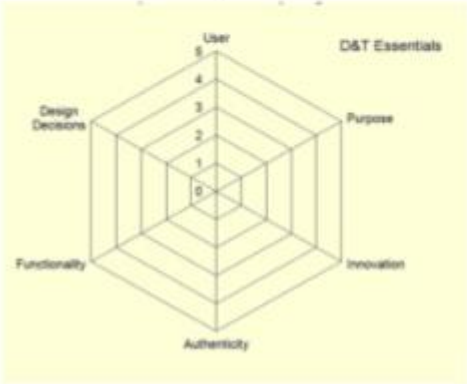
THOUGHT	ACTION
What type of moving toy shall I make? What will be its purpose? Who will use it? What type of movement will it have? Will it be a moving vehicle or be stationary and have moving parts? Which materials will I use to make it? How will I make it fit for purpose? How will I make the body or housing for the moving parts? What tools and materials will I need? What order will I work in? What constraints am I working to? Do I need to change anything? Will my product meet the needs, wants and interests of the user group?	Discussing ideas, drawing annotated sketches or exploded diagrams Generating a simple design specification Discussing, modelling and evaluating different systems using mechanical components Investigating and trialling possible materials and components Discussing, exploring and evaluating prototypes Negotiating, developing and agreeing a step-by step plan Discussing, testing and modifying the design Evaluating the product with the intended user group and against the original design specification



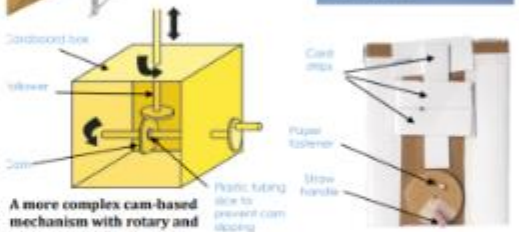
Cams Toys

Appearance: Colours, moving parts and components.
Purpose: To create a toy for a 3 year old.
Safety: To ensure all components are secure!



Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).

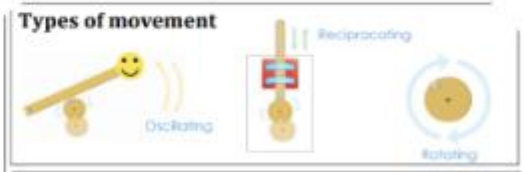




A more complex cam-based mechanism with rotary and reciprocating movement.

Glossary

- **Rotary motion – movement that goes round.**
- **Oscillating motion – moving to and fro around a pivot point, as in a lever.**
- **Reciprocating motion - backwards and forwards movement in a straight line, as in a slider.**
- **Cam – a mechanism that changes one sort of movement to another. Cams can be an off-centre wheel or a specially shaped wheel.**
- **Follower – the device that follows the movement of the cam: a lever or a slider.**
- **Lever – a piece of rigid material that moves to and fro around a pivot point creating oscillating motion.**
- **Slider – a piece of rigid material that moves backwards and forwards in a straight line creating reciprocating motion.**
- **Guide – a piece of material used to guide the movement of another.**
- **Spacer – a piece of material used to create extra space to allow moving parts to move freely.**





Geography Autumn 2: Antarctica Knowledge Organiser

ANTARCTICA KNOWLEDGE ORGANISER

PHYSICAL GEOGRAPHY

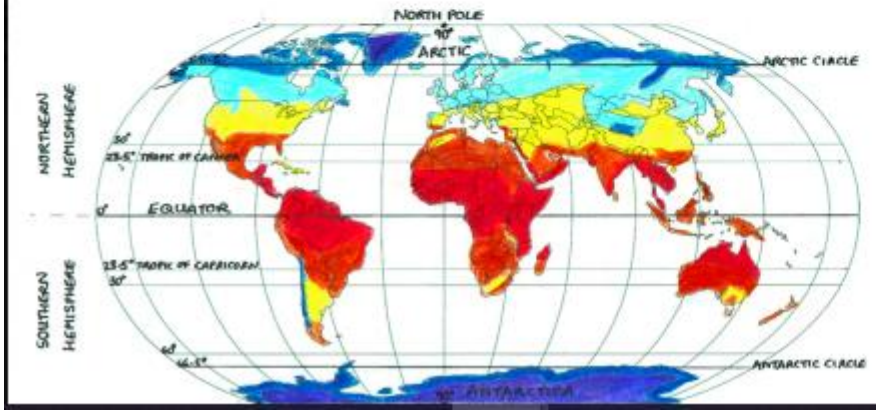
- Antarctica is the 5th largest continent based on size.
- No one lives there but scientists will stay there to conduct research.
- Antarctica has no countries.
- There are no major cities just scientific outposts.
- 98% of Antarctica is covered by ice.
- Antarctica is considered a desert because it experiences such little rain.
- Antarctica is quite mountainous.
- Antarctica is divided into three main parts: **East Antarctica** (the biggest part), **West Antarctica** and in between them the mountain range called the **Transantarctic Mountains**.

Ernest Shackleton

Ernest Shackleton was a polar explorer. In 1914 Shackleton took a team of men on an expedition to Antarctica on a ship called the Endurance as he wanted to be the first to pass through the South Pole via Antarctica.



MAP SHOWING TYPICAL GLOBAL TEMPERATURES



KEY WORDS

Equator - an imaginary line around the Earth. Everywhere on the Equator is equally distant from the North Pole and the South Pole.

Northern Hemisphere - the half of Earth that is north of the equator.

Southern Hemisphere - the half of the Earth that is south of the equator.

