Topic	Science	Theme	Diversity	Year Group	4
Key Question	How and what do we eat?				

What I should already know?

- ❑ The parts of the human body and what they do.
- ❑ All animals need water, air and food to survive.
- ❑ The different ways in which humans are healthy.
- ❑ Animals get **nutrition** from what they eat.
- ❑ Humans and some animals have skeletons and **muscles** for support, protection and movement.
- ❑ What **carnivores**, **omnivores** and **herbivores** are.

Key learning:

- ❑ To compare the teeth of carnivores and herbivores and identify whether there are any similarities and differences
- ❑ To identify the different types of teeth in humans and their simple functions.
- ❑ To describe the simple functions of the basic parts of the digestive system in humans.
- ❑ To plan, set up, and investigate the effects of different liquids on eggs, and draw simple conclusions.
- ❑ To interpret a variety of food chains, identifying producers, predators and prey.
- ❑ To create and draw food chains.

Key Vocabulary

canine	sharp, pointed teeth that help with ripping and tearing
carnivore	an animal that eats other animals
consumer	a living thing that eats other living things
decay	a process of a material breaking down
enamel	protective layer of a tooth
germs	living things that are too small to be seen by the human eye
herbivore	an animal that eats plants
incisor	flat teeth at the front of the mouth that are used to bite into food
molar	the large teeth at the very back of the mouth used to grind and chew food
omnivore	an animal that eats other animals and plants
plaque	a sticky coating made by germs that can harm the teeth and gums
prey	animals that are eaten by predators
predator	an animal that eats prey
premolar	the teeth found between canine teeth and molars that guide food to the back of the mouth
producer	a living thing that makes its own food from the Sun
root	the part of a tooth that holds it in place in the jaw
teeth	the hard structures in the mouth used to bite and chew through food

Teeth

Animal teeth:

- Carnivores have long, sharp teeth to help them with ripping and tearing through meat.
- Herbivores have large, flat teeth to grind and chew through grasses and plants.
- Omnivores have a combination of sharp and flat teeth, allowing them to tear through meat and grind plants.
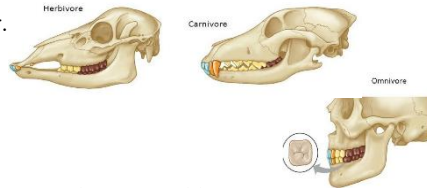
Human Teeth:

- Humans have four different types of teeth – incisors, canines, premolars and molars.
- Human teeth have layers which include enamel, pulp and roots.
- The human mouth is full of different germs which feed on sugar in the mouth and can cause plaque to build up.
- If plaque is not removed from the teeth, it can cause the enamel layer to rot away, exposing the sensitive layers underneath.
- We can look after our teeth by brushing them twice a day, reducing our sugar intake and visiting the dentist regularly.
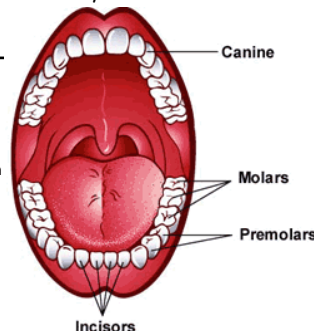
The Digestive System

- Digestion is the breaking down of larger pieces of food into smaller pieces so the body can use it for energy.
- The digestive system allows the body to take in nutrients from food as it passes through the body.
- Each organ within the digestive system has a function to help the body break down food.
- The digestion process begins when food is bitten by the teeth.
- Saliva turns smaller pieces of food into a more liquid substance so it travels smoothly down the oesophagus to the stomach.
- The stomach churns the food, and adds acid to break it down further before the partially digested food passes to the small intestine.
- The small intestine absorbs nutrients from the food and passes the remaining food to the large intestine.
- The large intestine absorbs water from the remaining food, and then passes the remaining waste to the rectum.

digestive system – organs working together to break down food into smaller pieces

mouth – the organ that takes in food and begins digestion using teeth and saliva

oesophagus – the organ that pushes food from the mouth to the stomach

stomach – the organ that squeezes and breaks down food

rectum – part of the large intestine where waste exits the body

intestines (small and large) – the organs that absorb nutrients and water from food

saliva – clear liquid in the mouth that softens food

Food Chains

- A food chain shows an order of living things, to show how energy is transferred when one living thing eats another.
- The arrows in a food chain show the energy transfer from one food source to another.
- Food chains begin with a producer.
- A food chain consists of producers, consumers, predators and prey.
- Food chains can be different lengths depending on the living things within a habitat.

