta Physicist

Discovered the battery!

DT - Electrical systems – simple circuits and switches

Pose the children a variety of design criteria which enables them to use and apply their understanding of circuits to design and make a Christmas decoration.

Sound Summer 1

To understand how sounds are made
Know that vibrations from sounds travel through a medium to our ear.
To understand pitch and volume how this affects sound
To understand how the volume of a sound is affected by distance.

Famous Scientist: Marin Mersenne Robert Boyle

Earth and Space Autumn 2

Understand the movement of the Earth in relation to the sun and the other planets.
Explain the movement of the Moon relative to the Earth
Know why the Earth's rotation causes night and day
Explain that the Sun, Moon and Earth are spherical bodies
To recognise the theories of black holes and relativity

Famous Scientist - Stephen Hawking Brian Cox - Guion 'Guy' Bluford (first African American in Space)

Forces Summer term

Know why unsupported objects fall towards earth because of the force of Gravity
Identify the effects of air resistance, water resistance and friction
Recognise that some mechanisms can allow a smaller force to have a greater effect.

DT - Mechanical systems – Pulleys and gears

Pose the children a variety of design criteria which enables them to use and apply their understanding of forces and mechanical systems to design and make a moving object.

6 simple machines identified by science and DT

Pulley rotations
Gear ratios
Reversing switches
Annotated diagram
Exploded diagram



Year 6

Light Spring 2

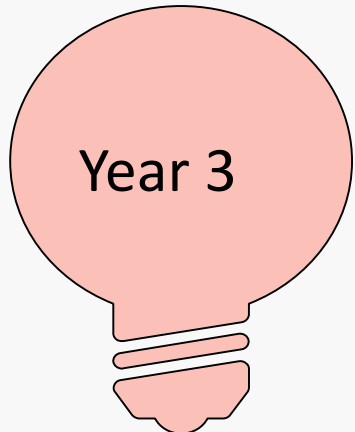
To know how light travels
To explain how light allows us to see
To explain how shadows are formed

Famous Scientist: Thomas Edison

STEM Critical Thinking

Electricity Summer 2

To understand how the voltage of cells affects the brightness of a lamp and the volume of a buzzer.
To be able to compare and give reasons for how different electrical components function
Use recognised symbols to represent electrical circuits in a diagram

