Knowledge Organiser • Rock Cycle • Year 4

Vocabulary

Mineral	A natural substance that makes up rock.
Rock	Made from one or more minerals.
Magma	Hot liquid rock.
Organic matter	Made up of both living and decaying animals and plants.
Hard	Resistant to scratching and pressure.
Density	How compact an object is.
Permeable	Allows water to pass through.
Erosion	Wind and rain gradually wear down rocks forming sediment.
Sediment	Small pieces of land that break down. The sediment can be grains of sand, mud, pebbles, minerals, fossils or plants.

Types of rock

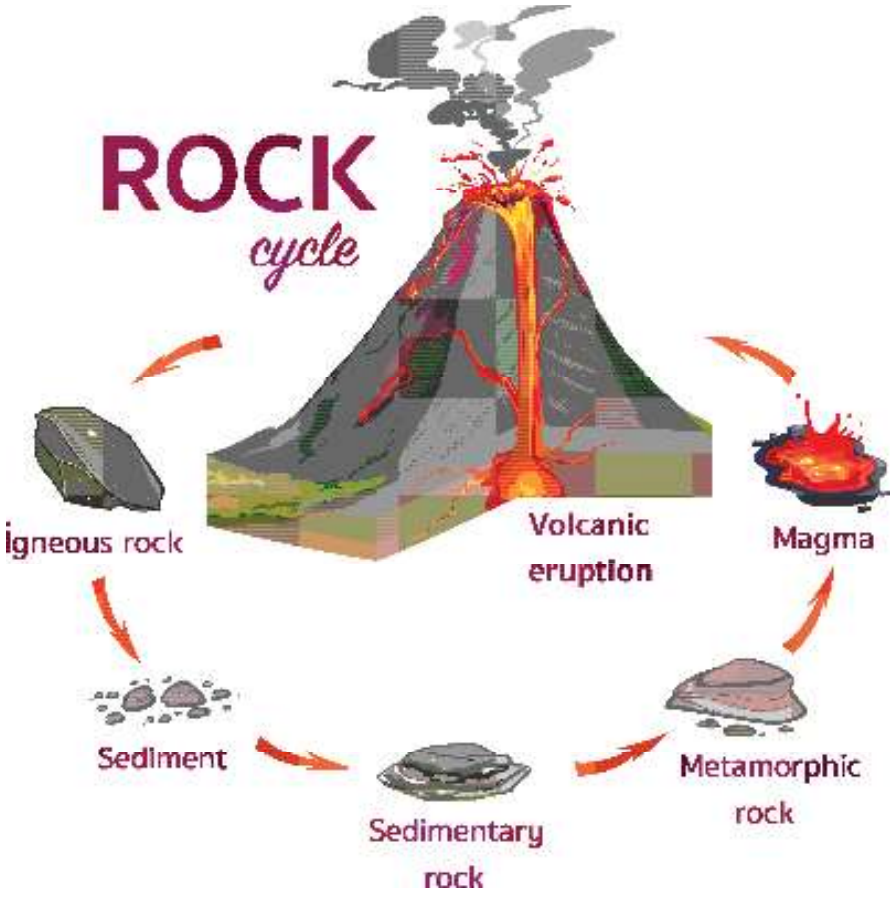
Igneous rock	Made when magma cools to form rock.
Sedimentary rock	Made when layers of sediment settle on top of each. Over millions of years the bottom layers turn into rock.
Metamorphic rock	Heat and pressure inside the earth can change igneous and sedimentary rock into metamorphic rock.

Weathering processes

Physical weathering	Caused by physical processes such as changes in temperature, freezing and thawing, and the effects of wind, rain and waves.
Chemical weathering	Caused by rain water reacting with the mineral grains in rocks to form new minerals (clays) and soluble salts.
Biological weathering	Caused by animals and plants. For example, rabbits and other burrowing animals can burrow into a crack in a rock, making it bigger and splitting the rock.

