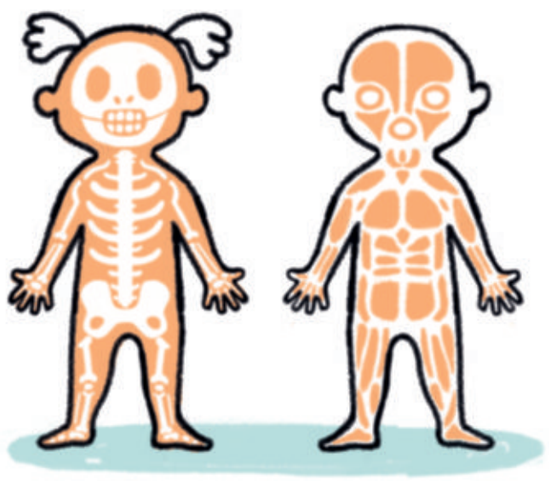
SYSTEMS

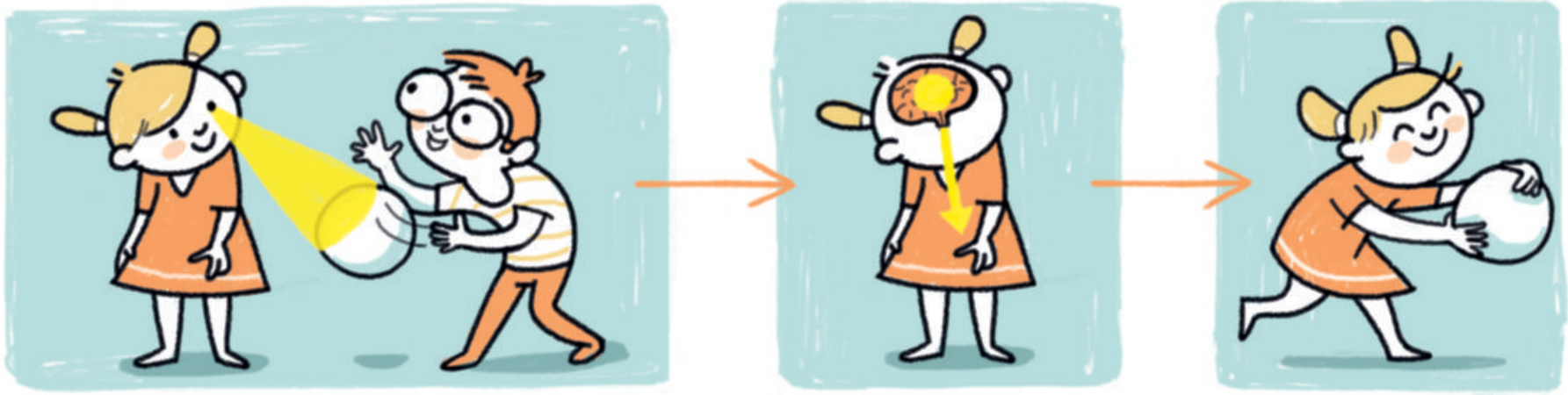
Sense organs

Nervous system



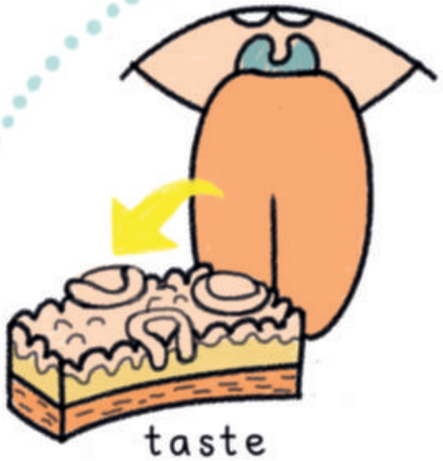
Locomotor system

DETECTING AND RESPONDING

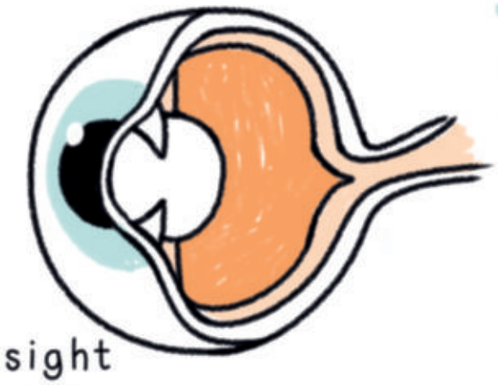


SENSITIVITY

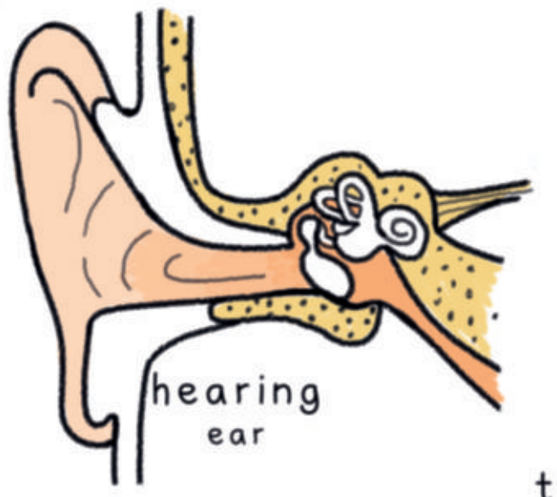
SENSE ORGANS



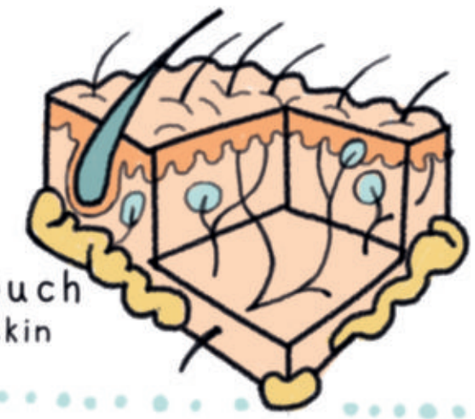
taste
tongue



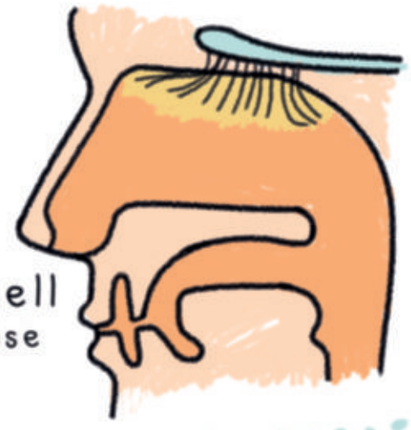
sight
eye



hearing
ear



touch
skin



smell
nose

Richmond SANTILLANA

1382275 01/10

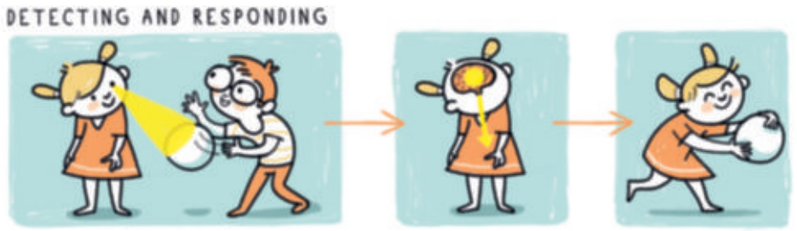
Sensitivity

In this poster you will learn how we detect and respond to information about the environment.

We detect information with our senses and we respond using the nervous system and the locomotor system.

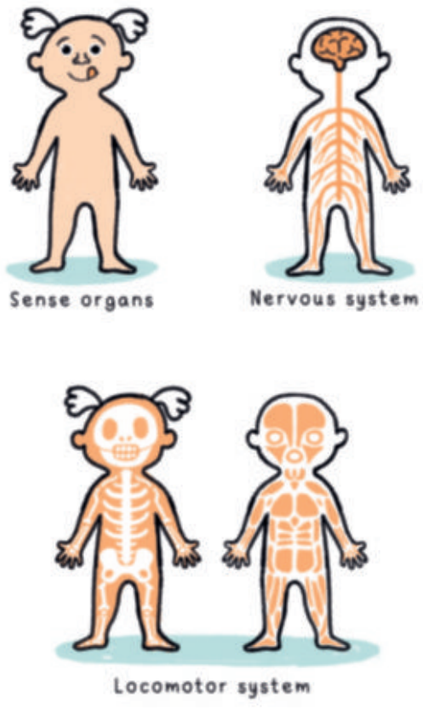
Detecting and responding

- Sensitivity is the ability to detect and to respond to information about the environment.
- The girl in the picture sees her friend throw a ball to her.
- The optic nerve takes the information to the brain and she thinks of a response.
- The response is sent to the locomotor system which moves her arms and hands to catch the ball.



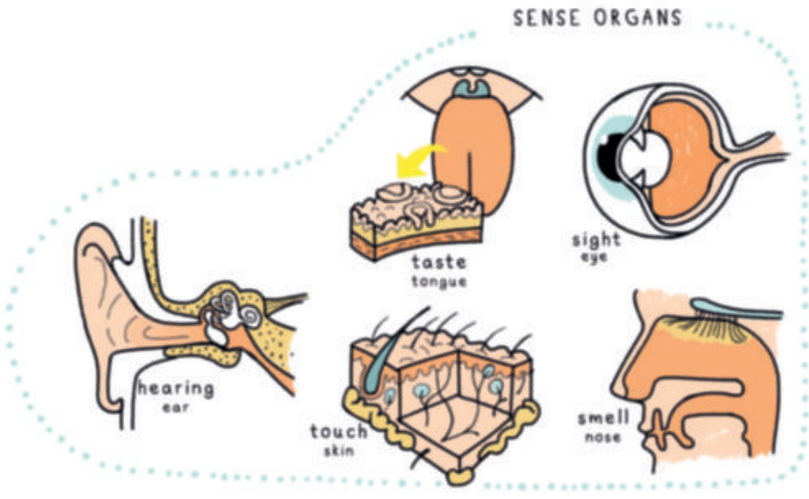
Systems

- We detect information about the environment with our senses.
- The nervous system sends and receives messages to and from the brain.
- The locomotor system, which consists of the bones and muscles, carries out the response to move the body.



