Science Knowledge Organiser

Year 5 Spring 2

Life Cycles and Reproduction

Asexual Reproduction

- The parent plant creates an exact copy of itself without involving other plants
- Natural methods include **runners, tubers, budding** and **bulbs**
- Forced methods (by humans) include **cuttings**, layering and divisions


runner


bulbs

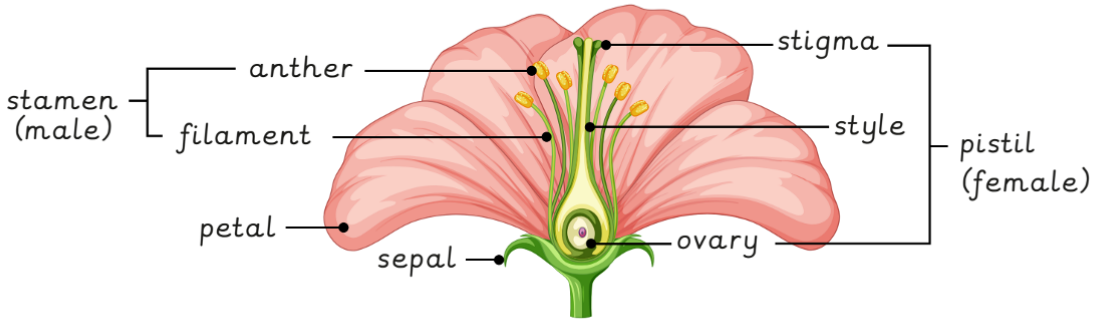

budding


cutting


tuber

Sexual Reproduction

- Pollen is transferred from the male anther of one flower to the female stigma of a flower on another plant
- Pollen can be transferred by insects, wind or other animals
- **Fertilisation** happens when the male **pollen** reaches the **ovary** and combines with the female ovules
- The fertilised ovule then develops into a seed, which can be dispersed by wind, air or animals
- Seeds can then grow into new plants, starting the plant life cycle again



Design & Technology Knowledge Organiser

Year 5 Spring 2

Textiles – Stuffed Toys

Vocabulary	
Accurate	Neat, correct shape, size and pattern with no mistakes
Annotate	To add notes to explain your plan or design
Appendage	Something attached to a larger or more important thing
Blanket-stitch	A sewing technique that joins two pieces of fabric together
Design criteria	To help designers focus their ideas and test the success of them
Detail	The small features of an object
Evaluation	When you look at the good and bad points about something, then think about how you could improve it
Fabric	A natural or man-made woven or knitted material, that is made from plant fibres, animal fur or synthetic material
Sew	To join or fasten by stitches made using a needle and thread
Shape	The form of an object
Stuffed toy	A shape of outer fabric sewn together and filled with flexible material. They are also known as plush toys or stuffed animals.
Stuffing	Soft material used to fill cushions and stuffed toys
Template	A stencil made of metal, plastic, or paper, used for making many copies of a shape or to help cut material accurately (e.g. biscuit cutter)

Key Facts

There are different techniques to use in a design such as cross-stitch, running-stitch, blanket-stitch and applique.

Applique is a type of textiles work where small pieces of cloth are sewn or stuck in a pattern onto a larger piece.

The blanket-stitch is used to reinforce the edge of a fabric material or to securely join two pieces of fabric together.

Did you know?