Fossilisation process

1.	Animal dies, its skeleton settles on the sea floor and is buried by sediment.
2.	The sediment surrounding the skeleton thickens and begins to turn to stone.
3.	The skeleton dissolves and a mould is formed.
4.	Minerals crystallise inside the mould and a cast is formed.
5.	The fossil is exposed in the Earth's surface.



Knowledge organiser

Vocabulary	
Clean energy	Energy processed in a way that does not cause pollution or release much carbon dioxide
Climate	General or average weather conditions over a very long period of time
Exports	Products that a country produces and sells to other countries
Fossil fuels	Coal, oil and gas: fuels that are formed from the remains of plants and animals changed by millions of years of heat and pressure
Mining	Digging up natural resources so they can be used
Natural resources	Materials used by humans that are formed naturally
Non-renewable	Able to run out; not able to be reproduced effectively
Pollution	Harmful substances released into the environment
Renewable	Not able to run out; always available
Reserves	Quantities of a substance not yet used

Ten important natural resources

Natural resource	What is it?	What is it usually used for?
Air	Mixture of gases	Breathing and photosynthesis
Coal	Fossil fuel: solid	Energy
Cobalt	Metal	Engines
Gold	Metal	Jewellery and electronics
Natural gas (mainly methane)	Fossil fuel: gas	Energy
Oil	Fossil fuel: liquid	Energy
Soil	Biomass	Agriculture
Uranium	Metal	Nuclear energy
Water	Liquid	Sustaining life on the planet
Wood	Biomass	Building homes and burning for fuel

Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 4.11
micro:bit

Key Learning

- To understand how sensor inputs from the accelerometer can be used to detect movement, such as when a step is taken.
- To understand how variables can be used to keep track of things in a program.
- To understand how inputs, outputs and computer code work together to make control systems.
- To understand what logic is and how it can be used to make different outputs happen according to different inputs.
- To be able to make a control system and game.

Key Resources

purple mash

2Dos

2Dos

micro:bit

Freecode micro:bit

Key Vocabulary

Accelerometer
A sensor that detects movement.

Data
A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making.

Gestures
A type of input where the micro:bit is moved in different ways such as tilting, dropping, shaking.

Infinite loop
A loop that runs forever.

Light sensor
An input that senses the level of light in the real world.

Logic
How computers make decisions based on whether things are true or false.

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

Sensor
An input that senses things in the real world, such as movement, temperature, and light levels.

Simulation
A program that models a real-life situation. They let you try things out that would be too difficult or dangerous to do in real life.

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.

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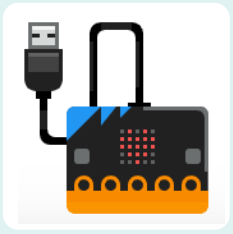
Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 4.11
micro:bit

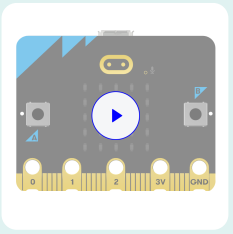
Key Images

Open, close or share a file.

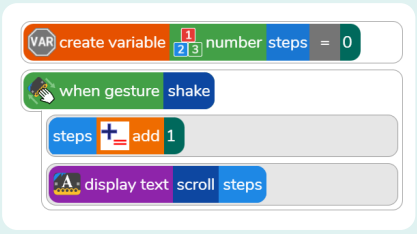
Save your work.



USB transfer.



Test code using simulator.



An event triggered by a gesture which adds 1 to the variable 'steps' and outputs this number.

Logic - IF/ELSE.

A variable called 'dicenumber' set to random number 1 to 6

Key Questions

How can sensors, code and outputs work together?

When using micro:bit a user can program the device to sense the environment around it. When particular environmental conditions are met such as the accelerometer detecting movement, code written can then trigger an output response such as displaying a message.