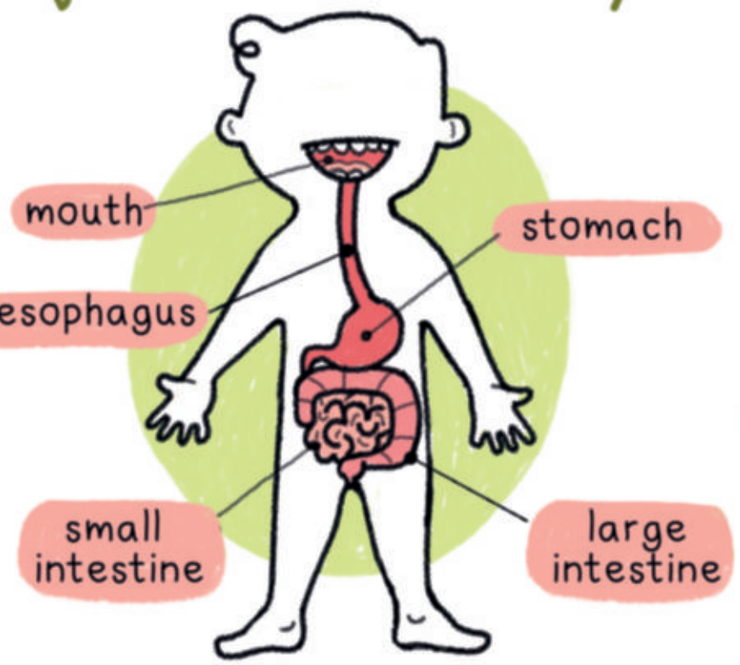
Sense organs

- Our eyes are our organs of sight. We use them to identify colour, size, shape and distance. The parts of the eye are the iris, the pupil, the lens, the retina and the optic nerve.
- Our ears are our organs of hearing. We use them to identify different sounds. Sounds can be loud or soft. The parts of the ear are the pinna, the ear canal, the eardrum, the small bones, the cochlea and the auditory nerve.
- Our body is covered with skin. Our skin is our organ of touch. It is the largest organ in our body. The skin has many touch receptors. We can feel temperature, textures and pain with our skin. We can feel hard, soft, smooth or rough textures.
- Our nose is our organ of smell. We use it to identify different smells. Smells can be good or bad. Smells enter the nasal cavity through our nostrils where the olfactory nerve senses them and sends the information to the brain through the olfactory nerve.
- The tongue is our organ of taste. We use our taste buds to identify different flavours: sweet, salty, sour and bitter.



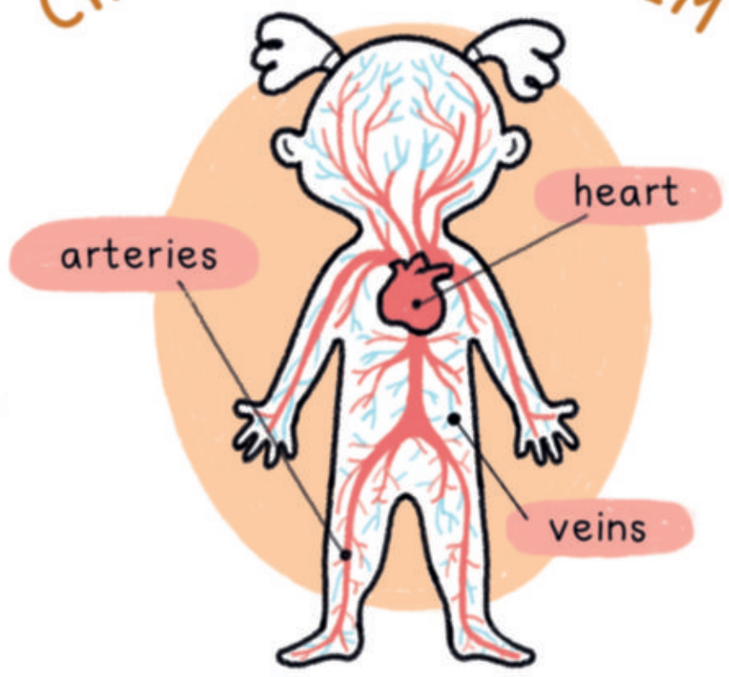
NUTRITION

DIGESTIVE SYSTEM

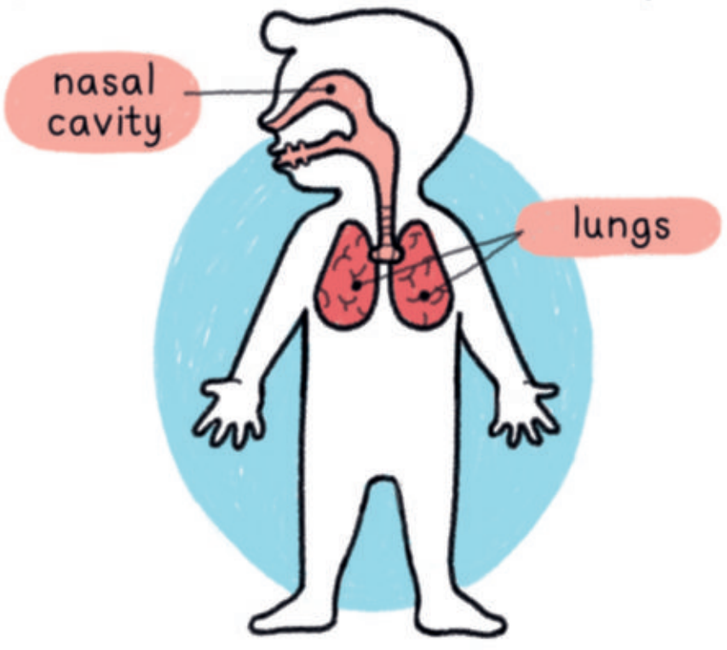


energy

CIRCULATORY SYSTEM

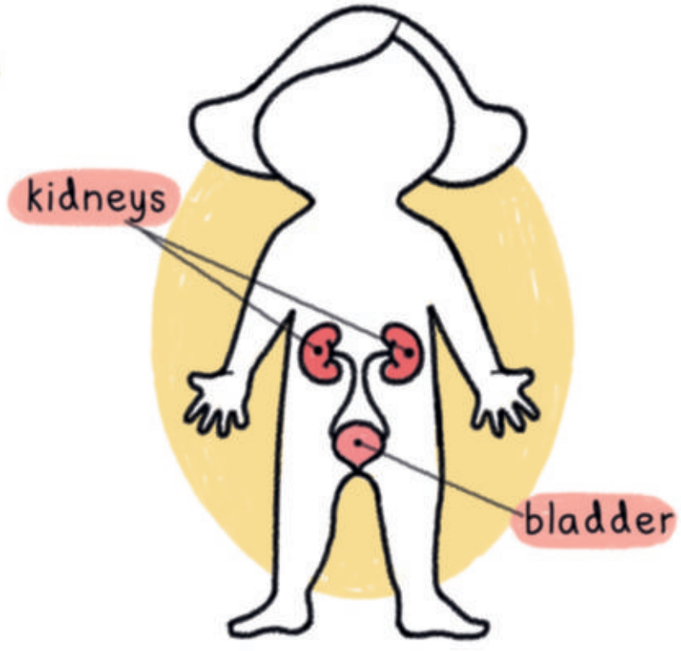


RESPIRATORY SYSTEM



growth

EXCRETORY SYSTEM



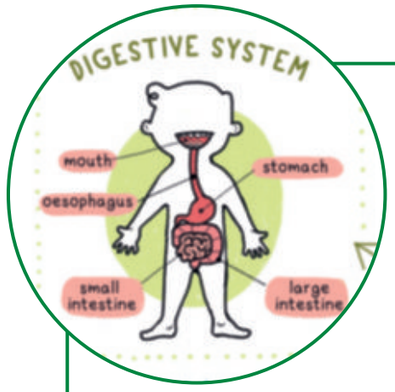
Richmond SANTILLANA

1382275 02/10

Nutrition

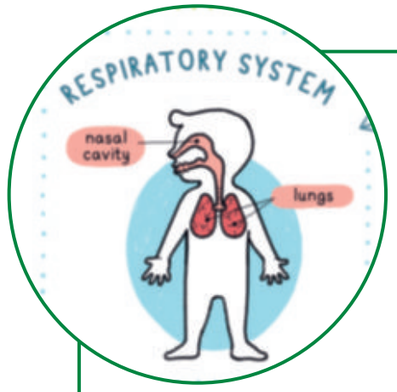
The process of obtaining energy from food is called nutrition. There are four systems involved in nutrition: the digestive system, the respiratory system, the circulatory system and the excretory system.

This poster explains the four systems involved in nutrition.



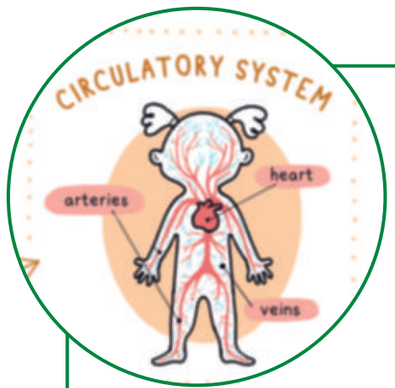
The digestive system

- When we take food in, we digest it and absorb nutrients through our digestive system. The parts of the digestive system are the mouth, the oesophagus, the stomach, the small intestine and the large intestine.
- Nutrients help us to grow and repair our body. There are different types of nutrients:
  - Carbohydrates give us energy.
  - Fats and sugars give us extra energy.
  - Proteins help us to grow and repair our body.
  - Vitamins and minerals keep us healthy.