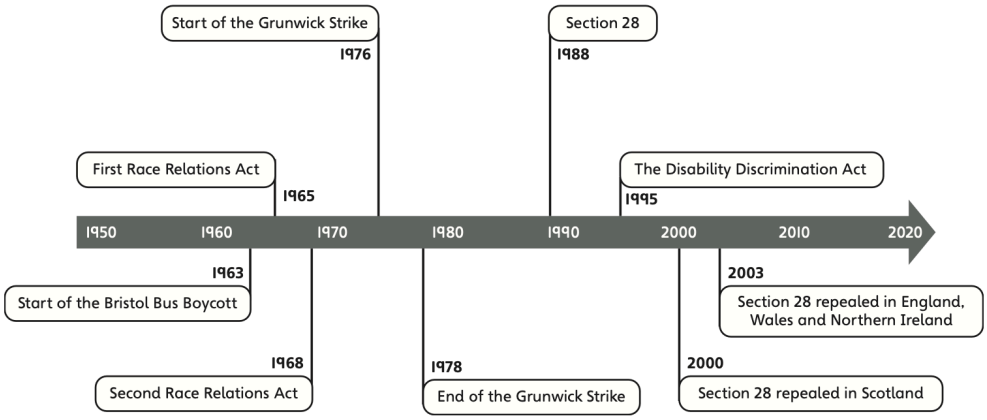
The teddy bear was invented in honour of Theodore Roosevelt, the 26th US President, in November, 1902.

Be very careful when threading the needle through the fabric, watch your fingers and ask an adult if you're unsure.

History Knowledge Organiser

Year 5 Spring 2

Changing Britain



Key people	
Paul Stephenson	A leader of the Bristol Bus Boycott
Raghbir Singh	Bristol's first non-white bus conductor
Jayaben Desai	Leader of the Grunwick Strike
Booan Temple and Sally Francis	Protestors against Section 28
Barbara Lisicki and Alan Holdsworth	Campaigners for rights for disabled people

Key laws	
Disability Discrimination Act	Made it illegal to discriminate against people due to disability
First Race Relations Act	Made discrimination based on race illegal in public places
Second Race Relations Act	Made it illegal to discriminate against somebody because of the colour of their skin
Section 28	Made it illegal for schools to teach children about same-sex relationships

Vocabulary	
Boycott	Refusing to use a particular product or service
Campaign	A set of actions to try and achieve a goal
Discrimination	Unfair treatment of people due to characteristics they can't change, such as race, ethnicity, gender, sexuality, age, religion or disability
Disrupt	Stop something from working normally
Homophobia	Fear or hatred of, and discrimination against, people who are LGBTQ+ (lesbian, gay, bisexual, transgender, queer or non-heterosexual)
Protest	An action that is taken to try to force change
Race	A group that people are considered to belong ton, based on features such as skin colour or eye shape
Racism	A belief that some races are superior to others, leading to discrimination against certain races
Repeal	Cancel an existing law
Sexuality	Describes what type of person someone is attracted to; examples include heterosexual, gay, lesbian, bisexual
Strike	When workers refuse to try to force employers to make a change to the working conditions

Question:

Qu'est-ce que tu portes ?

What are you wearing?

Answer:

Je porte … et …

I'm wearing/I wear … and …

4 scenarios:

À l'école…

At school…

À la maison…

At home…

En été…

In summer…

En hiver…

In winter…

15 items of clothing:

un T-shirt

un pull

un manteau

un pantalon

un short

une chemise

une robe

une jupe

une casquette

une écharpe

des gants

des chaussettes

des chaussures

des baskets

des lunettes de soleil

10 colours:

bleu

noir

vert

gris

violet

blanc

rouge

jaune

orange

marron

LANGUAGE ANGELS

Note: Use the Colour Grid to check how colours change in French according to gender/plurality .

Colour Grid

	masculine singular	feminine singular	masculine plural	feminine plural
	bleu	bleue	bleus	bleues
	noir	noire	noirs	noires
	vert	verte	verts	vertes
	gris	grise	gris	grises
	violet	violette	violets	violettes
	blanc	blanche	blancs	blanches
	rouge	rouge	rouges	rouges
	jaune	jaune	jaunes	jaunes
	orange	orange	orange	orange
	marron	marron	marron	marron

Tag Rugby Knowledge Organiser - Year 5

Prior Learning: In Year 4 children were introduced to passing the ball in different directions. They also learned how to run with the ball and recapped how to hold the ball correctly. They were introduced to scoring a try. They played a variety of tagging games and learned how to avoid getting tagged. They were also introduced to Tag Rugby games and rules.

