



Topic	Science - Sound	Theme	Creation	Year Group	4
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Key Question	How do we hear and how are sounds made?				
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### What should I already know?

- Hearing is one of my five senses.
- Sounds can be combined using musical instruments.
- What the word vibration means.

### Key Learning

**Pitch:**

**High pitched** sounds are created by short **sound waves**.

**Low pitched** sounds are created by long **sound waves**.

**Volume:**

The closer you are to the **source** of the sound, the louder the sound will be.

The further away you are from the **source** of the sound, the **quieter** the sound will be.

### Key Vocabulary

amplitude	a measure of the strength of a <b>sound wave</b>
decibel	a measure of how loud a sound is
frequency	a measure of how many times per second the <b>sound wave</b> cycles
sound waves	invisible waves that travel through air, water and solid objects as <b>vibrations</b>
medium	something that makes possible the transfer of <b>energy</b> from one location to another
vibration	a quick back-and-forth movement
pitch	how high or low a sound is
volume	how loud or quiet a sound is
insulate	to protect something from the transfer of heat, sound or electricity

### What I will know by the end of the unit?

What is a sound?	Something that can be heard. The object that makes the sound is called the <b>source</b> .
How is a sound made?	When objects <b>vibrate</b> , a sound is made. The <b>vibration</b> makes the air around the object <b>vibrate</b> , and the air <b>vibrations</b> enter your ear. These are called <b>sound waves</b> . If an object is making a sound, a part of it is <b>vibrating</b> , even if you cannot see the <b>vibrations</b> .
How do sounds travel?	<b>Sound waves</b> travel through a <b>medium</b> (such as air, water, glass, stone, and brick). For example, if somebody is playing music in the room next door, the sound can travel through the bricks in the wall.
How do we hear sounds?	When an object <b>vibrates</b> , the air around it <b>vibrates</b> too. This <b>vibrating</b> air can also be known as <b>sound waves</b> . The <b>sound waves</b> travel to the ear and make the <b>eardrums vibrate</b> . Messages are sent to the brain which recognizes the <b>vibrations</b> as sounds.
How do we measure sound?	<b>Amplitude</b> measures how strong a <b>sound wave</b> is. <b>Decibels</b> measure how <b>loud</b> a sound is. <b>Frequency</b> measures the number of times per second that the <b>sound wave</b> cycles.

**decibel (dB)** - the measurement of the loudness of a sound

**decibel meter** - a piece of equipment used to measure the loudness of sound



Topic	Geography - Deserts	Theme	Creation	Year Group	4
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### What should I already know?

- The seven continents (including Antarctica) and five oceans of the world.
- Where the biomes are located and what the vegetation is like in each biome.
- Examples of some countries around the world and what the climate is like there.
- How seasonal changes can affect the weather and vegetation.
- Countries the arctic tundra can be found in.
- How polar biomes are being affected by climate change.
- What humans can do to help combat effects of climate change.

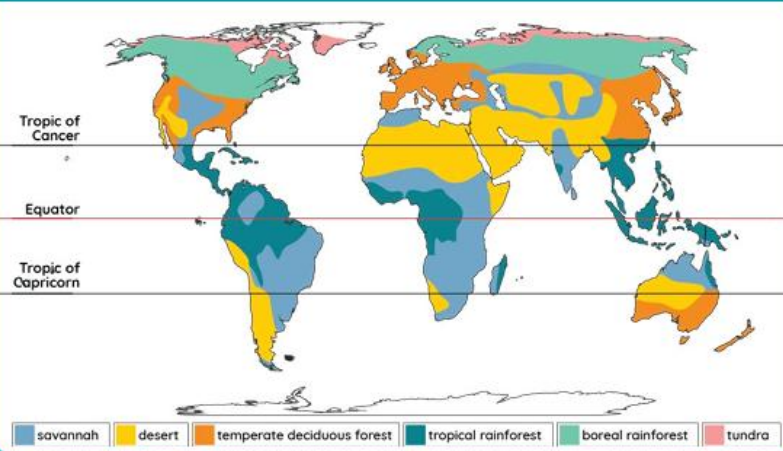
### Key Vocabulary

arid	Too little rain to support lots of vegetation.
barren	Land that cannot grow vegetation.
biome	An area of the world with a similar climate and landscape, where similar plants and animals live.
climate	Long-term weather conditions in a specific region.
desert	Any stretch of land with little to no rainfall and extremely sparse vegetation and wildlife.
mining	The process of digging up valuable minerals from the Earth's crust.
rainfall	The amount of rain falling in a place over a particular time.
ranching	Keeping animals on a large farm, particularly in America.
Renewable energy	Energy generated from a continuous source, such as wind or water.