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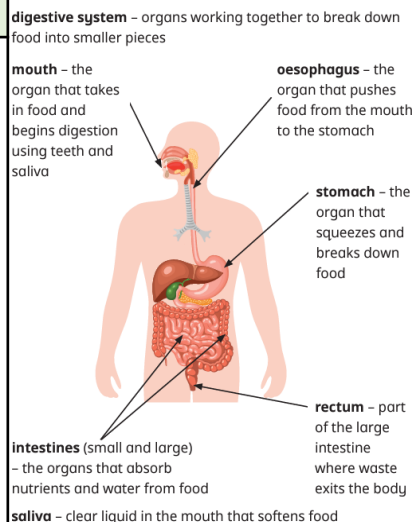| Topic	RE		Theme	Diversity	Year Group	4
Key Question	What do Christians believe about the characters in the Christmas story?					

What I should already know

- Christians believe that Jesus is God and that he was born as a baby in Bethlehem.
- The Bible points out that his birth showed that he was extraordinary (for example, he is worshipped as a king, in Matthew) and that he came to bring good news (for example, to the poor, in Luke).
- Christians celebrate Jesus' birth; Advent for Christians is a time of getting ready for Jesus' coming.

Key Knowledge

- The Christmas Story is part of God's Big Story and even if we are not Christians we can learn from the Christmas story.
- God chose Mary, an ordinary young girl, to be Jesus' mother. God saw something special in Mary. We are special too.
- Joseph did not expect Mary to be pregnant before they were due to be married. Like Joseph, things don't always go to plan in our lives. God spoke to Joseph through an angel. We have people who can help us when it feels like things are not going to plan.
- The Shepherds were not popular and were not always treated fairly. We can treat other people fairly and include those who are overlooked, ignored, rejected or forgotten.
- The Wise Men were from a distant country and another religion. God invited them to be part of the Christmas Story.. We can include others who are different to us.
- For Christians, the Christmas story is about love: God loving the world and all the people, and giving Jesus as a gift. We can learn from the Christmas Story. We can still learn things from the story today.

THE CHRISTMAS STORY: A TIMELINE OF EVENTS

1 Details of Jesus birth are predicted in the Old Testament centuries before it takes place. Isaiah predicts that Jesus will be born of a virgin. Micah predicts that He will be born in Bethlehem.

2 The Angel Gabriel visits Mary to tell her that despite being a virgin she will shortly fall pregnant and give birth to a son who will be named Jesus.

3 Mary goes to visit her older cousin, Elizabeth (who is also pregnant, and subsequently gives birth to John the Baptist). Mary spends three months there before returning home.

4 An angel appears to Joseph in a dream reassuring him that Mary has not been unfaithful and that the child was conceived by the Holy Spirit and should be named Jesus, because "He will save His people from their sins".

5 A decree is announced by Caesar Augustus that people must return to their home towns to be registered. Joseph and Mary travel to Bethlehem, the home of his ancestors.

6 After arriving in Bethlehem and finding there's no room for them in the inn, Mary brings forth her firstborn son and lays Him in a manger.

7 Angels appear in the night sky to announce the birth of the Saviour to a group of local shepherds. They are filled with joy as they visit the baby in the manger.

8 A little later wise men from the east follow a star to the house where the child is. They bring gifts of gold, frankincense and myrrh, and worship the child, realising who He really is!

9 King Herod hears about the birth of Jesus and flies into a jealous rage, instructing that all of the young boys in the region are to be killed in an attempt to assassinate Jesus.

10 An angel appears to Joseph in a dream to warn him of the danger and to instruct him to take Mary and the child and flee to safety in Egypt.