North Pole - the most northern point of the earth.

South Pole - the most southern point of the Earth.

Arctic Circle - a special line of latitude that forms a circle around the North Pole (approximately 66.5 degrees north of the Equator). Anything north of this imaginary circle is in the Arctic.

Antarctic Circle - a special line of latitude (approximately 66.5 degrees south of the Equator). Anything south of this imaginary circle is in Antarctica.

Polar Regions - the regions of the Earth surrounding the North and South Poles.

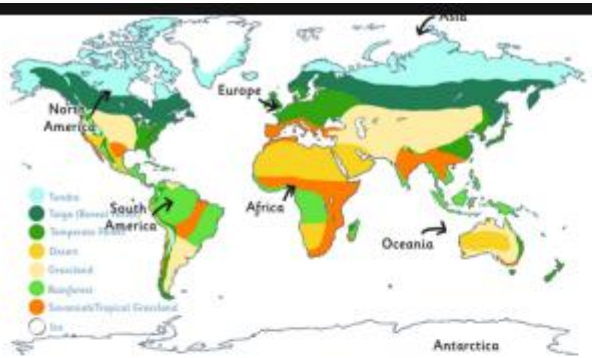
Antarctic Peninsula - the largest peninsula of Antarctica, between the Weddell Sea and the Pacific. It consists of Graham Land in the north and the Palmer Peninsula in the south (see map on slide 11).

Weather - the daily state of the atmosphere in any given place (in regard to heat or cold, wetness or dryness, calm or storm, clearness or cloudiness).

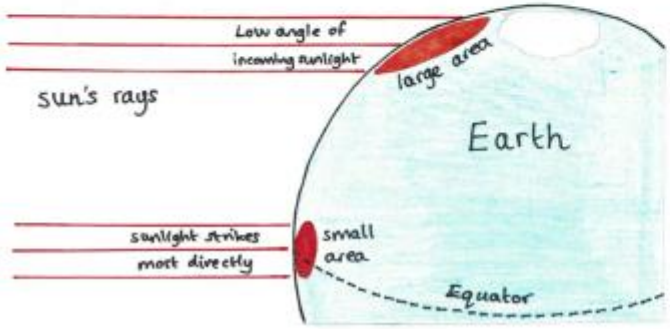
Climate - the average of the weather conditions in an area over a long period of time (usually 30 years).

Ice sheet / continental glacier - a thick layer of ice covering a large area of land (more than 50,000km wide) for a long period of time.

Ice cap - a mass of ice and snow that permanently covers an area of land (less than 50,000km wide) and is usually centred on a highest point.

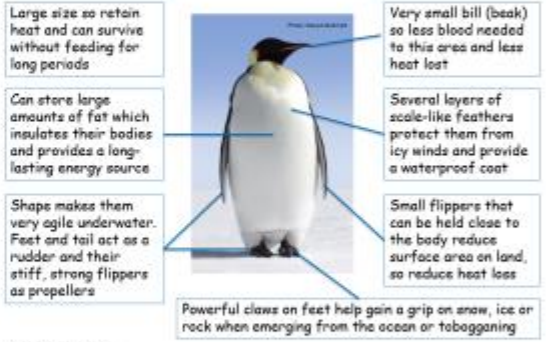


At the Poles, the sun's rays strike the Earth at a very low angle so they are spread out over a greater area and temperatures are very low





Emperor Penguin: Physical Adaptations



Much of the coastline of Antarctica is fringed by ice shelves. The Ross Ice Shelf covers an area greater than the British Isles



Living things and their habitats.

Key Vocabulary:

Organism – a living thing.
Habitat – the place where an organism lives.
Life cycle – the stages a living thing goes through during its life.
Stage – a particular part of a life cycle.
Offspring – the young of a living thing.
Reproduction – the process of producing offspring.
Growth – getting bigger and developing.
Mature – fully grown or developed.
Mammal – an animal that has hair or fur and feeds its young with milk.
Amphibian – an animal that usually begins life in water and later develops the ability to live on land.
Insect – an animal with six legs and three main body parts.
Metamorphosis – a major change in an animal's body during its life cycle.
Larva – the young stage of an insect, such as a caterpillar or maggot.
Pupa – the stage when some insects change into adults.
Tadpole – the young aquatic stage of an amphibian such as a frog.
Incubation – keeping eggs warm until they hatch.



Habitats:

- Habitats provide food, water, shelter and space.
- Different organisms are suited to different habitats.
- A habitat has both living and non-living features.
- Microhabitats are small areas within a habitat where organisms live.
- Habitats can change over time, affecting the organisms that live there.

Examples:
Woodland: trees, foxes, birds, insects
Pond: frogs, fish, pondweed, insects
Desert: cacti, snakes, lizards
Ocean: fish, sharks, seaweed
Grassland: grasses, rabbits, insects





Is the Christmas story true?

Different accounts of the Christmas story.

Understand that stories can be true in different ways.

What does true mean?

Even though we can all witness the same even, we see things through our own lens.

Discuss different types of truth when studying Christmas e.g. historical, scientific,

Personal(beliefs)

What do you know about the Christmas story?

Who was present at the birth of Jesus?

Why are they all there at the same time?

Whose version of the Christmas story is true?

Was Jesus really born on the 25th December?

There are different accounts of the Christmas story in the bible according to





Key Vocabulary

Jesus

Mary

Joseph

Three wise men

Angel Gabriel

Bethlehem

Shepherds

Egypt

Gold

Frankincense

Myrrh

Stable

Innkeeper