Key Skills

Physical Me

Throw

Catch

Dodge

Run

Speed

Agility

Balance

Co-ordination

Thinking Me

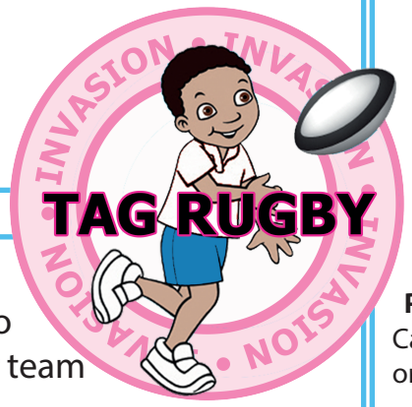
- To improve my skills
- To make decisions in a game

Value Me:

-Determination

Social Me

- Communication
- Mini Coach
-Supporting others



Key Knowledge

Pick up - If the ball is legally passed but goes to ground, play will continue and either team may pick up the ball

Underlapping - To support play by running behind your teammate

Agility- In rugby you need to be able to change direction quickly to avoid being tagged. You also need to do this while holding a ball.

Loop- Pass the ball to my teammate, run behind them and receive the next pass.

Tag Rugby Rules:

No of players in a team:
Only 7 on pitch at a time

Pass:
Never pass forwards!
Run forwards, pass backwards.

Tagging:
Remember to stop when a tag has been taken from your belt

The tagger must not throw the tag, it must be handed back

The player that is tagged has 3 seconds to pass the ball sideways or backward to another teammate.

Possession:
Can only be gained by interception, or catching a loose pass

Scoring:
- A try is scored by the attacking team when they place the ball on the ground on or over the try line.
- A try is worth one point
- You must place the ball past the try line with two hands and stay on your feet (no diving)

Out of play
If the ball goes off the pitch it is a free pass to the appropriate team

Key Vocabulary

- Agility
- Directions
- Pick up
- Loop
- Underlapping
- Dodge
- Match
- Avoid
- Intercept

Kwik Cricket Knowledge Organiser - Year 5

Prior Learning: In Year 4, children continued to master throwing and catching a ball over a variety of distances. They recapped how to stop a ball using the long barrier method . They recapped how to hit a ball off a tee. They played an adapted version of kwik cricket.

Key Skills

Physical Me

Throw/bowling - Underarm/overarm

Throwing and Catching- Varying distances

Running- Chasing the ball when fielding
- Scoring runs, running to support

Co-ordination -Hand-eye (catching and hitting the ball)
- Throwing at a target

Balance- when batting, bowling, fielding

Thinking Me

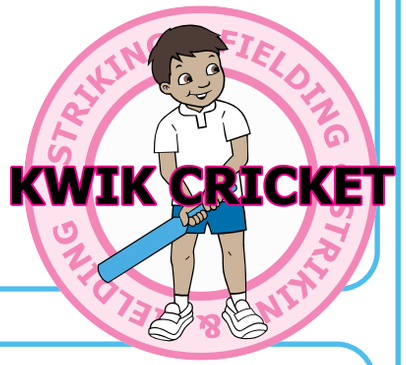
- To improve my performance

Value Me:

- Inspire
- Gracious

Social Me

- Communicate
- Co-operate



Key Knowledge

Wide: If a bowled ball passes outside either cone to the left or right of the wicket it is called 'wide'l, and the batter is given another go.

Over - There are 6 balls bowled in an over

Runs - In cricket, a run is term for scoring. The team with the most runs wins in many versions of the game

Speed- Meaning the speed at which bowler/thrower releases the ball

Wicket Keeper- Is the player in a cricket team who stands behind the wicket in order to stop balls that the batsman misses or to catch balls that the batsman hits

Kwik Cricket (Pairs)

- 1 pair starts as the batters.

- Each batting pair starts with 20 runs and receives 12 balls (6 balls each- an over)

- 1 pair starts as the bowler and wicket keeper.

- The other pairs start as the fielders.

-If "wide" bowl is called and the batters receive 1 run and an extra ball is bowled.

- Once the bowler has had 6 balls they swap places with their partner, (the wicket)keeper and they have their 6 balls.