11 Herod eventually dies and the angel appears to Joseph again to tell him that it's now safe to return from Egypt. They settle in Mary's hometown of Nazareth, where Jesus remains until He is 30 years old.

12 Jesus leaves Nazareth and after 3 years of miracles, teaching and helping others, He dies upon a cross to pay the penalty of mankind's sin, before rising from the dead 3 days later!

Key Vocabulary

God – Deity of Christianity
Mary – Mother of Jesus
Joseph – Carpenter and married to Mary
Angel – Messenger from God
Shepherds – Look after sheep in the fields
Wise Men – Visitors who brought gifts to Jesus
Jesus – Son of God

| Topic | Computing – Online safety | Theme | Diversity | Year Group | 4 |

Objectives

Online Reputation
- ❑ I can explain how to search for information about others online.
- ❑ I can search for information about an individual online and summarise the information found.

Online Bullying
- ❑ I can give examples of how bullying behaviour could appear online and how someone can get support.

Privacy and Security
- ❑ I can explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others.
- ❑ I can give reasons why someone should only share information with people they choose to and trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult.
- ❑ I can describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser).

Online Reputation

- If you were to look at everything someone had posted online, all their pictures and videos, it would give you an idea of what kind of person they are. This is called an **online reputation**.
- The things online that you have liked, shared and commented on may shape your **online reputation.**
- What you share online could be a part of your online reputation forever. Think carefully before posting.
- A **search engine** is used to find out information on the internet.

Online Bullying

- **Online bullying** (often referred to as **cyberbullying**) is any form of bullying that is carried out through the use of electronic media devices, such as computers, laptops, smartphones, tablets, or gaming consoles.
- It's not OK to treat other people badly, online or face to face.
- You should always talk to a trusted adult if someone is being bullied online.

Privacy and security

- **Consent** is another word for **permission**.
- We need to ask for permission for some things and give permission for others, when we're online as well as offline.
- Agreeing to terms and conditions without reading them can be very tempting – they can be long and confusing, but it's important to know what you're agreeing to first!
- Speaking to a trusted adult is always a good choice as they can help you to understand the terms and conditions and decide if you want to agree to them and sign up.
- Online competitions can be really fun and sometimes have great prizes – but always make sure they are trustworthy. It's always best to speak to an adult first.
- Some games will need to know your location to work properly, but many others don't. If a game or app doesn't need to know your location then it's always safest to choose to keep that information private.
- A **password** is a secret string of letters, symbols and numbers that you can use to restrict who can access something digital.
- You should always use strong **passwords**.
- Never use the same password.
- Always tell a trusted adult if your password is stolen.

Ridgeway Farm CE Academy – Knowledge Organiser

| Topic	Computing – Coding	Theme	Diversity	Year Group	4

Key Learning

- To begin to understand selection in computer programming.
- To understand how an IF statement works.
- To understand how to use co-ordinates in computer programming.
- To understand the 'repeat until' command.
- To understand how an IF/ELSE statement works.
- To understand what a variable is in programming.
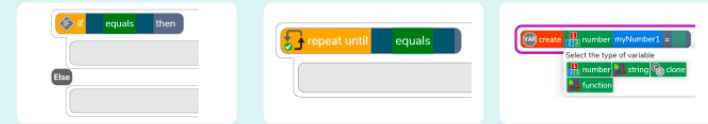- To use a number variable.
- To create a playable game.

Key Resources

purple mash

Tools | 2Dos | 2Chart | Free code gibbon

Key Images
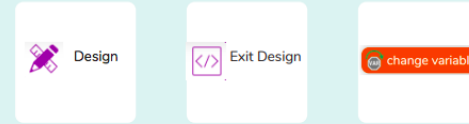
Open design mode in 2Code.

Switch to code mode in 2Code.

A change variable block.

An 'if/Else' command.

Repeat until.

Creating a variable in 2Code.

'If' Statement
A computer uses an IF statement to decide which bit of code to run. IF a condition is true, then the commands inside the block will be run.

Input
Information going into the computer. This could be the user moving or clicking the mouse, or the user entering characters on the keyboard. On tablets there are other forms such as finger swipes, touch gestures and tilting the device.