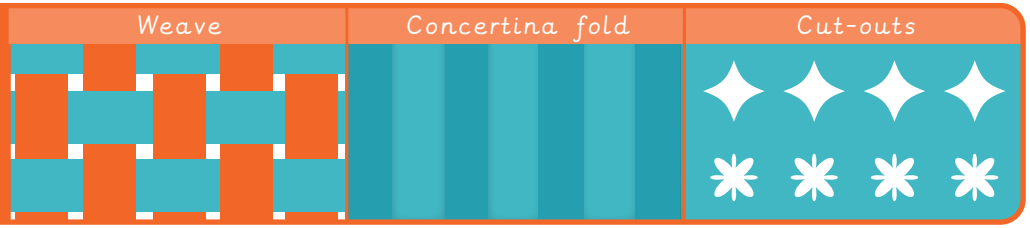
What examples can you think of a good use for variables when programing micro:bits?

Variables are places in a computer memory that store information and can have their content changed by a program.
An example of this might be creating a variable that stores the number of times a micro:bit's accelerometer is triggered. Each time the accelerometer is triggered, the variable count is changed and then this number is outputted to the micro:bit LED.

Structure - Pavilions

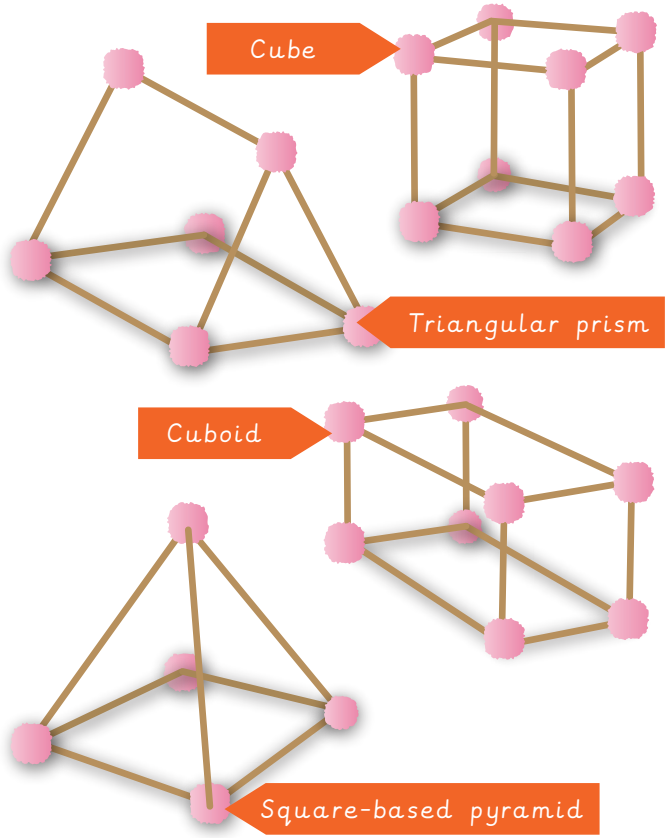
Aesthetic	How an object or product looks.
Cladding	A material put on top of another material or on a structure as protection or to improve appearance.
Design criteria	A set of rules to help designers focus their ideas and test the success of them.
Evaluation	When you look at the good and bad points about something, then think about how you could improve it.
Frame structure	A way of building something so that the inside supports are built first and the outside covering is added afterwards as cladding.
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).
Inspiration	To gain ideas from different sources such as the internet, magazines and books.
Pavilion	A decorative building or structure for leisure activities.
Reinforce	To make a structure or material stronger, especially by adding another material or element to it.
Stable	Object does not easily topple over.
Structure	Something that has been made and put together and can usually stand on its own (e.g. a building, a bridge, a chair).
Target audience	A person or particular group of people at whom a product is aimed.
Target customer	A person or particular group of people who you expect to buy the product.
Texture	The way that something feels when you touch it (e.g. soft, rough, smooth).
Theme	An idea or specific design that your product or structure is based on (e.g. space-themed).

You can create all sorts of **textures** for your **cladding** designs using different materials and techniques.



Key facts

There are variety of ways to assemble a **frame structure**.



