Knowledge Organiser: Science Y6

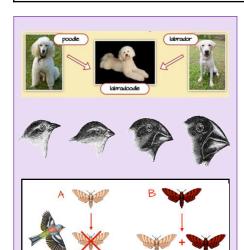
Evolution

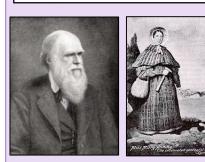
Curriculum Driver: Discovery

Trips/Enrichment: Church Visit

Cross-curricular subject links: English - Darwin's Dragons

GARP/GASP: Why did Mary Anning have to prove she was skilled at discovering, excavating and identifying fossil remains?







Core Knowledge

In science, evolution refers to how organisms change over time (typically millions of years) as a result of inherited adaptations that make it easier to survive, depending on where they live.

Evolution happens as the result of a process called **Natural Selection**. Natural Selection happens because all organisms within a species have random differences, or mutations, between them. A good example of a random mutation in humans is how we all have different-sized ears and noses.

Living things are **adapted** to their habitats. This means that they have special features that help them to survive.

When living things reproduce they pass on characteristics to their **offspring**. This is known as **inheritance**. All living things produce offspring of the same kind, but normally offspring are not identical to their parents; there are **variations** that make them different.

<u>Mary Anning</u> (1799-1847) was a famous English fossil hunter. The cliffs near where she lived in Dorset, England, are rich in fossils from the Jurassic Period. Anning's first fossil discovery was a marine reptile that swam in the time of the dinosaurs.



<u>Charles Darwin</u> (1809 - 1882) was an English naturalist who changed the way humans viewed themselves and the world around them through his amazing ideas on evolution and natural selection. In 1831, when Darwin was a young man of 22, he travelled to the Galapagos Islands aboard the HMS Beagle. While he was there, he started studying the local fauna, and in so doing started developing the **Theory of Evolution**.

Vocabulary		
Evolution the process by which living things can gradually change over time	Inheritance when a living thing reproduces and passes on genetic information to its offspring	Adaptation a trait which is changing to increase a species chance of survival
Environment the surroundings or conditions that a living organism finds themselves in	Habitat a natural environment that an animal lives in	Offspring the product of the reproductive processes of a person, animal, or plants
Palaeontologist a person who studies plants and animals that lived millions of years ago	Variation the differences between individuals within a species	Characteristics the distinguishing features or qualities that are specific to a species
Fossil the remains or imprint of a prehistoric plant or animal embedded in rock and preserved	Adaptive Traits genetic features that help a living thing to survive	Inherited Traits the traits you get from your parents e.g. eye colour

Quiz

- 1. Tell me two adaptations of a camel.
- Why are advantageous characteristics more likely to be passed down?
- 3. What can we learn from fossils?
- 4. What is the difference between inherited and acquired characteristics?
- 5. What was the name of the ship Charles Darwin travelled on when he visited the Galapagos Islands?
- 6. Define: 'fossil'

Subject/Conceptual knowledge/skills:

PSHE: Valuing differences Recognising and celebrating differences; recognising and reflecting on prejudice-based bullving; understanding bystander behaviour

LEAPS:

I can...

- Recognise that bullying and discriminatory behaviour can result from disrespect of people's differences;
- Suggest strategies for dealing with bullying, as a bystander;
- Describe positive attributes of their peers;
- Know that all people are unique but that we have far more in common with each other than what is different about us;
- Consider how a bystander can respond to someone being rude, offensive or bullying someone else;
- · Understand and explain the term prejudice;
- Identify and describe the different groups that make up their school/wider community/other parts of the UK;
- Describe the benefits of living in a diverse and explain the importance of mutual respect for different faiths and beliefs and how we demonstrate this.
- Explain the difference between a friend and an acquaintance;
- Describe the benefits of other types of relationship (e.g. neighbour, parent/carer, relative).
- Recognise how the media can sometimes reinforce gender stereotypes;
- Challenge stereotypical gender portrayals of people.

Core Knowledge

British Values:

- Democracy
- The rule of law
- Individual liberty
- Mutual respect for and tolerance of those with different faiths and beliefs, and for those without faith.

Mutual respect means 'to value someone highly for what they say or do' or 'to treat



people politely and thoughtfully, to show we value them.'

How to deal with bullying/cyberbullying:

- Report it and block people:
 If someone's harassing or bullying you online, you can report it.
- Tell someone at school
- Practise being assertive Being assertive means standing up for yourself without being aggressive.
- Get support from someone you trust: You don't have to cope with bullying alone.

Subject Key Vocabulary

British Values, bullying, respect, tolerance, relationships, discrimination, behaviours, strategies, positive attributes, diversity, unique, differences, bystander, differences, prejudice, community, self- esteem, decision, friend, acquaintances, strong, positive, friendship, stereotypes, gender, media, expectations

Subject/Conceptual knowledge/skills:

Computing: IData

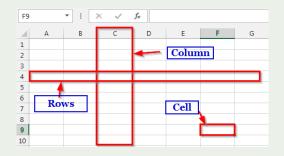
Information Technology

LEAPS:

- I can enter formulae to calculate totals. store numerical values in spreadsheets (cells).
- I know that graphs and charts can be created and changed easily through spreadsheet input.
- I know that the SUM function can be used to create formulas.
- I can use a spreadsheet to model a costing exercise.

