Science Knowledge Organiser

Term: Autumn 2 | **Year: 1 / 2** | **Biology: Plants**

BIG QUESTION: HOW CAN LIVING THINGS STAY HEALTHY?

What do plants need to grow?

Water

If a plant is not watered, its stem will be fragile and it will have dry leaves. It will eventually die.

Light

If a plant does not have enough light, it will grow to be tall and flimsy as it searches for light.

Nutrients

The roots take up water and nutrients from the soil.

Key Knowledge & Vocabulary

Seed
A seed is the part of a seed plant which can grow into a new plant.

Bulb
A bulb is the underground bud or stem of a seed plant at resting stage.

Water
A transparent liquid that covers almost 75 percent of Earth's surface in the form of oceans, rivers, and lakes.

Light
Light is a form of energy. Light energy from the sun helps plants to grow. Any light will help plants grow, including artificial light sources.

Nutrients
The minerals that plants need to help them grow. Plants get nutrients from the soil and make their own food in their leaves.

Air
A mix of many gases, mainly oxygen and nitrogen.

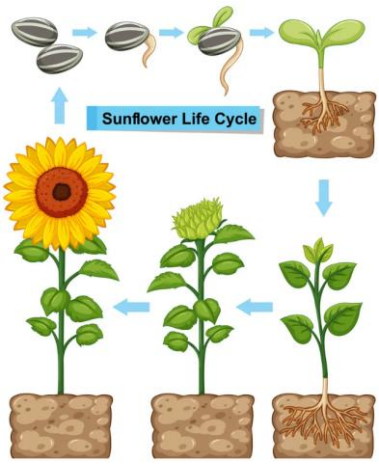
Roots
Anchor the plant in the soil and absorb water.

Stem
Supports the plant and carries nutrients to the leaves.

Leaves
Make food for the plant using sunlight and carbon dioxide.

Flower
Make seeds to grow into new plants.

Life cycle
The series of stages a living thing goes through during its life.



What do plants need to grow?

Air

Plants take in carbon dioxide (CO2) from the air and convert it into glucose (a type of sugar) to make their own type of food.

Space

If the plant or seed does not have enough space, it will not grow.

Time

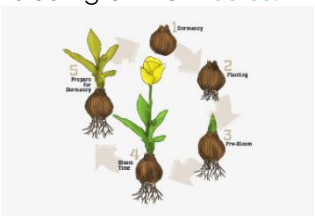
Plants need time to grow and develop.

Seeds, Bulbs and Scientists

Plants can grow from **seeds.**

Marie Clark Taylor investigated how plants get information about light from their environment.

Plants can grow from **bulbs.**



Learning Links

Builds on:	What I am learning now:	Leads to:
Y1: Biology, Plants	**Y2: Biology, Plants**	**Y3: Biology, Plants**

Science Knowledge Organiser

Term: Spring 1 | **Year: 1 / 2** | **Chemistry: Materials**

BIG QUESTION: HOW DO WE CHOOSE MATERIALS?

Natural

Wood

Hard, stiff, strong, opaque, can be carved into any shape.

Rock

Hard, rigid, strong, opaque.

Wool

Soft, flexible, hard-wearing, stretchy, warm, absorbent.

Key Knowledge & Vocabulary

Material
A substance that objects are made from

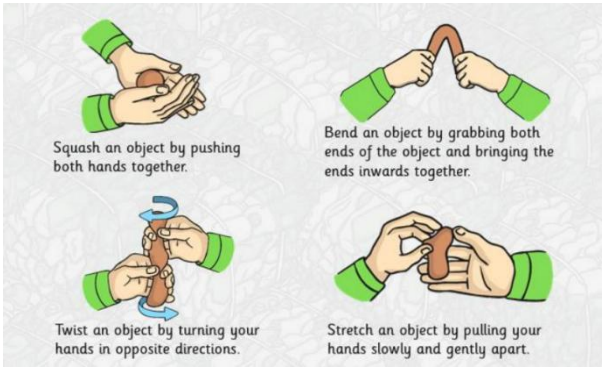
Properties
The qualities or characteristics of an object or material

Suitability
Whether the material is fit or right for the object's purpose

Man-made
A material or object that was invented or made by humans, like paper, plastic and glass.

Natural
A material that is found in nature, like plants, rocks and water.

Squashing, bending, twisting & stretching



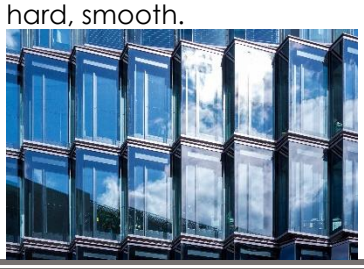
Man-Made

Cardboard

Light, strong, stiff.