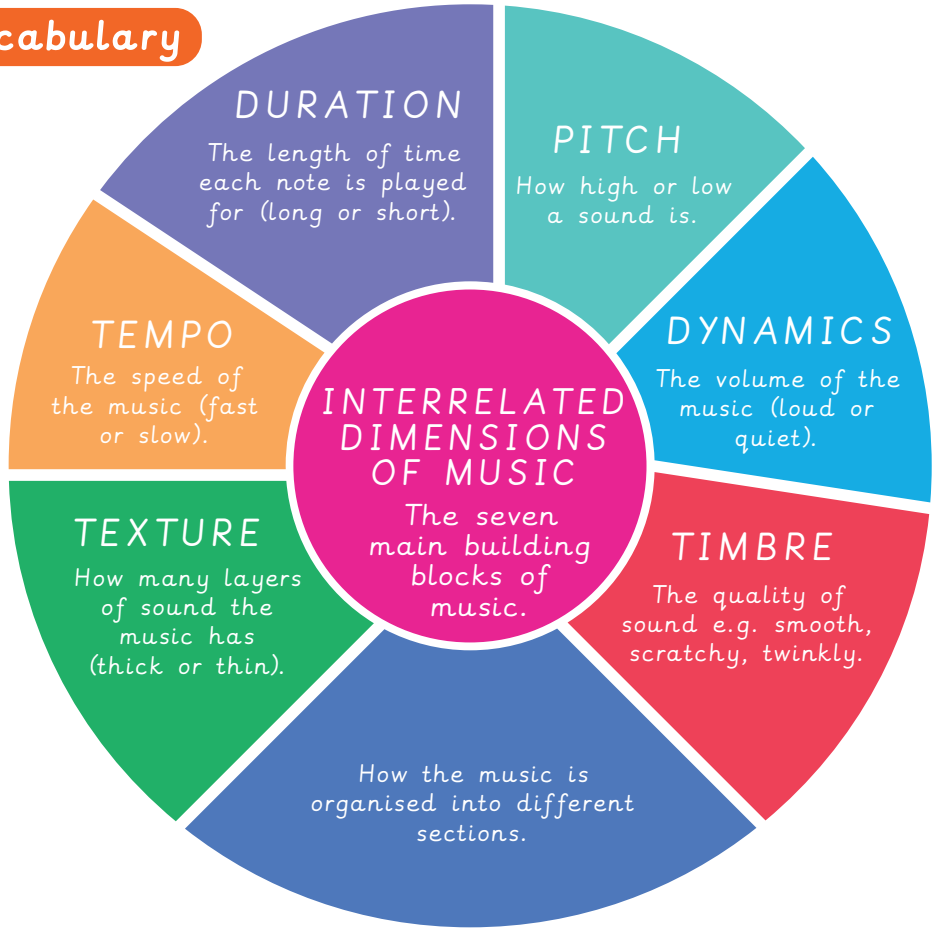
What materials and equipment could you use to make your **structure**?

Year 4: Body and tuned percussion (Rainforests)

Musical style: Body percussion

Body percussion is a style of music where you use your body to make sounds. You can make many different sounds by slapping, hitting, stamping, and rubbing!

Vocabulary



Appraising	Assessing and discussing a performance or piece of music.
Melody	Notes of different pitches played in a sequence to create a tune.
Rhythm	A pattern of long and short sounds (and silences) within a piece of music.
Contrast	An obvious difference.
Layers	The different instruments, rhythms or melodies that build the overall texture.
Transition	Music that links one section of a piece of music to another.

Basketball Knowledge Organiser - Year 4

Prior Learning: In Year 3, children learned how to find space with and without the ball. They learned how to control and dribble the ball correctly with their preferred hand. They learned how to pass and receive using SEP. They learned how to move the ball around their body with control using fingertips and thumbs. They also played adapted basketball games and mini basketball 3v3.