Core Knowledge

Information in a spreadsheet is entered into cells. Cells on a spreadsheet are identified using a cell reference.



Formula in a spreadsheet must start with an equals sign

Subject Key Vocabulary

Spreadsheet, cells, cell reference, problems, solve, formula, sum, formula bar, cell, calculate, chart, graph, formulae, SUM, modelling, variables

Subject/Conceptual knowledge/skills:

Music: Singing

LEAPS:

- I can begin to hold harmony parts when singing as part of a group.
- I can follow hand signals from a conductor, responding with accurate timing, entries and with expression.

Core Knowledge

The Nutcracker

- Pyotr Ilyich TchaikoAvski
- Waltz of the Flowers

Harmony - when 2 or more notes are played at the same time. Ensemble singing describes how a choir of many voices blends together to sound like one big voice

Subject Key Vocabulary

Harmony, crescendo, melody, pitched and unpitched percussion, pulse, ensemble



Subject/Conceptual knowledge/skills:

PE: Netball

LEAPS:

- I can confidently vary skills, actions and ideas and link these in ways that suit a range of games.
- I can confidently demonstrate a range of ball skills and can link these together effectively e.g. sending, receiving, shooting the ball the score.
- I can keep possession of a ball during games situations.
- I can consistently apply and demonstrate co-ordination, control and fluency skills.
- I can take part in a range of invasion/competitive games with a strong understanding of tactics and composition (KS2 games overview doc.).
- · I can modify competitive games.
- I can compare and comments on skills to support creation of new games.
- I can apply knowledge of skills for attacking and defending effectively.
- I can run, jump, throw and catch in isolation and combination.

Core Knowledge

Netball is a non-contact team sport that includes players attempting to score points by getting the ball into their opponent's net. Each team consists of seven players, and the game is played on a rectangular court.

Bounce pass - A bounce pass is a short pass that enables the player to find a teammate in a crowded area. The height of the ball makes it difficult for the opposition to reach and intercept

A chest pass is a very fast and flat pass. This enables a team to move quickly up a court in a precise and accurate fashion.

A shoulder pass is a very dynamic, fast and long pass. This enables a team to switch positions on court very quickly to either find a player in space or break defensive screens.

Subject Key Vocabulary

7 - positions: Goal Keeper (GK), Goal Defence (GD), Wing Defence (WD), Centre (C), Wing Attack (WA), Goal Attack (GA), Goal Shooter (GS), technique, invasion game, attacking, defending

<u>Subject/Conceptual</u> knowledge/skills:

French: The Weekend

LEAPS:

- I can ask what the time is in French.
- I can tell the time accurately in French.
- I can say what I do at the weekend in French
- I can integrate connectives into my work.
- I can present an account of what I do and at what time at the weekend

Subject Key Vocabulary

- The Weekend = Le Week-end
- Et quart = quarter past
- Et demie = half past
- Moins le quart = quarter to
- Je me lève = I get up
- Je prends mon petit déjeuner = I have my breakfast
- Je regarde la télé = I watch TV
- Je lis des bandes dessinées = I read comic books
- J'écoute de la musique = I listen to music
- Je joue à l'ordinateur = I play on the computer
- Je joue au foot = I play football
- Je vais à la piscine = I go to the swimming pool
- Je vais au cinéma = I go to the cinema
- Je me couche = I go to bed
- Après = After
- Et = And

Subject/Conceptual knowledge/skills:

RE: Christianity: Christmas - Incarnation

Do Christmas celebrations and traditions help Christians understand who Jesus was and why he was born?

LEAPS:

- I can start to explain how some of the ways I choose to celebrate are directly linked to the event I am celebrating and how other ways are not.
- I can describe some of the ways that Christians would celebrate Christmas and start to understand which of these would help them understand who Jesus was and why he was born.
- I can explain that people may celebrate Christmas in different ways and say whether or not I feel this relates to Jesus.

Core Knowledge:

Christians believe Mary did not choose to have a baby. This choice was made for her, by God. A virgin was chosen so that it was obvious that Jesus was not just a human with 2 human parents but was also God. The Incarnation (Jesus is God on earth in human form) is a key belief in Christianity. Christian's celebrate the arrival of Jesus as God's Son - The Incarnation. They are grateful because they believe Jesus brought to earth a message from God about how to live a good life. Christians believe that through his death and resurrection Jesus would grant all of humanity a fresh start and He was God "incarnate" (God made man).

Subject Key Vocabulary:

Christmas, Jesus, Mary, Joseph, Wise Men, Gifts, Incarnation, Celebration, Tradition, Salvation, Divinity