### Key Learning

- Features of a hot desert biome include extremely dry conditions; little rainfall - less than 250 mm of rain annually; temperatures between -20 and 50°C; and sparse vegetation and wildlife, which include cacti, brittle brush, snakes, birds of prey and mammals like camels or coyotes.
- The largest hot desert in the world is the Sahara Desert. Other hot deserts include the Atacama Desert and the Mojave Desert.
- The Mojave Desert is in the United States, North America. It covers California, Nevada, Utah, and Arizona. The Mojave Desert is approximately seven hours behind the UK.
- Physical features in the Mojave Desert include mountains, such as Edgar Peak; nature reserves, such as Mojave Wilderness; tourist attractions, like the Penny Can Tree; seas, like the Salton Sea; and national parks, such as Joshua Tree National Park.
- Human features in the Mojave Desert include campsites; community settlements such as Fenner; roads; airfields like Fenner Airstrip; historic buildings like Goffs Schoolhouse; and cities like Las Vegas.
- Some threats to deserts include droughts, deforestation, new wind turbines and solar panel farms, mining, farming, overgrazing and flash floods.

### Where are hot desert biomes located?



A hot desert biome is hot, dry and arid, although temperatures can drop at night and occasional heavy downpours can occur.

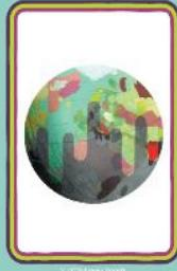
### How do people use the Mojave Desert?

- Protecting areas of natural beauty in national parks.
- Recreational purposes like hiking or quad biking.
- Ranching and farming.
- Military bases and training.
- Mining precious minerals.
- Generating renewable energy.
- Living in settlements.



### Physical features in the Mojave Desert:





Topic	RE	Theme	Creation	Year Group	4
Key Question	For Christians, when Jesus left, what was the impact of Pentecost?				

**What should I already know?**

- I have explored beliefs surrounding Jesus' death and resurrection.
- I have explored the concept of God as the trinity of the Father, Son and the Holy Spirit.

**What will I know by the end of the unit?**

- I will understand the Day of Pentecost.
- I will be able to make clear links between the Day of Pentecost and Christian belief about the Kingdom of God on Earth.
- I will be able to give examples of what Pentecost means to some Christians now.
- I will make links between Pentecost, the Kingdom of God and how Christians live their lives in their church communities.
- I will understand what Christians think the Holy Spirit is and why it is important.
- I will be able to offer suggestions about what the description of Pentecost might mean.

**Key Knowledge**

- For the following 40 days after Easter Sunday, Jesus kept appearing to his disciples.
- The 40<sup>th</sup> day was the last time Jesus appeared before his disciples before he was taken up to Heaven. Christians call this the 'Ascension'.
- After the Ascension, Jesus' disciples were in a room when they heard wind.
- Tongues of fire appeared on their heads, and they could speak in different languages.
- The disciples spread Jesus' word. Peter preached that Jesus was truly the Son of God and they needed to accept him.
- Christians believe Jesus is still alive, and rules in their hearts and lives by the Holy Spirit, if they let him.
- Christians believe that after Jesus returned to be with God the Father, he sent the Holy Spirit at Pentecost to help the Church make Jesus' invisible kingdom visible by living lives that reflect the love of God.
- Christians celebrate Pentecost as the beginning of the church.

**Christians represent the Holy Spirit using different symbols:**



Dove



Fire



Wind



Water



Cloud



Oil

**Key Vocabulary**

Christian	A person who believes in Christ and his teachings.
Jesus	God's son, who Christians believe came and lived on Earth.
God	The creator and ruler of the universe and source of all moral authority; the supreme being.
Holy Spirit	The third person of the Trinity - this is God active in the world.
Resurrection	The time when Jesus rose from the dead.
Disciples	These are 12 friends of Jesus who helped him spread the word of God.
Bible	The Christian Holy Book which consists of the Old and New Testaments.
Pentecost	A Christian festival that marks the coming of the Holy Spirit.
Trinity	The union of God the Father, God the Son and God the Holy Spirit in one God.
Ascension	When Jesus went up to Heaven and left Earth.





<b>Topic</b>	Computing - Animation	<b>Theme</b>	Creation	<b>Year Group</b>	4
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### Key Learning

- To discuss what makes a good animated film or cartoon.
- To learn how animations are created by hand.
- To find out how animation can be created in a similar way using the computer.
- To learn about onion skinning in animation.
- To add backgrounds and sounds to animations.
- To be introduced to 'stop motion' animation.
- To share animation on the class display board and by blogging.