- Players can bowl underarm or overarm

After 12 good balls (wide balls do not count). Players rotate around.

Batters can run when they feel it is appropriate: they score 1 run each time. Both players make it to the opposite wicket: there are no boundaries

Batters lose 2 runs each time they are bowled out, caught out, run out by their partner, or if the fielding team hits the wicket.

Key Vocabulary

- Inspire
- Fielders
- Speed
- Distance
- Wide
- Wicket Keeper
- Over
- Runs
- Fair Play

Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 5.1
Coding

Key Learning

- To begin to simplify code.
- To create a playable game.
- To understand what a simulation is.
- To program a simulation using 2Code.
- To know what decomposition and abstraction are in computer science.
- To a take a real-life situation, decompose it and think about the level of abstraction.
- To understand how to use friction in code.
- To begin to understand what a function is and how functions work in code.
- To understand what the different variables types are and how they are used differently.
- To understand how to create a string.
- To understand what concatenation is and how it works.

Key Resources

purple mash

Tools

2Dos

2Chart


Free code gorilla

Key Vocabulary

Abstraction
A way of de-cluttering and removing unnecessary details to get a program functioning.

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

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

Concatenation
The action of linking a mixture of strings, variable values and numbers together in a series.

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

Decomposition
A method of breaking down a task into manageable components. This makes coding easier as the components can then be coded separately and then brought back together in the program.

Efficient
In coding, simplified code runs faster and uses less processing memory, it is said to be more efficient.

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

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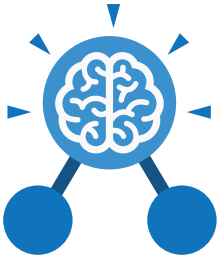


Unit: 5.1
Coding

Key Vocabulary

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**) or when objects interact (collision). In 2Code, the event commands are used to create blocks of code that are run when events happen.

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

Physical System
In this context, this is any object or situation that can be analysed and modelled. For example modelling the function of a traffic light, modelling friction of cars moving down surfaces or modelling the functions of a home's security system.

Function
A block or sequence of code that you can access when you need it, so you don't have to rewrite the code repeatedly. Instead, you simply '**call**' the function each time you want it.

Object
Items in a program that can be given instructions to move or change in some way (action). In 2Code Gorilla, the **object type**s are button number, input, text, shape turtle, character, object, vehicle, animal.

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

Selection
A conditional decision command. When selection is used, a program will choose which bit of code to run depending on a condition. In 2Code selection is accomplished using '**if**' or '**if/else**' statements.

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.

Output
Information that comes out of the computer e.g. **sound**, **prompt**, **alert** or **print to screen**.

Repeat
This command can be used to make a block of commands run a set number of times, until a condition is met or forever.

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

Simplify
In coding this is used to describe modifying the code to complete the same process with less lines of code.

Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 5.1
Coding

Key Vocabulary

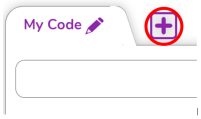
Timer
Use this command to run a block of commands after a timed delay or at regular intervals.

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. In 2Code, variables can be **strings**, **numbers** or **computer-generated** variables to control objects of a type.

Key Images

Open design mode in 2Code.

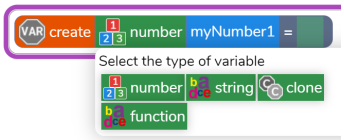
Switch to code mode in 2Code.



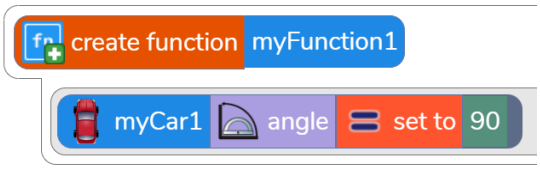
Add a new Tab to your code

A change variable block.

Example of combining variables and strings to print to the screen



Creating a variable in 2Code



Creating a function in 2Code

Calling a function in 2Code

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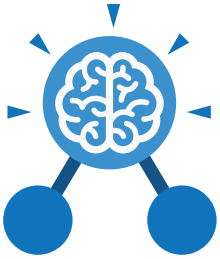

Unit: 5.1
Coding

Key Questions

What does simulating a physical system mean?