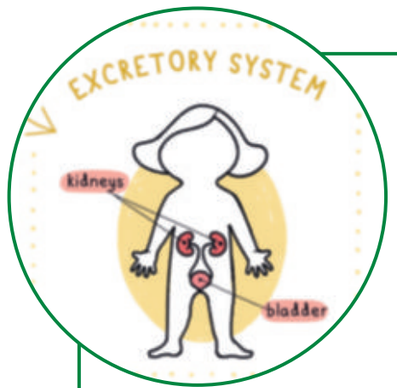
The respiratory system

- We breathe air in and out through the respiratory system. We need oxygen from air to obtain energy from food.
- The respiratory system obtains oxygen from the air, which is then transported throughout the body by the circulatory system to the cells.
- When we breathe out, we expel carbon dioxide, which is a gas inside of our body.
- Parts of the respiratory system are the nasal cavity and the lungs.



The circulatory system

- The circulatory system transports blood which carries oxygen and nutrients throughout the body.
- The parts of the circulatory system are:
  - The heart pumps the blood through the arteries and veins.
  - Arteries and veins are tubes that carry blood around our body.

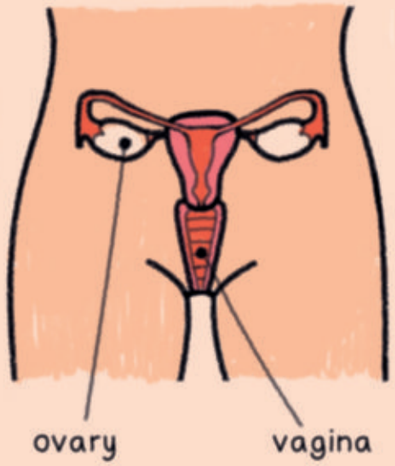


The excretory system

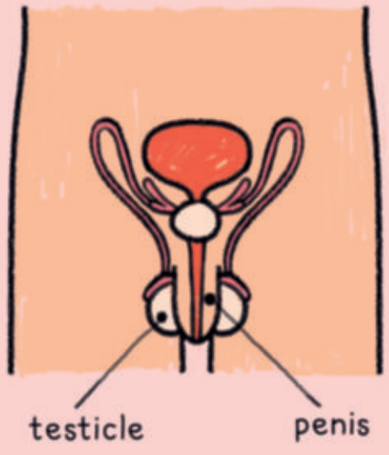
- The process of nutrition generates waste substances.
- We expel waste from our body through our excretory system.
- Parts of the excretory system are the kidneys and the bladder.

REPRODUCTION

FEMALE REPRODUCTIVE SYSTEM



MALE REPRODUCTIVE SYSTEM



THE STAGES OF LIFE

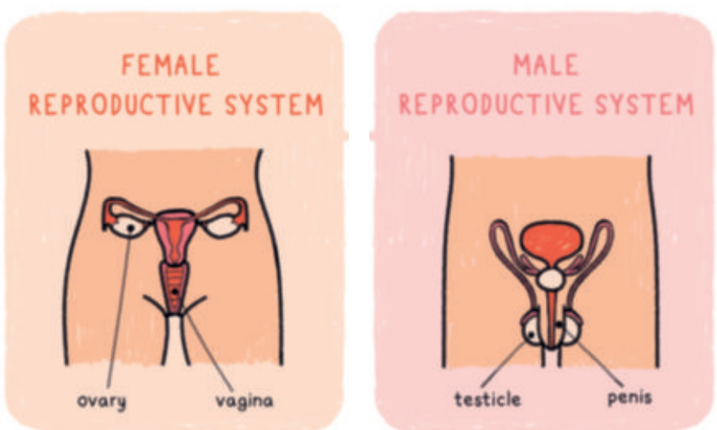
Reproduction and the stages of life

In this poster you will learn about reproduction and the difference between male and female reproductive organs.

You will also learn about the different stages of life and the mental and physical changes that occur from being a child to becoming an elderly person.

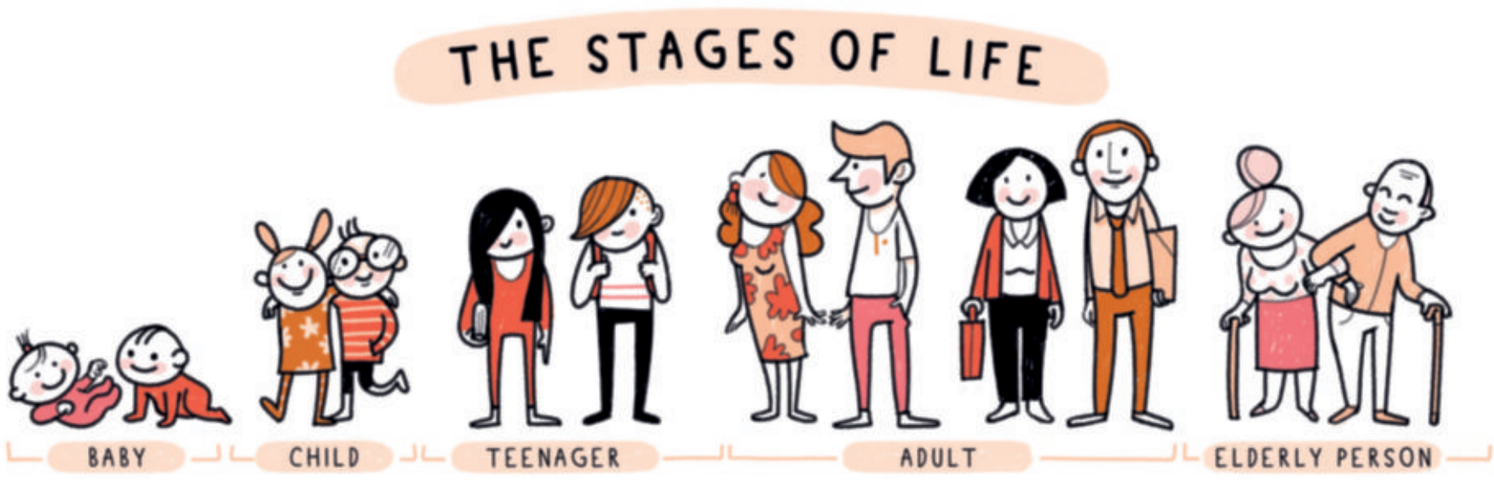
Reproduction

- Reproduction is the ability to have offspring similar to ourselves.
- Like some animals and plants, humans have sexual reproduction in which a male and a female intervene.
- Men and women have different reproductive organs.
- Human beings are viviparous because the babies develop inside their mother's womb. Pregnancy lasts 9 months until the baby is born.



The stages of life

- During our lifetime we grow and change.
- There are four stages of life: child, teenager, adult and elderly person.
- Childhood is the stage of life where major changes take place. When we are born we depend on other people and, little by little, we learn to do things by ourselves.
- During adolescence girls and boys develop, and physical differences are clearer. At this age teenagers become more independent and develop personal tastes.
- During adulthood the body is fully developed and prepared to have children. The mind is prepared to assume responsibilities and adults become active members of society.
- During old age people begin to lose physical agility and strength, however, elderly people transmit their life experience to their families.



FOOD AND HEALTH

NUTRIENTS

Fats

Carbohydrates

Proteins

Vitamins
and minerals

THE FOOD WHEEL

THE FOOD PYRAMID

5 MEALS

BREAKFAST

MORNING SNACK

LUNCH

AFTERNOON SNACK

DINNER

Richmond

SANTILLANA

1382275

04/10

Food and health

It is important for our health to have healthy habits, such as doing exercise, hygiene, playtime, rest and eating healthy. In this poster, you will learn about having a healthy diet.

The food wheel

- The food wheel helps us to choose a healthy diet.
- We need to eat foods from each section of the wheel.
- You should eat more foods from the groups in the bigger sections.
- There are smaller sections in some groups. You shouldn't eat too much of these foods.

The food pyramid

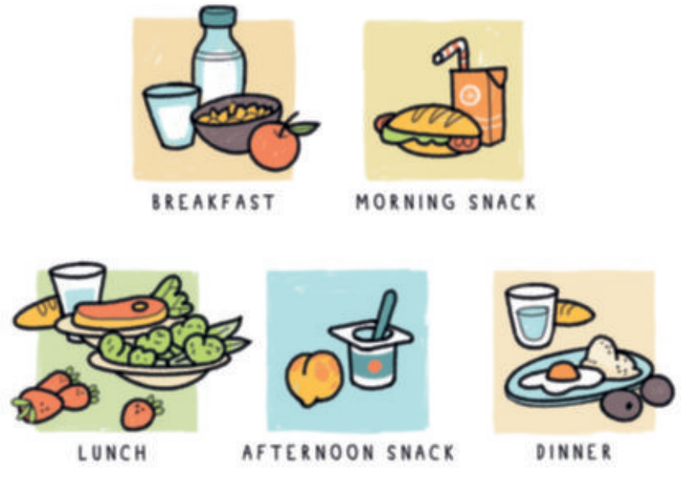
- The food pyramid helps us to know what kind of foods you should eat more of and what kind of foods you should eat occasionally.
- A healthy balanced diet gives us the right amount of energy and nutrients that we need.

Nutrients

- Food contains nutrients.
- When we eat, we obtain energy from food.
- Nutrients help us to grow and repair our body.
- Nutrients keep us healthy and give us energy.

Five meals

- It is healthy to eat five meals a day.



HEALTHY HABITS

PHYSICAL EXERCISE

HYGIENE

GOOD POSTURE

LEISURE TIME

REST

Richmond

SANTILLANA

1382275

05/10

Healthy habits

In this poster you will learn about healthy habits. It is very important to have healthy habits to make your body function and grow healthy. You need to have a healthy diet, good hygiene and good posture. You should do exercise and rest and sleep well.

Physical exercise

- Physical exercise is fun, as well as essential for good health. Some of the benefits are:
  - It makes you more flexible.
  - It makes your bones and muscles stronger.
  - It is good for your heart and lungs.
  - It helps you to relax and sleep well.
  - It helps you to maintain your correct weight.
  - It helps you to breathe, keep your balance, etc.