### Animation

The process of adding movement to still objects.

### Onion Skinning

A process where the shadow image of the previous frame is present to help you line up the objects of the animation correctly.

### Key Vocabulary

#### FPS (Frames Per Second)

The number of frames played per second.

#### Pause

To temporarily stop the animation.

#### Frame

A single image in an animation.

#### Stop motion

A technique whereby the camera is repeatedly stopped and started, for example to give animated figures the impression of movement.

### Key Images



Open, close or share animation.



Add or delete a frame from the animation.



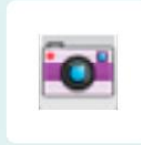
Play the animation.



Switch onion skinning on or off.



Add a background picture to the animation.



Insert a photograph from a webcam into the animation.



Insert a sound file into the animation.



Number of frames in the animation.

### Key Questions

#### What is an animation?

Animation is the process of giving the illusion of movement to drawings, models, or inanimate objects. Animated motion pictures and television shows are highly popular forms of entertainment.

#### What is meant by onion skinning?

Onion skinning is a 2D computer graphics term for a technique used in creating animated cartoons and editing movies to see several frames at once.

#### What is meant by stop motion animation?

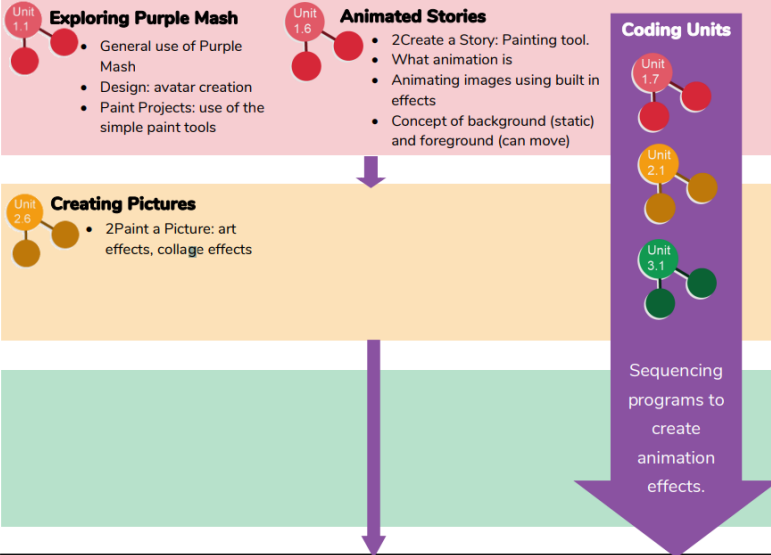
Stop motion animation is a filming technique in which objects (such as clay models) are photographed in a series of slightly different positions so that the objects seem to move.

### Key Resources



2Animate

## Unit 4.6 - Animation: Prior and Future Learning Links





<b>Topic</b>	Computing - Effective search	<b>Theme</b>	Creation	<b>Year Group</b>	4
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### Key Learning

- To locate information on the search results page.
- To use search effectively to find out information.
- To assess whether an information source is true and reliable.

### Key Questions

#### What is a search engine?

A search engine is a piece of software that allows the user to find and display pages from the World Wide Web.

### Key Vocabulary

#### Balanced View

Presenting opposing points of view fairly and without bias.

#### Easter eggs

An unexpected or undocumented feature in a piece of computer software or on a DVD, included as a joke or a bonus.

#### Internet

A global computer network providing a variety of information and communication facilities.

#### Key words

A word or a group of words an Internet user uses to perform a search in a search engine.

#### Reliability

The degree to which the result of something can be depended on to be accurate.

#### Results page

Where the answers to a search are displayed.

#### Search engine

A program that searches for and identifies items in a database. Used especially for finding sites on the World Wide Web.

## Unit 4.7 - Effective Searching: Prior and Future Learning Links

**Unit 1.1 Online Safety and Exploring Purple Mash**

- Safe logins
- Using Purple Mash search functionality

**Unit 1.6 Technology Outside School**

- Developing ideas about the concept of technology that we are surrounded by and its purpose

**Unit 2.2 Online Safety**

- Sharing to a display board
- Sharing online
- Digital footprint

**Unit 2.5 Effective Searching**

- Exploration of what the Internet is
- Accessing the World Wide Web
- Digital Footprint
- Searching and sharing

**Unit 3.2 Online Safety**

- Reliability of information and spoof websites
- Appropriate ratings
- Reporting problems

**Unit 4.2 Online Safety**

- Phishing
- Digital footprint
- Malware and viruses
- Plagiarism

**Unit 4.7 - Effective Searching**

**Unit 5.2 Online Safety**

- Responsibility to others when sharing
- Sources of support
- SMART rules

**Unit 5.8 Word Processing**

- Plagiarism
- Citing sources

**All units**

- Use of 2Dos
- Saving, opening and editing work
- Sharing work
- Copying and pasting
- Mouse, keyboard and device skills

**The Internet**  
A global network of connected devices

**The World Wide Web**  
The webpages and websites that you see when browsing the Internet

**Search Engines**  
A program that searches the World Wide Web to locate information. Browsers typically allow access to a search engine.