Creating a program where the objects behave as they would in the real world. For example, a football program that uses angles, speed and friction to simulate kicking a football. When simulating a physical system, you first must break the system down into parts that can be coded (decomposition). The different parts will come together to make the full simulation.

Describe how you would use variables to make a timer countdown and a scorepad for a game.

Timer countdown:
Create a timer variable and set it to the starting number of seconds. Add a Timer command that repeats and subtracts 1 every second. Add a text object in design view to display this number.

Score:
Create a variable to store the score, each time the user gains a point, change and display the value of the variable.

Give examples of how you could use the Launch command in 2Code.

Clicking on a button or other object in the program to opens another 2Code program or a webpage.

What do the terms decomposition and abstraction mean? Use examples to explain them.

Decomposition is breaking a task into its component parts so that each part can be coded separately.
If you were coding a game of chess, you could decompose into the moves of the different pieces and the setup of the playing space.
Abstraction is removing unnecessary details to get the program functioning. In the example, the colour and size of the squares is not important to game play.

Purple Mash Computing Scheme: Knowledge Organiser

Year 5
Databases

Key Learning

- To understand what a database is.
- To design and create a database.
- To build queries to find information.
- To solve problems using a database.

Key Resources

2Investigate

Key Vocabulary

Condition
A condition is a rule you give to a database to help it find the right information.

Data
A set of facts or information that help us learn something or make decisions.

Database
A set of data that can be held in a computer in a format that can be searched and sorted for information.

Edit
To change, add or remove data from a record.

Field
A heading in a database record against which data is entered.

Filter
Filtering what information is shown according to any filter rules applied.

Group
Putting similar pieces of information together in a database so it is easy to read and understand.

Linked Tables
A database can contain more than one table which can be linked together so a query can include information from the linked tables.

Operator
An operator tells a database what to do with data when someone is making a query. Such as: Find everyone whose score 'is equal to' 10.

Query
A user will run a query to find specific information in a database.

Record
A collection of related data or information that is stored together as a single unit.

Sort
Organising data by a rule such as alphabetical or numerical.

Validation
A field can have specific data types such as numbers, letters, dates and times which helps minimise input errors.

Purple Mash Computing Scheme: Knowledge Organiser

Year 5
Databases

Key Images

Add record


Edit record


View mode

Create query


Database Design

Report

Key Questions

What do databases help us do?

Databases help organise data into one place. Data can be added, stored and retrieved by more than one person. When data is retrieved it can be combined to form information that someone might wish to find out. It is much quicker, more convenient and can be used by many people.

What is a query?

A query is the word used instead of question when using databases. Someone will create a query to find the answer to something they want to know.

What does a record contain?

A record contains fields of data that form information about something or someone. A database will contain lots of records. For example, a database record could be a record on one child at a school that has fields: name, age and class.

What does the AND operator help someone do?

The AND operator joins rules (conditions) together. Using AND means all the conditions have to be met. AND helps someone find specific information (records).

How can errors be kept to a minimum when entering data into a database?

Fields can have the data types entered into them set. Additionally, constraints such as always required or has options can be used.

Why might a database need more than one table?

It can get very messy and confusing for users of a database if all data is kept in one table. For example, a vet surgery might need a table on the pets and a separate table on the customers.

Knowledge Organisers

SCARF

Year 5 - Being My Best

Key questions

Growing Independence and Taking Responsibility

How does someone become more independent as they grow older?

What responsibilities do teenagers have?

Does having more independence mean having more responsibility? Why?

Media Awareness and Safety

Are media images of celebrities true? How can media images of celebrities make someone feel?

What non-physical qualities make people attractive? Why?

Key vocabulary

perseverance media-influence
kindness celebrities
independence patience
resilience consideration
confidence
personal qualities

I can ...

I can give an example of when I have had increased independence and how that has also helped me to show responsibility.

I can name several qualities that make people attractive that are nothing to do with how they look, but about how they behave.