Good hygiene

- Hygiene means keeping your body clean. Good hygiene helps to prevent illnesses and it keeps you healthy.
- Good hygiene includes:
  - Having a shower every day.
  - Washing your hands before every meal and after you go to the toilet, or play with your pet.
  - Brushing your teeth after every meal.
  - Washing fresh fruit and vegetables.

Good Posture

- Your spine supports your back. If you have bad posture, this can deform your spine and cause back pain and other problems.
- To have good posture, you need to keep your back straight when you are sitting or walking.
- You shouldn't carry too much weight in your arms or on your back. Only carry the books you need each day in your school bag.

Leisure time

- To be healthy, everyone needs to have time for leisure activities. Leisure activities are things you do for fun in your free time.

Rest

- Sleep helps you to recover after a long day.
- Children should sleep ten hours a day.

ANIMALS

NUTRITION

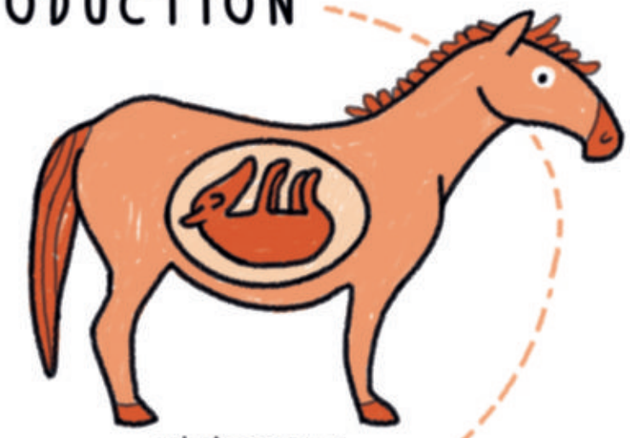
herbivore

carnivore

omnivore

REPRODUCTION

oviparous



viviparous

VERTEBRATES

spine

FISH

scales

fin

REPTILES

scales

shell

AMPHIBIANS

bare skin

BIRDS

beak

wings

feathers

MAMMALS

four legs

hair

INVERTEBRATES

SPONGES

WORMS

long, soft bodies

JELLYFISH

tentacles

MOLLUSCS

octopus

squid

starfish

ARTHROPODS

insect

spider

crab

06/10

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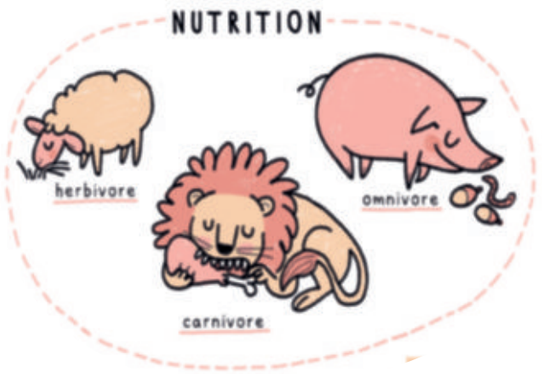
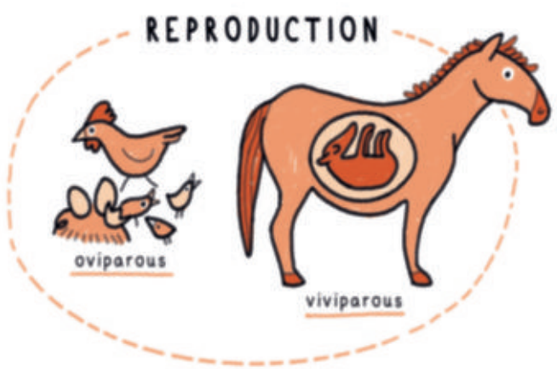
Animals

In this poster, you will learn to classify animals according to: nutrition, reproduction and whether or not they have a spine.



Nutrition

- Through the process of nutrition animals obtain from food, the energy and substances their bodies need.
- According to the food they eat animals are classified into:
  - Herbivores eat plants.
  - Carnivores eat other animals.
  - Omnivores eat food from plant and animal origin.



Reproduction

- Depending on the type of reproduction, animals can be:
  - Oviparous: the offspring grows inside an egg. For example, a chicken.
  - Viviparous: the offspring grows inside the mother's womb. For example, a zebra.
  - Ovoviviparous: the offspring grows in an egg inside the mother's womb and it hatches inside. The mother gives birth to live offspring. For example, some sharks.

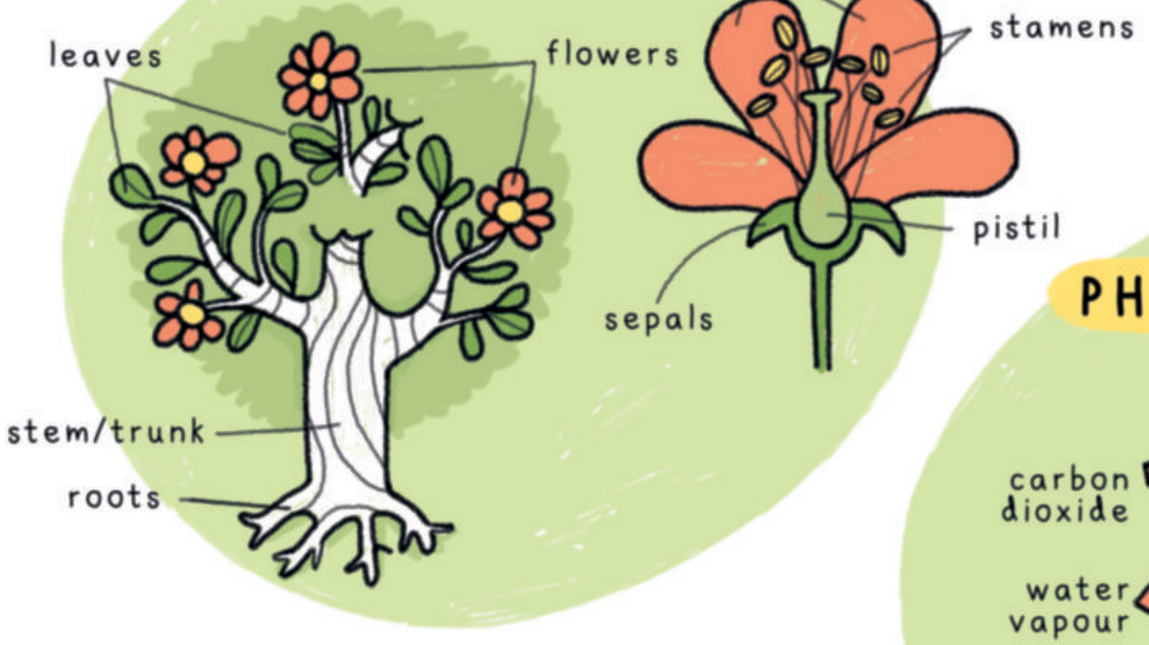
Vertebrates and invertebrates

- There are two types of animals: vertebrates and invertebrates.
- Vertebrates have an internal skeleton and a spine.
- Vertebrates are classified into five groups: mammals, birds, reptiles, amphibians and fish.
- Vertebrates have legs, fins, flippers or wings. Their bodies are covered with fur, feathers, scales or bare skin.
- Invertebrates don't have a spine.
- Some examples of invertebrates are: sponges, worms, jellyfish, starfish, octopus, flies, spiders and crabs.