Glass

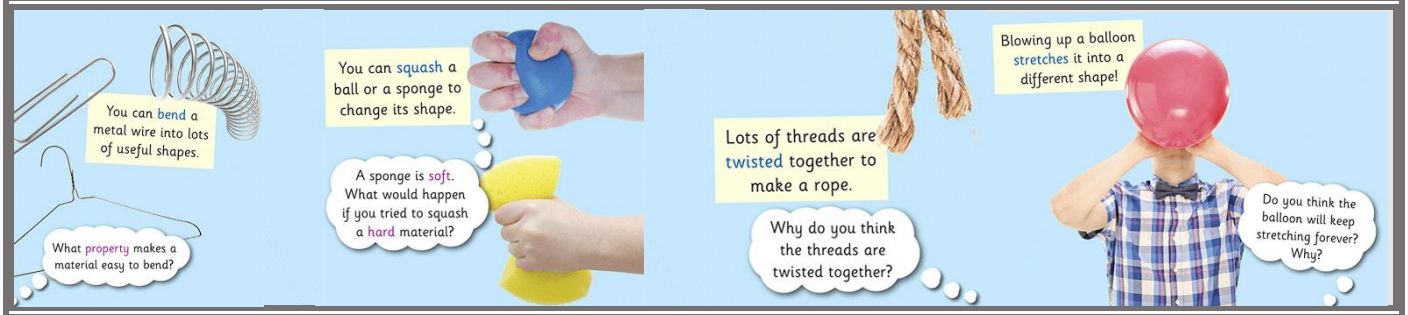
Waterproof, transparent, hard, smooth.



Plastic

Waterproof, strong, can be made to be flexible or stiff, smooth or rough.

How do we change materials?



Learning Links

Builds on:	What I am learning now:	Leads to:
Y1 Everyday Materials	**Y2: Everyday Materials**	**Y3: Rocks, Soils and Fossils**

Science Knowledge Organiser

Term: Spring 2 | **Year: 1 / 2** | **Biology: Animals including Humans**

BIG QUESTION: WHAT DO LIVING THINGS NEED TO SURVIVE?

What do animals need to survive?

Air

Water

Food

Key Knowledge & Vocabulary

Adult
A fully grown animal or plant.

Develop
To grow bigger and become stronger.

Diet
The food and water that an animal eats and drinks.

Exercise
A physical activity to keep your body fit.

Germs
Tiny living things that can cause disease.

Hygiene
Keeping clean so we can stay healthy and stop germs spreading.

Life cycle
The changes living things go through to become an adult.

Live young
Offspring that has not hatched from an egg.

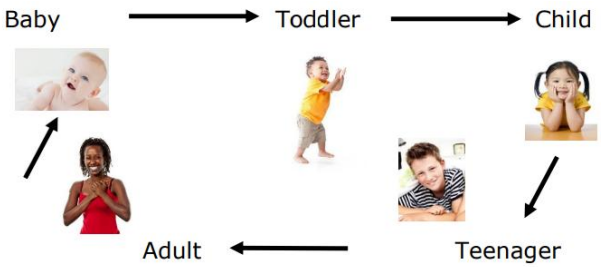
Nutrition
Food needed to live.

Offspring
A human's child or an animal's young.

Pulse
The beating of the heart that can be felt in your neck and your wrist.

Young
Offspring that has not reached adulthood.

Life Cycle of a Human



What do humans need to be healthy?

Balanced diet

It is important to eat the right types of food in the right amount to help us stay strong and healthy.

Exercise

Exercising keeps our bodies and minds healthy. It builds muscles and helps to pump blood around our body.

Hygiene

Being hygienic and keeping ourselves clean stops the spread of germs, which can cause disease.

Animals, including humans, have offspring

Some offspring look like their adult when they are born.

Puppy → Dog


Animals **reproduce**. This means they have **offspring** and new animals, including humans, are made.
Some animals give birth to **live young**. Some animals lay eggs which the **young** hatch from.

Some offspring do not look like their adult when they are born.

Tadpoles → Frog


Learning Links

Builds on:	What I am learning now:	Leads to:
Y1: Animals including Humans	**Y2: Animals including Humans**	**Y3: Animals including Humans**

Science Knowledge Organiser

Term: Summer 1 | **Year: 1 / 2** | **Biology: Living Things and their Habitats**

BIG QUESTION: WHAT DO LIVING THINGS NEED IN THEIR HABITAT?

British Habitats

Coastal

Urban

Woodland

Pond

Key Knowledge & Vocabulary

Alive or **Living**
A living thing is alive and exhibits all of the life processes (Mrs Gren).

Dead
A plant or animal that used to be alive but no longer exhibits life processes.

Depend
Needing something in order to survive.

Environment
The area in which something exists or lives.

Habitat
A natural environment where an animal or plant lives, that provides the animal or plant with the basic things they need to survive.

Life processes
The things that all living things do: **M**ovement, **R**espiration, **S**ensitivity, **G**rowth, **R**eproduction, **E**xcretion, **N**utrition.

Micro-habitat
Smaller habitats within a larger one e.g. under a stone, a fallen log, a rock pool.

Never alive or **non-living**
Things made out of materials such as metal, plastic, glass or rock that were never living.

Survive
To stay alive and not die.

Food Chains

A food chain shows how each animal gets its food. Food chains are one of the ways living things depend on each other to survive.

Global Habitats

Desert

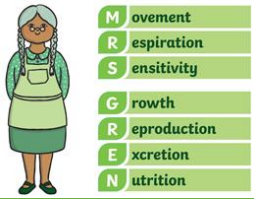
Ocean

Arctic

Tropical Rainforest

Alive, Dead or Never Alive?

Living plants and animals exhibit the seven life processes.



Dead things were once alive. They include dead animals, plants and parts of animals and plants that are no longer attached.

A **non-living** thing has never been alive. They include metal, plastic, rock, water, sand and glass.

Learning Links

Builds on:	What I am learning now:	Leads to:
Y1 Biology, Plants; Animals including Humans	**Y2 Biology, Living Things and their Habitats**	**Y4 Biology, Living Things and their Habitats**