Key Resources

purple mash

Tools | 2Dos | 2Chart | Free code gibbon

Key Vocabulary

Action
The way that objects change when programmed to do so. For example, move or change a property.

Background
In 2Code the background is an image in the design that does not change.

Command
A single instruction in 2Code.

Execute
This is the proper word for when you run the code. We say, 'the program (or code) executes.'

Properties
These determine the look and size of an object. Each object has properties such as the image, scale and position of the object.

Alert
This is a type of output. It shows a pop up of text on the screen.

Button
A type of object that responds to being clicked on.

Debug/Debugging
Fixing code that has errors so that the code will run the way it was designed to.

Selection
Selection is a decision command. When selection is used, a program will choose which bit of code to run depending on a condition.

Timer
In coding, use a timer command to run a block of commands after a timed delay or at regular intervals.

Algorithm
A precise, step-by-step set of instructions used to solve a problem or achieve an objective.

Code blocks
A way to write code using blocks which each have an object or an action. Each group of blocks will run when a specific condition is met or when an event occurs.

Design
In coding, this is a plan for the program showing the visual look of the user interface (the screen) with the objects. The algorithm can be represented as part of the design, showing actions and events.

Nest
When coding commands are put inside other commands. These commands only run when the outer command runs.

Implement
When a design is turned into a program using coding.

Repeat until
In 2Code this command will repeat a block of commands until a condition is met.

Sequence
This is when a computer program runs commands in order.

Variable
A named area in computer memory. A variable has a name and a value. The program can change this variable value. Variables are used in programming to keep track of things that can change while a program is running.

Flowchart
A diagram that uses specifically shaped, labelled boxes and arrows to represent an algorithm as a diagram.

'If/Else' Statement
A conditional command. This tests a statement. If the condition is true, then the commands inside the 'if block' will be run. If the condition is not met, then the commands inside the 'else block' are run.

Object
Items in a program that can be given instructions to move or change in some way (action). In 2Code Gibbon, these include character, turtle, button, vehicle, animal, food, shape, number, input and label.

Prompt
A question or request asked in coding to obtain information from the user in order to select which code to run.

Repeat
This command can be used to make a block of commands run a set number of times or forever.

Run
Clicking the Play button to make the computer respond to the code.

Event
An occurrence that causes a block of code to be run. The event could be the result of user action such as the user pressing a key (when Key) or clicking or swiping the screen (when Clicked, when Swiped). In 2Code, the event commands are used to create blocks of code that are run when events happen.

Topic	Spanish	Theme	Diversity	Year Group	4

En la cafetería

phonics

ca   sound in:
- <u>ca</u>lamares
- crema <u>ca</u>talana
- un chocolate <u>ca</u>liente

co   sound in:
- un cho<u>co</u>late caliente
- una <u>co</u>ca cola

accents   Accents indicate the vowel is stressed. As seen in the words jam<u>ó</u>n, lim<u>ó</u>n and caf<u>é</u>.

stress placement   Words that end in a vowel, 'n' or 's' are normally stressed on the second to last syllable Like in cho-co-<u>la</u>-te.

vocabulary

20 words for foods, snacks and drinks.

Key questions and phrases for a role-play at the cafetería.

¡Hola!	¿Qué deseas?	Quisiera	y	por favor
Hello!	What would you like?	I would like	and	please

¡La cuenta por favor!	¡Gracias!	¡Adiós!
The bill please!	Thank you!	Goodbye!

Key vocabulary to be able to pay the bill.

grammar

To understand when to use the four different indefinite articles/determiners.

un   **una**

Singular indefinite articles/determiners 'a/an'

unos   **unas**

Plural indefinite articles/determiners 'some'

To understand how to move a singular noun to plural form and understand better that the determiner may need to change in Spanish.

una paella → unas paellas

a paella   *some paellas*

What I will learn:

☐ Objective 1: I will learn 10 different foods, snacks and drinks in Spanish with the correct indefinite article/determiner.

☐ Objective 2: I will learn another 10 different foods, snacks and drinks in Spanish with the correct indefinite article/determiner.