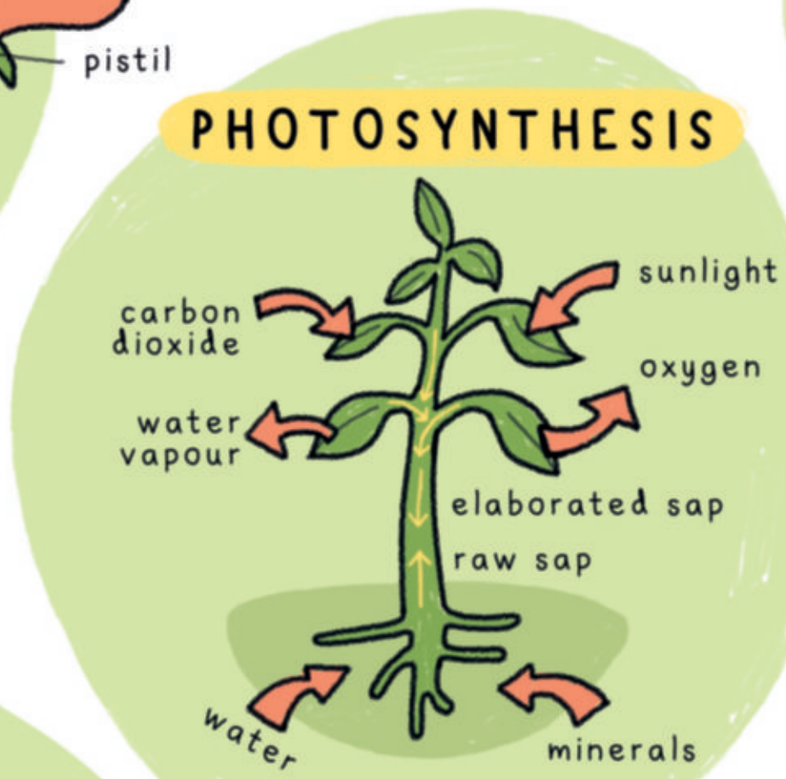
07/10

PLANTS

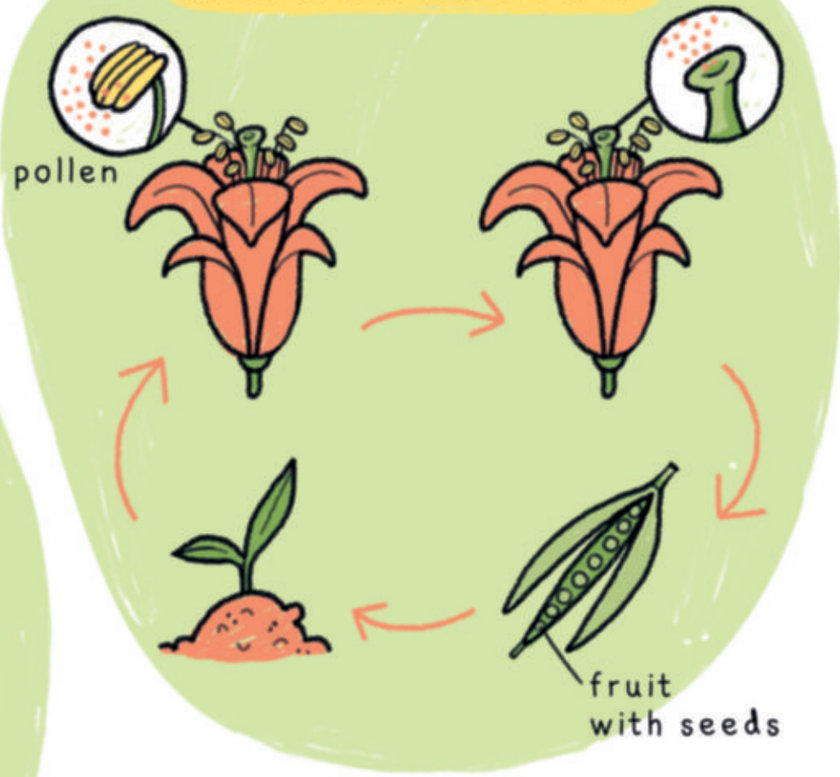
PARTS



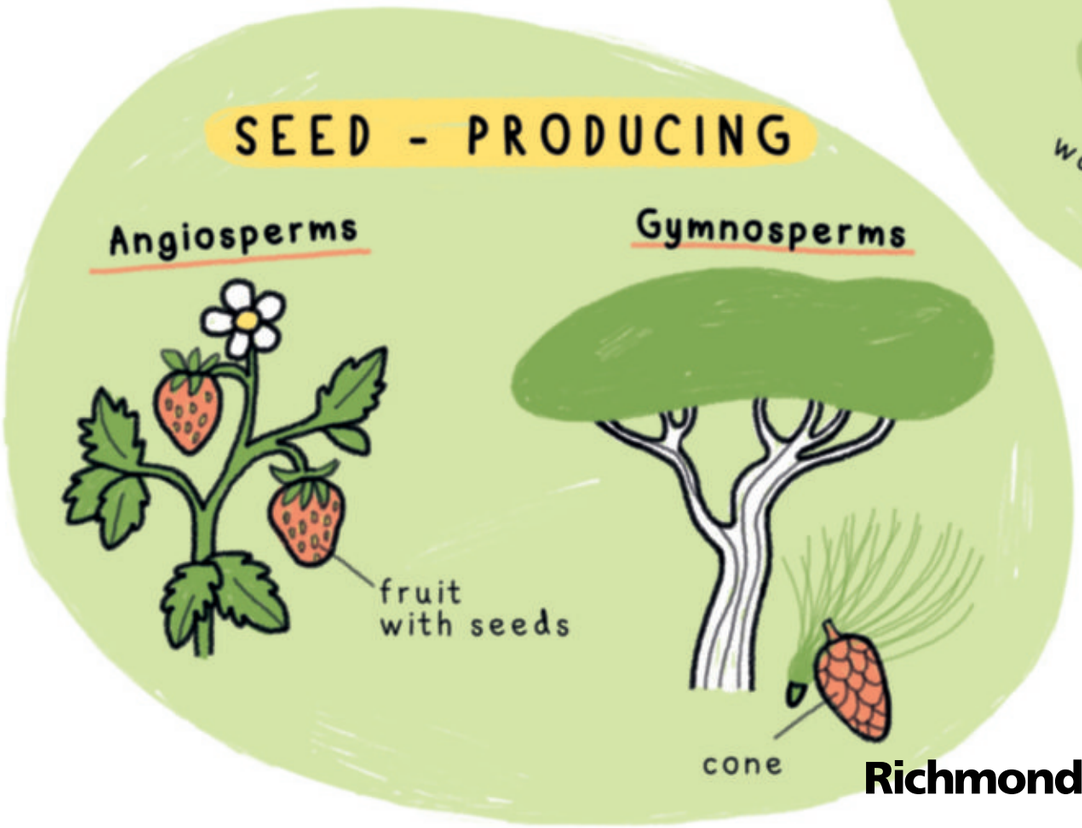
PHOTOSYNTHESIS



REPRODUCTION



SEED - PRODUCING



NON SEED - PRODUCING

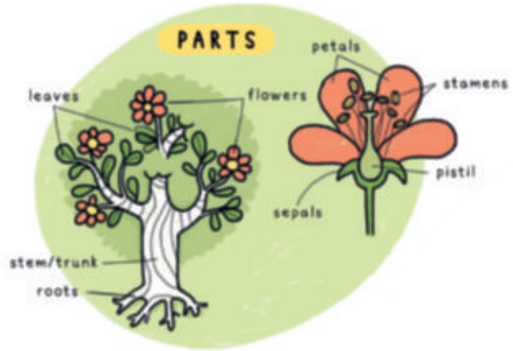
Richmond SANTILLANA

Plants

In this poster you will learn some of the most important characteristics of plants: their structure, how they reproduce and how they make their own food through photosynthesis.

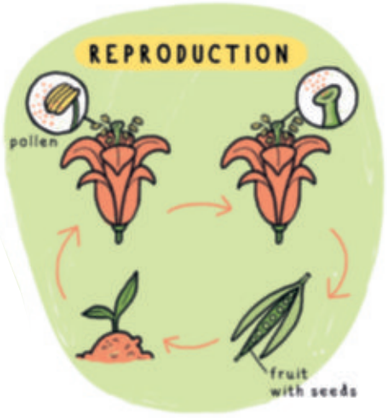
Parts of a plant

- All plants have roots, a stem and leaves.
- Some plants produce flowers with fruits and seeds.



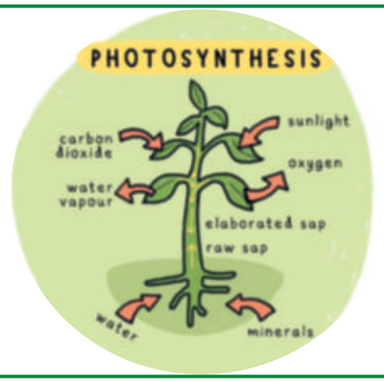
How do flowering plants reproduce?

- Flowers contain the reproductive organs of flowering plants. These organs produce seeds. The seeds grow into new plants.
- The stamens produce pollen. The pollen reaches the pistil transported by the wind or animals.
- The pistil contains an ovary. The ovary becomes a fruit.
- The ovary contains ovules. The ovules become seeds.
- New seeds fall to the ground, they germinate, and new plants grow.



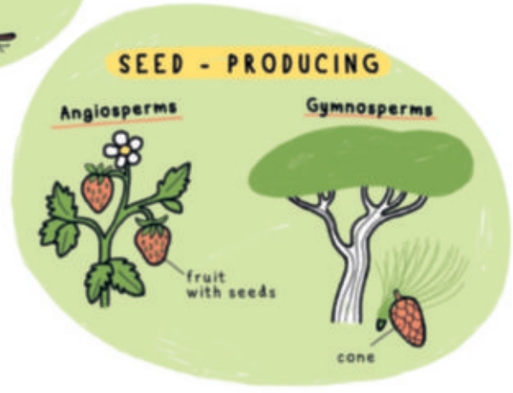
Photosynthesis

- Plants make their own food through a process called photosynthesis.
- To carry out photosynthesis plants need water and minerals from the soil, carbon dioxide from the air and sunlight.



How do we classify plants?

- Plants can be divided into two groups: seed-producing plants and non seed-producing plants.
- There are two types of seed-producing plants: angiosperms and gymnosperms.
  - Angiosperms have flowers that produce fruit. The fruit has seeds inside.
  - Gymnosperms don't have flowers. They produce cones. The cones have seeds inside.
- There are two types of non seed-producing plants: mosses and ferns.
  - Mosses are very small plants. They produce tiny spores in capsules. The spores grow into new plants.
  - Ferns have large leaves, called fronds. They produce spores. The spores grow on the underside of the fronds. The spores grow into new plants.



MATTER

PROPERTIES

- MASS — kilograms

- VOLUME — litres

TYPES

- Pure substances

- Mixtures

STATES

- Solid

- Liquid

- Gas

CHANGES

Physical changes

Change of state

Chemical changes

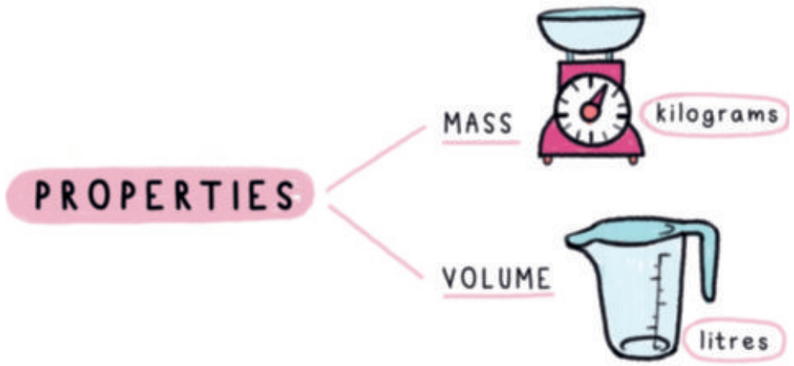
Combustion

Matter

Matter is everything that takes up space. In this poster you will learn about the properties of matter, the states of matter and substances.

What are the properties of matter?

- All objects have two properties in common: mass and volume.
  - Mass is the amount of matter in an object. Heavy objects have greater mass than light objects. We measure mass in kilograms.
  - Some things occupy a lot of space, but others occupy very little space. This is their volume. We measure volume in litres.