- use keywords
- punctuation doesn't matter
- capitalization doesn't matter
- you can search for events, score, mathematical calculations, translations, conversions, locations, weather and much more ...

**Search Algorithms**

- How a search engine finds what you are looking for.
- Help you find things that you might be most interested in.
- Makes suggestions to you such as videos and social media sources.
- Might not give you a balanced view.

Can you explain how these terms relate to reliability?

- reputable source
- date
- quality of site
- multiple sources of confirmation
- search history - algorithms

### Key Resources





Topic	Spanish - The Weather	Theme	Creation	Year Group	4
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# ¿Qué tiempo hace?

phonics

## accents

Accents can be placed on some words like **qué** to indicate a question word.

## stress placement

Words that end in a vowel, 'n' or 's' are normally stressed on the second to last syllable like ti-**em**-po.

## ñ tilde

This changes the 'n' to a 'ny' sound like in the English word 'onion'. As in the Spanish word **España**.

vocabulary

9 common weather expressions.



Key questions:



¿Qué tiempo hace?

What is the weather?

Compass points:

el norte

north

el sur

south

el oeste

west

el este

east

grammar

To understand better the use of the verb 'hacer' (to do/make) in set weather phrases:

Hace calor.

It is hot (literal translation 'it is doing hot').



Hace sol.

It is sunny (literal translation 'it is doing sun').



## What I will learn:

- Objective 1: I will be introduced to the new vocabulary for describing the weather in Spanish.
- Objective 2: I will start to learn how to recall, say and write the weather expressions from memory.
- Objective 3: I will learn to improve my listening decoding skills.
- Objective 4: I will learn how to read a weather map in Spanish and describe weather in different parts of the country.
- Objective 5: I will use all my new knowledge to present a weather forecast in Spanish.

## It will help if we already know:

- The letter sounds (phonics & phonemes) from 'Phonics & Pronunciation' lessons 1, 2 & 3.
- Language introduced from Early Learning units.
- Vocabulary from 'Me presento' unit (Intermediate), how to say your name, age, where you live and nationality.



Topic	Design Technology - Digital World	Theme	Creation	Year Group	4
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## Digital world: Mindful moment timer

<b>advantage</b>	Something good about a product that helps the user.
<b>aesthetic</b>	How something looks.
<b>brand</b>	A particular company's products and logo.
<b>disadvantage</b>	Something about a product that makes things more difficult.
<b>ergonomic</b>	How comfortable a product or piece of equipment is to use.
<b>exhibition</b>	An event where things are shown to the public.
<b>loop</b>	A series of instructions that is repeated.
<b>prototype</b>	A first example of something.
<b>research</b>	A detailed study of something to get more information.
<b>variable</b>	A word that stands for a set of values or numbers.

## Product forms

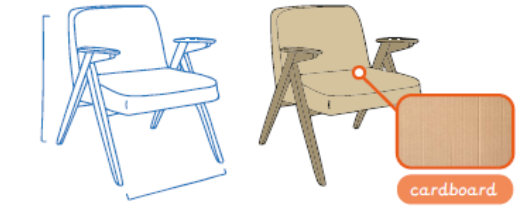
Many products that have similar functions take different forms.



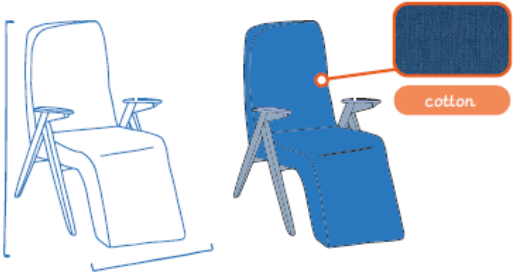
## Prototypes



Prototypes are the first examples of a product made with cheap, easy-to-find materials. They let you test the form and function of an idea and help gather feedback about ergonomics and aesthetics.



They help you make better decisions about size, shape and materials for the next version or the final design.