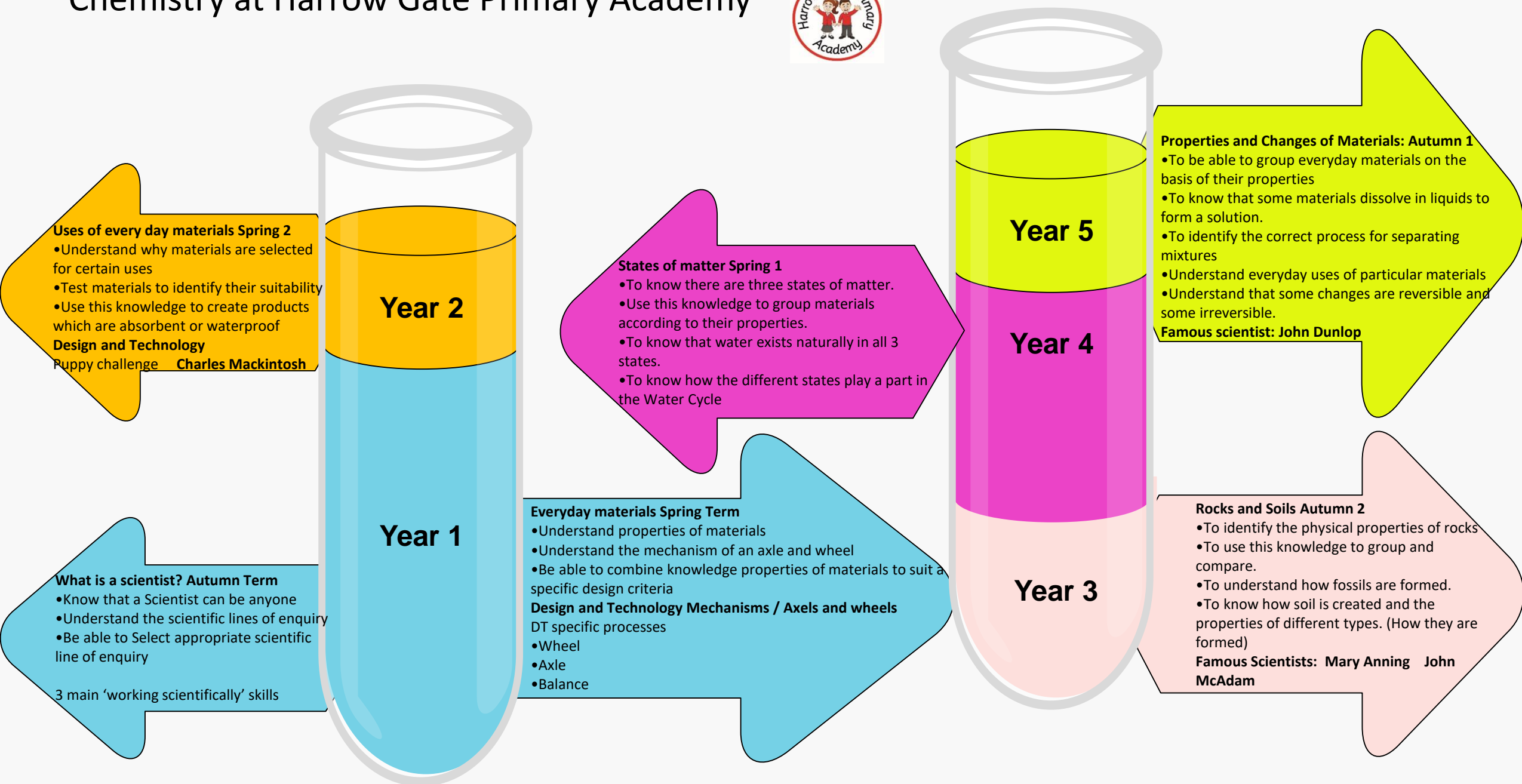


Year 3



Year 5

Chemistry at Harrow Gate Primary Academy



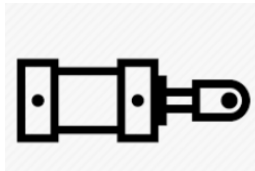
Harrow Gate Primary Academy **Design and Technology** Big Ideas



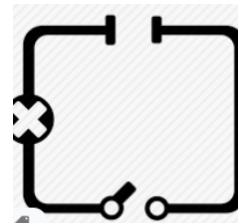
Mechanisms



Food and Nutrition



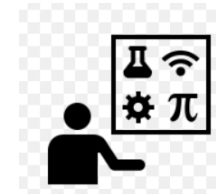
Pneumatics



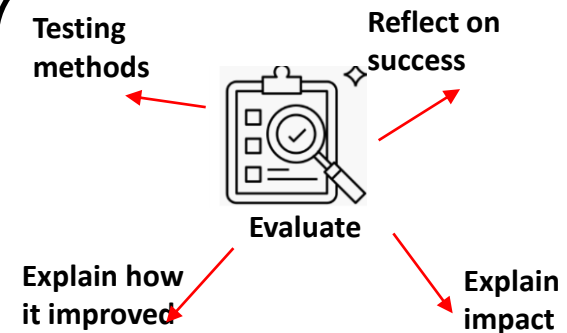
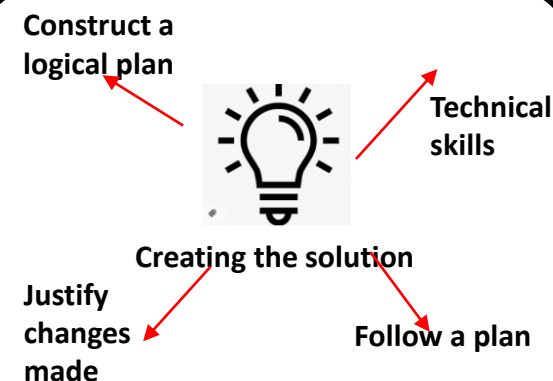
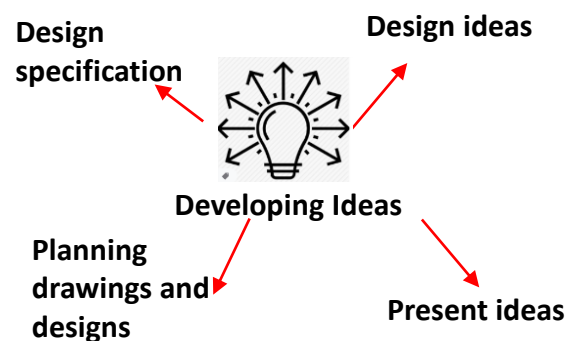
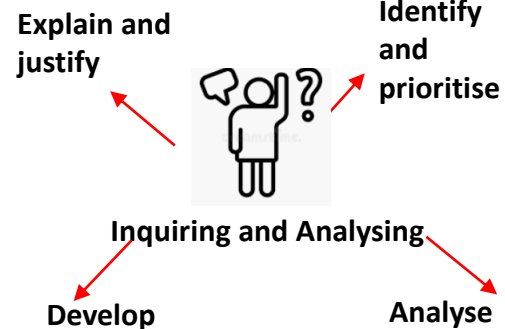
Electrical systems