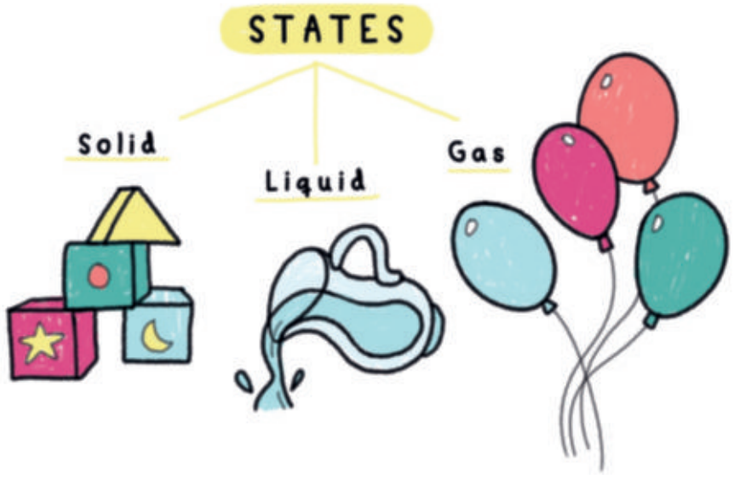


Pure substances and mixtures

- Matter can either be a pure substance or a mixture.
  - Pure substances are made up of a single type of matter.
  - A mixture is when two or more things are put together.

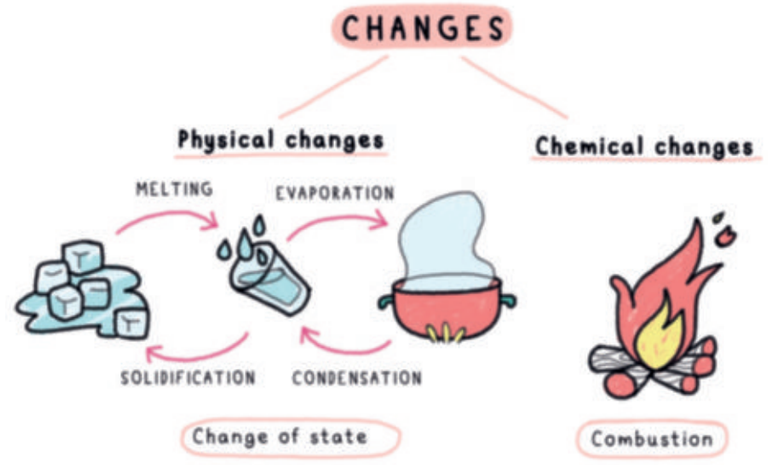
What are the states of matter?

- Matter exists in three states as solids, liquids and gases.
  - A solid has a fixed shape and fixed volume.
  - A liquid takes the shape of the container it is in.
  - A gas does not have a fixed shape or fixed volume.



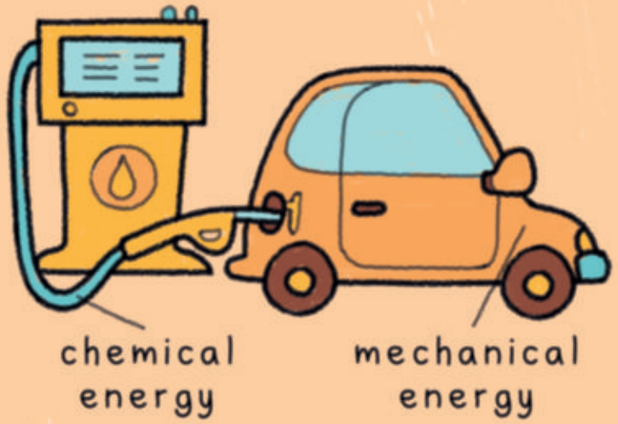
Changes in matter

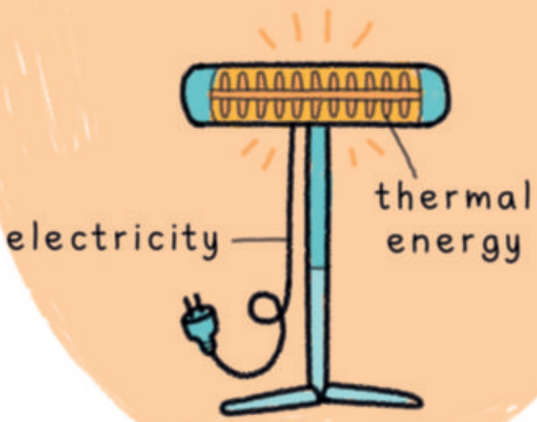
- Matter can go through two types of changes:
  - Physical changes, such as changes of state.
  - Chemical changes, such as combustion.