## Learning Outcomes:

- To analyse and evaluate existing products.
- To develop design criteria for the user.
- To program and control a timer.
- To develop prototypes and communicate ideas.
- To develop a brand identity through computer-aided design.
- To consider feedback and evaluate.

## What should I already know?

- In programming, a 'loop' is code that repeats something again and again until stopped.
- A micro:bit is a pocket-sized, codable computer.
- A simulator can replicate the functions of an existing piece of technology.
- What the 'Digital revolution' is and features of some of the products that have evolved as a result.
- What is meant by 'point of sale display'.
- CAD stands for 'Computer-aided design'.
- What a focus group is by taking part in one.

## Countdown from 30

```

on button A pressed
  set Seconds to 30
  while Seconds > 0
    do
      show number Seconds
      pause (ms) 200
      change Seconds by -1
  clear screen
  
```

## Adding visual effect and a reset

```

on button A pressed
  set Seconds to 30
  while Seconds > 0
    do
      show number Seconds
      pause (ms) 200
      change Seconds by -1
  show icon [clock icon]
  clear screen

on button B pressed
  set Seconds to 0
  
```

## Tips for a good evaluation

<p>Check your design against the design criteria.</p>	<p>Note down something you have done well.</p>	<p>Get feedback from someone else.</p>	<p>Suggest a change.</p>
<p>Must be for a teacher.</p>	<p>The timer must last for a specific time.</p>	<p>Must be programmed using code.</p>	<p>Size and shape must be clear.</p>
<p>Must use CAD to create a brand identity.</p>	<p>Must get feedback from the user.</p>		



Topic	Music - Samba and Carnival Sounds and Instruments	Theme	Creation	Year Group	4
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## Musical style: Samba



Samba is a Brazilian music style which forms a part of everyday life in Brazil. It is used for celebrations, including the Rio Carnival, and even in football! It is a style of music which layers syncopated rhythms on multiple percussion instruments.

## Instruments

Untuned percussion

Percussion instruments you **cannot** play a tune on.

Agogo



Caixa



Chocahlo



Ganza



Repique



Surdo



Tamborim



## Vocabulary

Rhythm

A pattern of long and short sounds (and silences) within a piece of music.

Syncopation

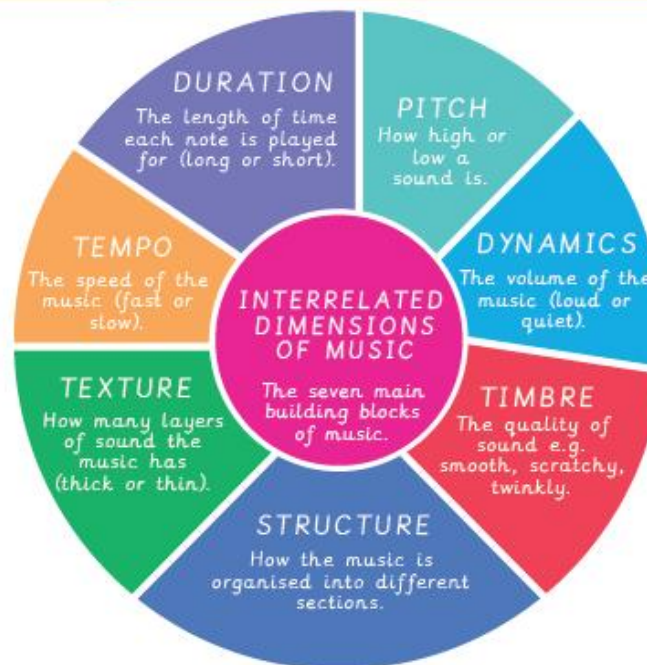
A type of musical rhythm in which the strong notes are not on the beat.

Off-beat

The beats in between the ones you would naturally clap on.

Break

A four or eight beat rhythm which is usually played once or twice.



## Learning Outcomes:

- Explain what samba music is and that it is mainly percussion instruments used in celebrations such as Carnival in Brazil.
- Clap on the off-beat (the and of each beat) and be able to play a syncopated rhythm.
- Play their rhythm in time with the rest of their group (even if they are not always successfully playing in time with the rest of the class).
- Play their break in time with the rest of their group and play in the correct place in the piece.
- Play in time and with confidence; accurately playing their break.

## What I should already know:

- Music from different parts of the world, and different times, has different features.
- Deciding the structure of music when composing can help us create interesting music with contrasting sections.
- Combining different instruments and different rhythms when we compose can create layers of sound we call 'texture'.
- A 'loop' in music is a repeated melody or rhythm.
- Changing the dynamics of a musical phrase or motif can change the texture of a piece of music.