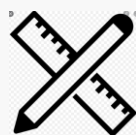
Mechanical systems



STEM



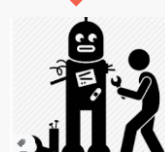
Inquiring and analysing



Designing



Developing ideas



Making



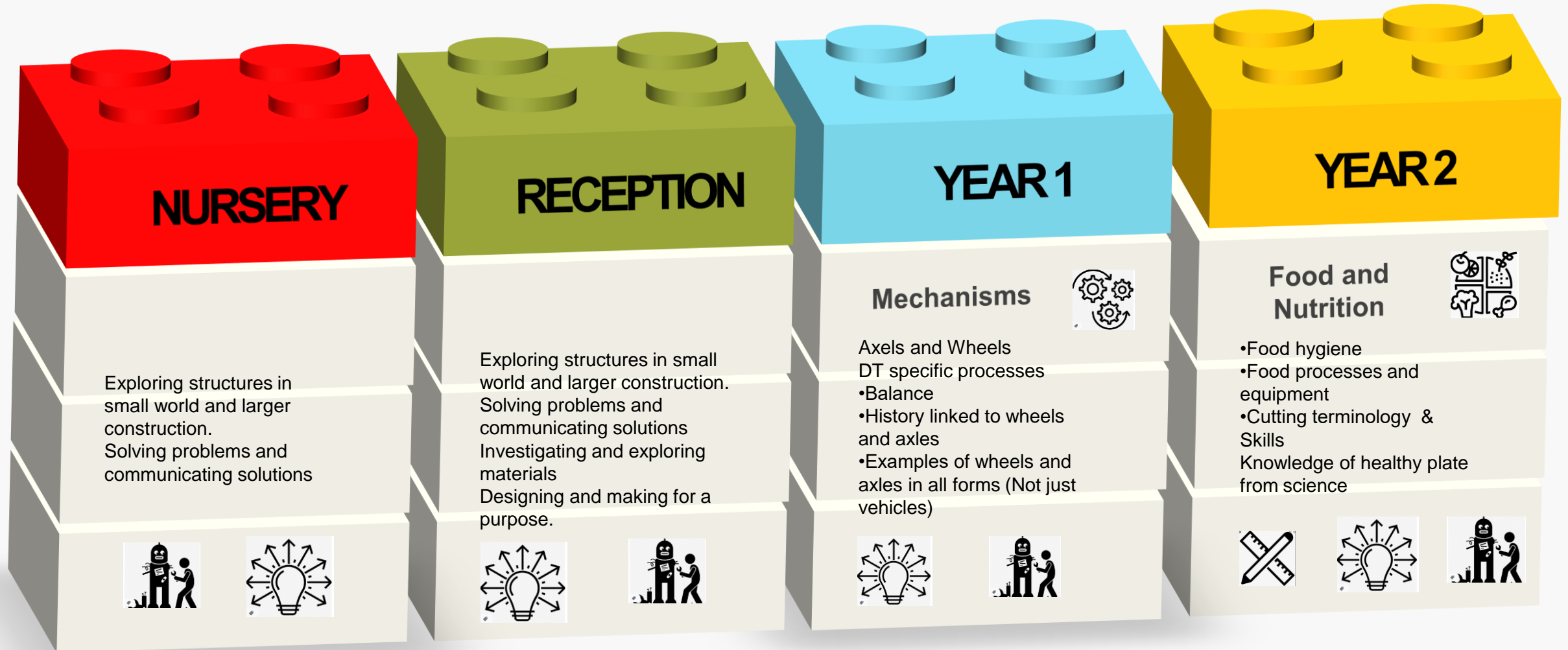
Evaluating



Improving and solving

Focus

Design and Technology at Harrow Gate Primary Academy



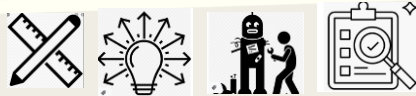
Design and Technology at Harrow Gate Primary Academy

YEAR 3

Pneumatics

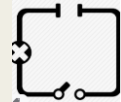


History of Pneumatics
German physicist Otto
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Uses of Pneumatics
DT vocabulary
Tools required for a simple
pneumatic



YEAR 4

Electrical Systems



- Design criteria
- Physics Electricity and Alessandro Volta
- Toggle switch
- Reed switch
- Secure connections
- Hand made switches
- Commercial switches
- Circuit symbols



YEAR 5

Mechanical Systems



- 6 simple machines identified by science and DT
- Pulley rotations
- Gear ratios
- Reversing switches
- Annotated diagram
- Exploded diagram



YEAR 6

STEM



Use and apply all DT skills and knowledge to access and solve issues.

Food and Nutrition
Critical thinking
Solution finding