ENERGY

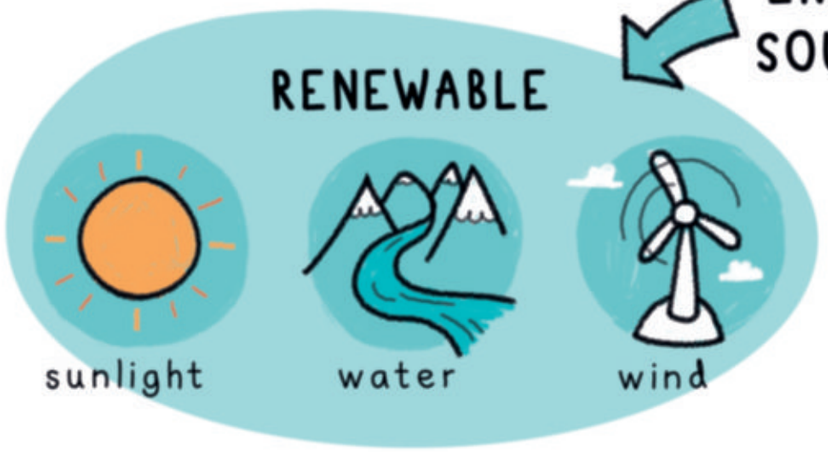
ENERGY CHANGES



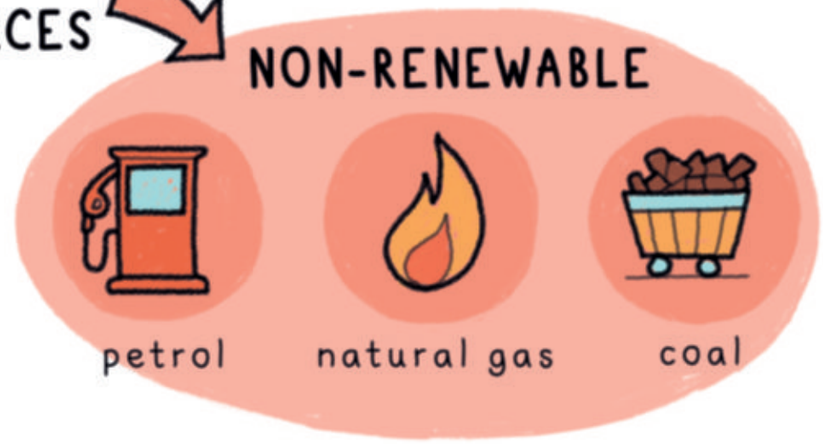


ENERGY SOURCES

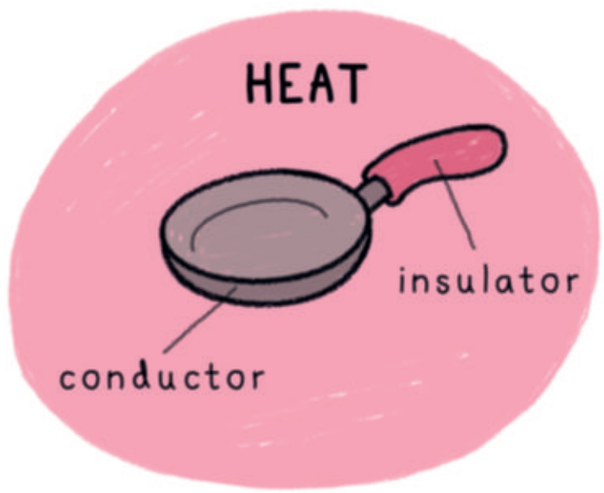
RENEWABLE



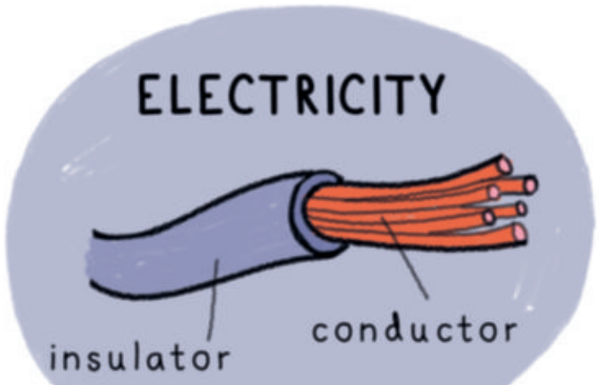
NON-RENEWABLE



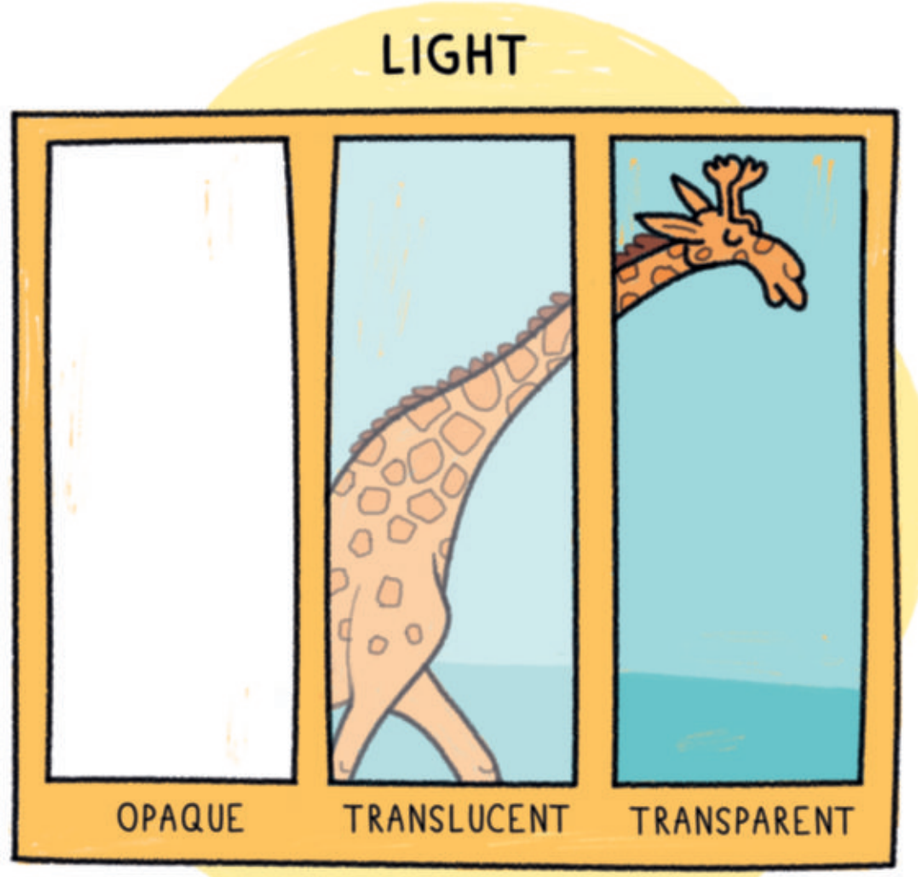
HEAT



ELECTRICITY



LIGHT



Richmond SANTILLANA

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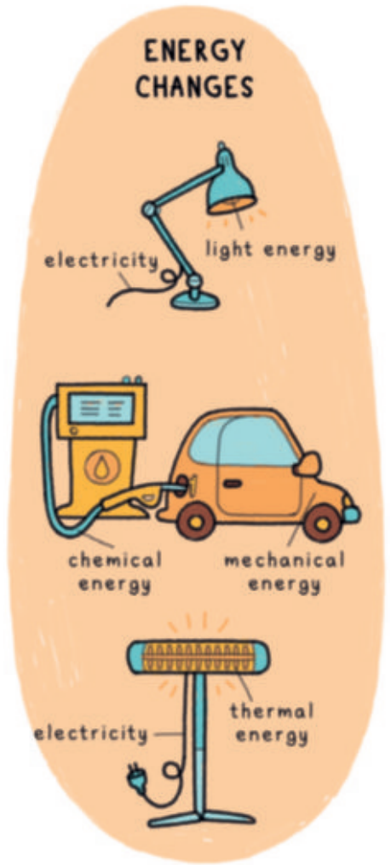
Energy

In this poster you will learn about energy, energy changes and different forms of energy. You will also learn the difference between renewable and non-renewable energies.

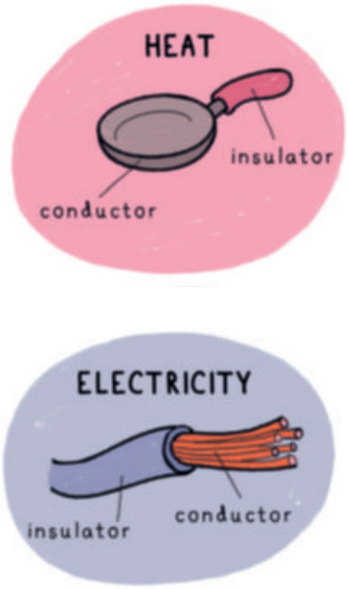
Different forms of energy

- We need energy for everything we do.
- There are different types of energy. The main types of energy are mechanical energy, electricity, light energy, chemical energy and thermal energy.
- Energy can transform into different types of energy.



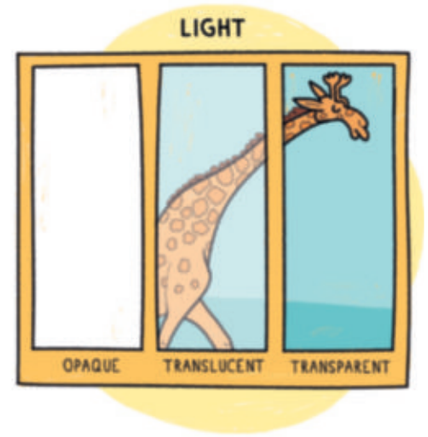
Heat and electricity

- Heat is a form of energy. Heat flows from hotter areas to colder areas and from one object to another.
- Thermal energy and electricity are two of the most used types of energy.
- Most metals are good conductors of heat. Water, steel, copper, silver and aluminium are good conductors of electricity.
- Insulators are bad conductors of heat and electricity. Some examples are: plastic, wood, ceramic and glass.



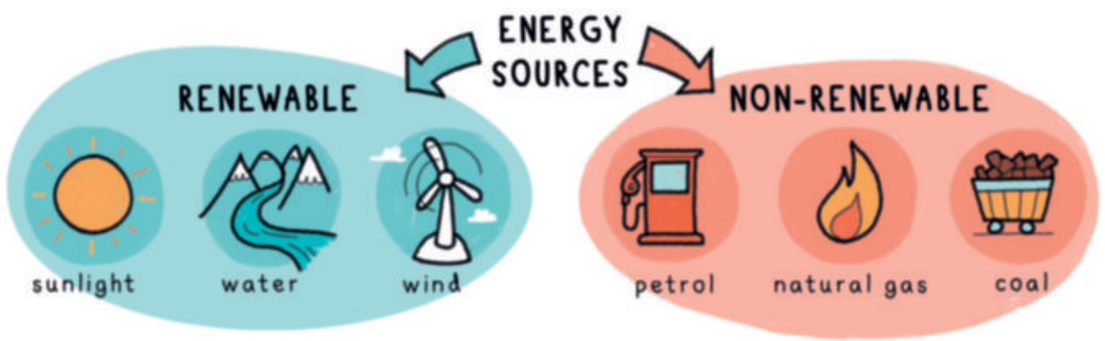
Light energy

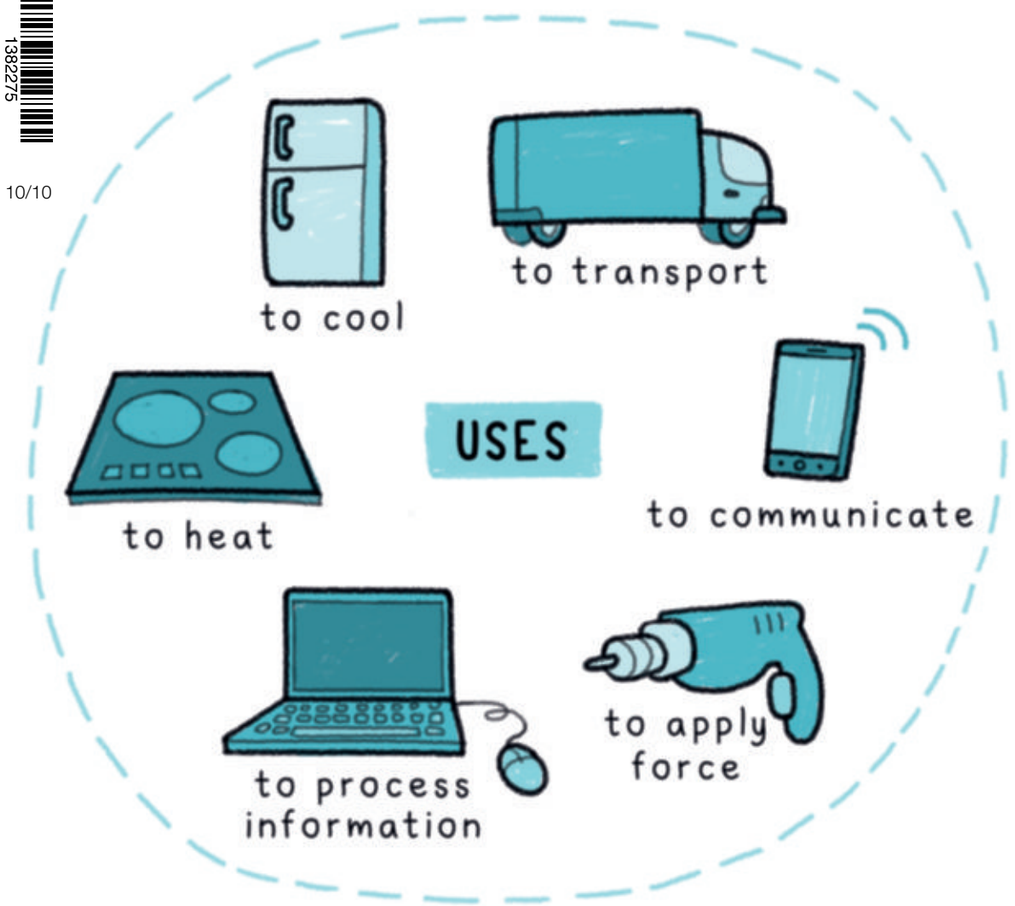
- We can see the world that surrounds us thanks to different light sources.
- Objects can be:
  - Opaque: Light can't pass through.
  - Translucent: Some light passes through.
  - Transparent: All light passes and we can see through them.