Key Skills

Physical Me

Throw

Catch

Dodge

Jump

Dribble

Agility

Balance

Co-ordination

Run

Speed

Thinking Me

- To make decisions in the game

Value Me:

- Teamwork
- Perseverance

Social Me

- Embrace the rules
- Communicate

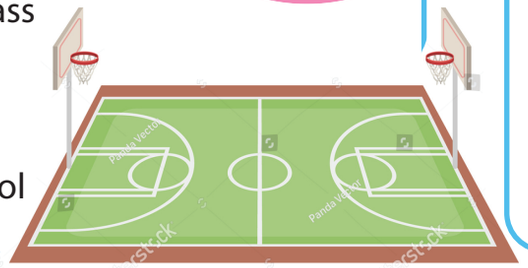
Key Knowledge

Passing- Chest pass and Bounce pass

Intercept - Stopping an opposing player passing to a teammate

SEB - A way to remember a bounce pass Step (forward), Extend (arms), Bounce (pass)

Familiarisation- To develop ball control



Our Basketball Rules:

Double Dribble:
When a player dribbles the ball with two hands at the same time
or starts to dribble again after stopping

Out of Bounds:
If a team lose possession of the ball and it goes out of bounds, then a free pass is awarded to the opposition

Tip Off:
To re-start or put the ball in play by throwing it up between two opponents

Travelling:
When a player takes too many steps with the ball in their hands without dribbling the ball.

Key Vocabulary

- Familiarisation
- Tip off
- Double Dribble
- Non-preferred
- Non-contact
- Challenge
- Competition
- Intercept
- Embrace

Gymnastics Knowledge Organiser - Year 4

Prior Learning: In Year three, children began to develop jumps with a turn: quarter, half, three quarters and full. They recapped rolls and they were introduced to the teddy bear roll and practiced these on their own and in pairs. They developed their bunny hops over a distance and on low apparatus. They also practiced balancing (points and patches). They created sequences in pairs and transferred these skills on to a variety of apparatus.

Key Skills

Physical Me

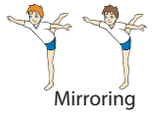
- **Travelling**

- **Rolls**

Teddy bear roll in pairs/4's

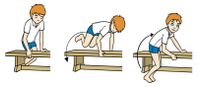
- **Balances**

Matching



Mirroring

- **Bunny hops onto low apparatus**



- **Movement onto Apparatus**

- **Sequences- in pairs/fours**

Thinking Me

- Linking skills
- Providing feedback
- Observing

Value Me

- Courtesy
- Passion

Social Me

- Co-operate
- Communication
- Mini Coach
- Team work

Gymnastic Events

- Floor
- Vault
- Rhythmic
- Tumbling
- Acrobatic

Inspirational Athlete

Beth Tweddle:

Renowned for her uneven bar and floor routines, she was the first female gymnast from Great Britain to win a medal at the European Championships, World Championships, and Olympic Games.

Key knowledge

Travelling - Different ways of moving in a sequence linking one skill to the next.

Matching - Performing exactly the same movement at exactly the same time as another gymnast.

Mirroring - A pair of gymnasts perform the same movements in a mirror image of each other.

Elements - Each gymnastic skill being performed.

Body Tension - Gymnast squeezes their muscles to make them strong when performing their skills. Good body tension gives the gymnast control when performing.

Key Vocabulary

Matching	Mirroring	Static
Elements	Fluency	Apparatus
Body Tension	Sequences	Sashay

Knowledge Organiser

SCARF

Year 4 - Valuing Difference

Key questions

Recognising and Celebrating Difference (Incl Religions and Cultural Difference)

How are people different, besides how they look?

Does being different cause problems? Why?

Can people being different be positive? Why?

Understanding and Challenging Stereotypes

How do we label people?

Why do we label people?

What is a stereotype?

How does someone feel if they have been labelled?

Does labelling someone change them or affect them?

Why is it important to challenge stereotyping?

Key vocabulary

challenge labelled confidence stereotype negotiate unique positive compromise label prejudice differences invade similarities respect

I can ...

I can say a lot of ways that people are different, including religious or cultural differences.

I can explain why it's important to challenge stereotypes that might be applied to me or others.