☐ Objective 3: I will learn some key phrases to help me perform a role-play in the Spanish cafetería.

☐ Objective 4: I will learn some more key phrases to help me perform a role-play in the Spanish cafetería.

☐ Objective 5: I will learn about Spanish currency and will use my knowledge of numbers to help calculate the bill in Spanish.

Topic	Music – Rock and Roll	Theme	Diversity	Year Group	4

Musical style: Rock and Roll

Rock and roll was created in America in the 1950s after the war and was made to depict happiness and a new life. The name comes from the phrase 'rocking and rolling' which was used by mariners to explain the movement of a ship, which influenced the dance steps.

Rock and roll stems from jazz, gospel and blues music and uses the blues structure and chords. It often has a fast tempo with strong vocals, which may use screaming and shouting. Rock and roll formed the basis of our modern day rock music.

Vocabulary

Bass line	The lowest part of the music, played by a bass or bass guitar in rock and roll.
Walking bass	A bass line that moves step by step using pitches that are next to each other.
Notation	The way that music is written so that others can play it.
In time	Playing or singing at the same speed as the music.

Hand jive

A rock and roll dance where you move your hands a lot!

In tune	Singing or playing with the correct pitch.
Tempo	The speed or pace of the music. It can change throughout a piece of music.
Dynamics	The volume of the notes. This often changes throughout a piece of music.
Pitch	How high or low a note sounds.

Instruments

Drum

Electric guitar

Double bass

Electric bass

| Topic | Art – painting and mixed media | Theme | Diversity | Year Group | 4 |

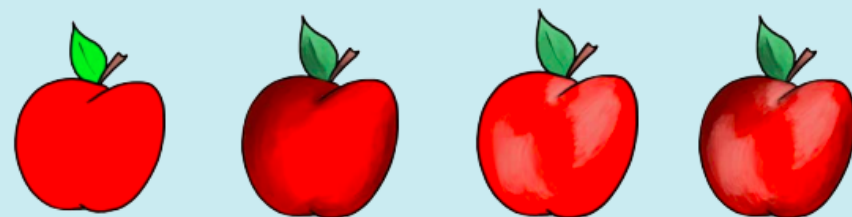| Composition | Putting different elements together in a pleasing way |
Hue	Describing an exact colour: sky blue, dark green, rose pink
Proportion	How big a part of something looks compared to the rest of it
Shade	Adding black to a colour makes a shade
Shadow	A dark area created when light is blocked
Still life	An artwork showing a collection of things that don't move, e.g. objects rather than people
Tint	Adding white to a colour makes a tint
Tone	How light or dark a colour is

Creating contrast

Contrasting texture

Contrasting colours

Using tints and shades can help a painted object appear three-dimensional

Painting techniques

Dabbing

Stippling

Pointillism

Adding texture to paint

Washes

Using different tools

Colour mixing

Making colours lighter:
+ a lighter colour
+ water
+ white

+ white =

+ yellow =

+ Add water

Making colours darker:
+ a darker colour
+ black

+ black =

+ blue =

+ red =

Portrait   Landscape

Still life

Topic	Design Technology – mechanical systems – slingshot car	Theme	Diversity	Year Group	4

Aesthetic	How an object or product looks.
Air resistance	The level of drag on an object as it is forced through the air.
Chassis	The body of a car.
Design	To make, draw or write plans for something.
Design criteria	A set of rules to help designers focus their ideas and test the success of them.
Function	The purpose of an object (for example a chair needs to hold a person when sitting down); or how the product works (for example a torch needs to provide light in a dark space).
Graphics	Images which are designed to explain or advertise something.
Kinetic energy	The energy that causes an object to move.
Mechanism	The parts of an object that move together as part of a machine.
Net	A flat 2D shape, that can become a 3D shape once assembled.
Structure	Something that has been made and put together and can usually stand on its own (eg a building, a bridge, a chair).

Did you know?

Some of the first toy cars were made in 1901, that's over 100 years ago!

Key facts

Front view

Bird's-eye view

Side view

Which vehicle has the least air resistance?