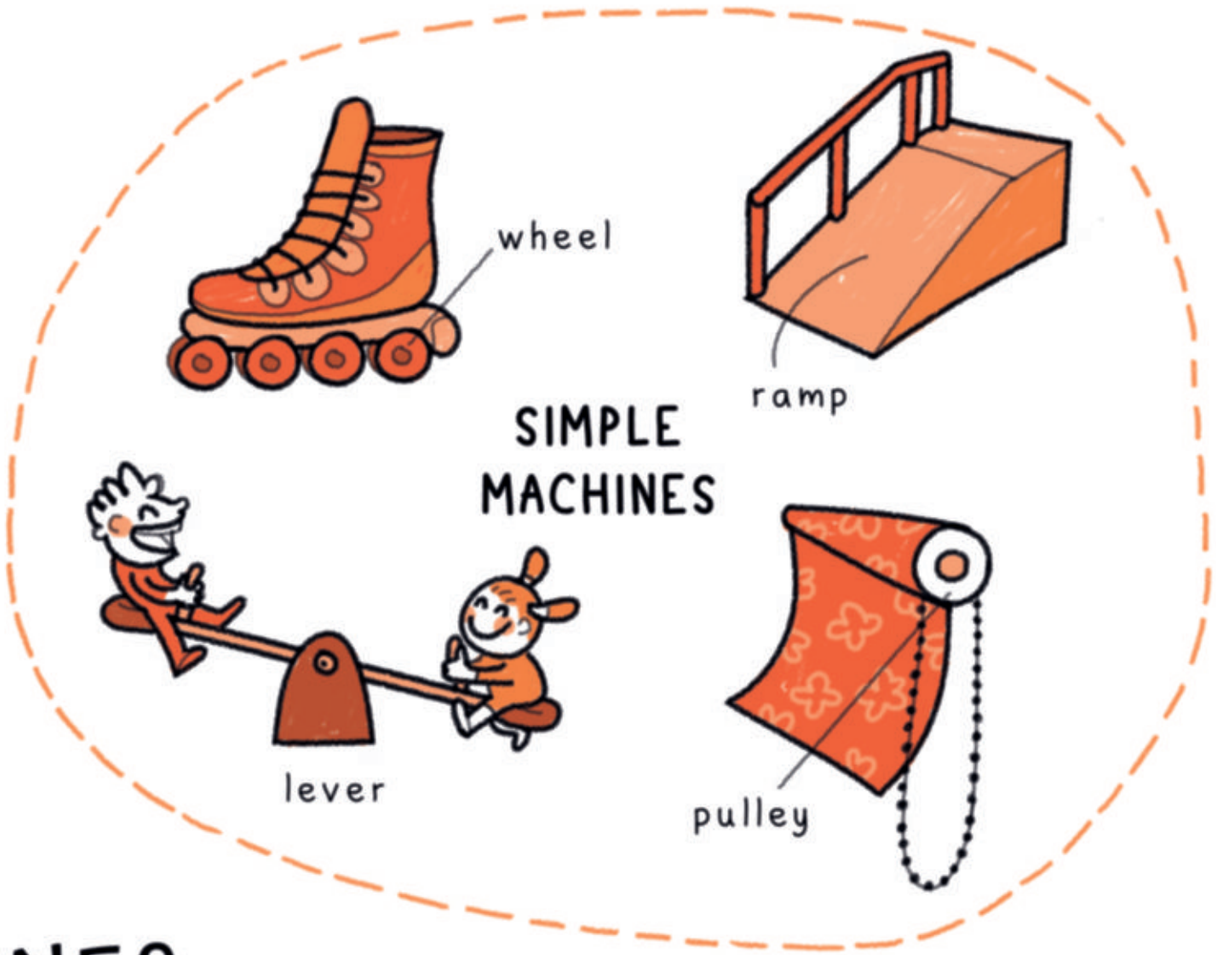


Energy sources

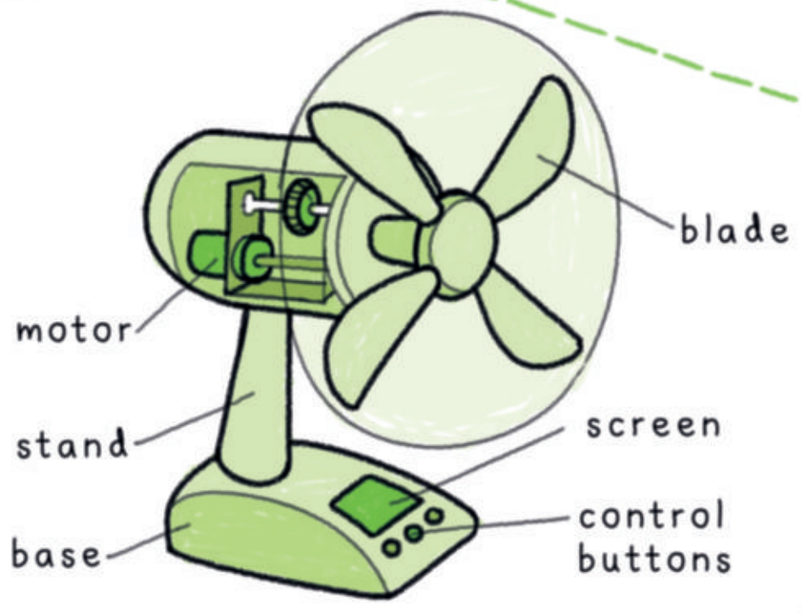
- There are two types of energy sources: renewable and non-renewable.
- Renewable energy sources never run out and can be regenerated. Some examples are sunlight, water and wind.
- Non-renewable energy sources will eventually run out. Some examples are petrol, natural gas and coal.



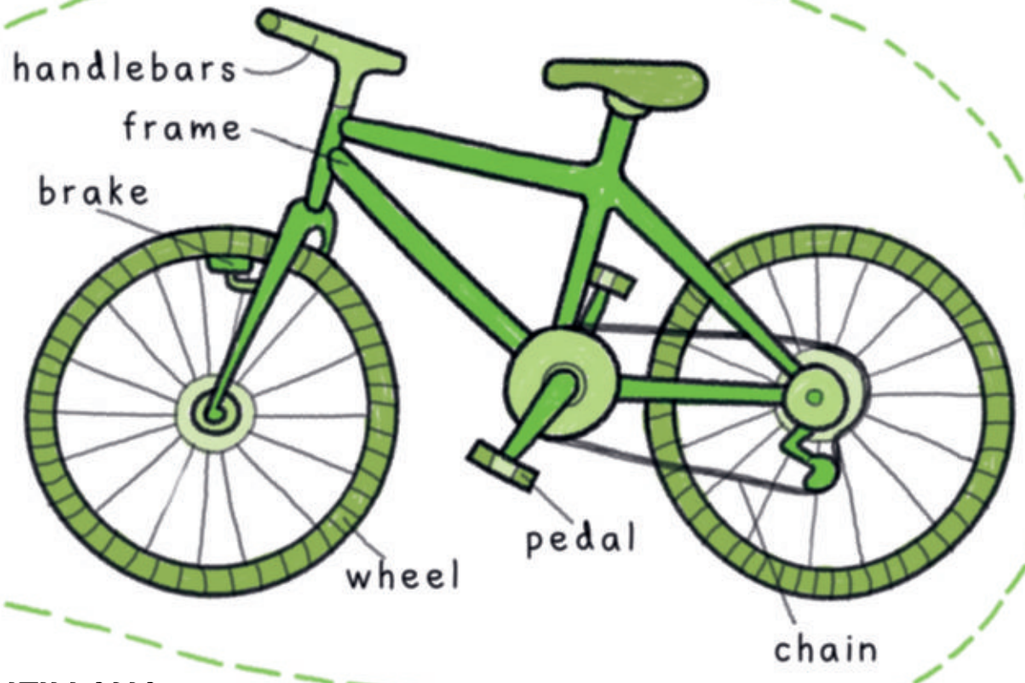




MACHINES



COMPLEX MACHINES



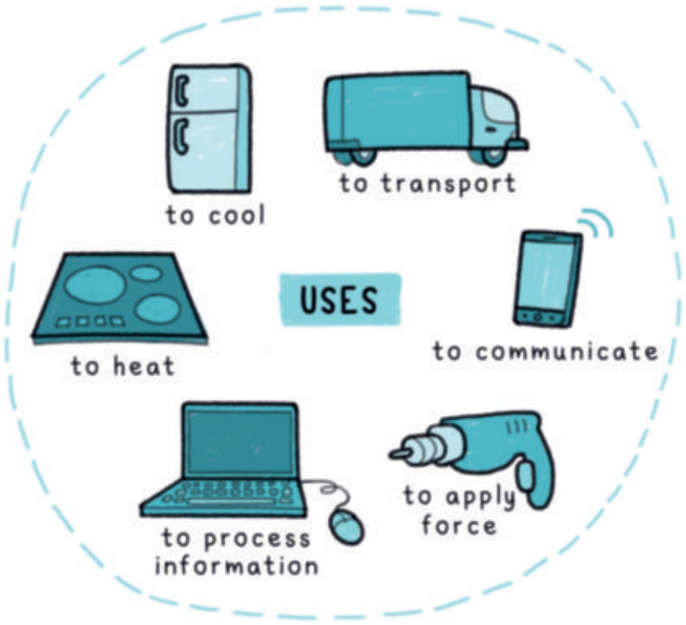
Machines

Machines are objects we use to make work easier.

In this poster you will learn about the uses of machines and how to classify them.

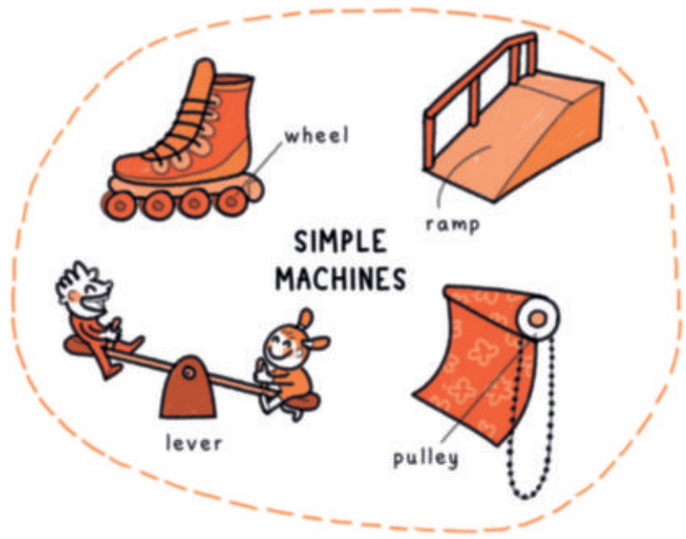
Uses of machines

- We use machines in our everyday life.
- Machines are used for different things: to apply force, to transport things, to heat or cool things, to communicate and to process information.



Simple machines

- Simple machines have one part or just a few parts.
- Simple machines work using energy from people. We use simple machines to perform easy tasks.
- The pulley, the ramp, the lever and the wheel are the most common simple machines.



Complex machines

- Complex machines are made up of many operating parts.
- They are used to do more complex work than simple machines.
- Some complex machines work using energy from people but most of them use electrical energy or thermal energy.