



Knowledge Organiser: Uses of everyday materials

Careers connected to materials: materials engineer, road designer, road engineer



Lesson Sequence



1. Identify different materials and their uses



2. Understand how to select the right materials to build a bridge



3. Explore and test the stretchiness of materials



4. Understand materials can change their shape by twisting, bending, squashing or stretching



5. Learn about Charles Macintosh and explore how materials are suitable for different purposes



6. Discover which materials change shape when making a road with John McAdam

materials

material		uses
wood		window frames, furniture, buildings, floors
metal		furniture, buildings, statues, pipes, jewellery
plastic		containers, toys, bags, pipes
brick		walls, floors
rock		roads, garden paths, floors, kitchen tops,
paper		toilet roll, writing paper, newspaper, cardboard
glass		drinking glass, windowpane, television screen

forces



pull

bend



bridge triangles



squash



drag

carry

pull

push





Lesson Sequence



1. Describe the needs of animals for survival



2. Describe the needs of humans for survival



3. Explore the importance of eating the right food



4. Describe what a healthy, balanced diet looks like



5. Investigate the impact of exercise on our bodies



6. Investigate hygiene

Precooked Food



Processed Food



Fresh Food



Frozen Food



Tinned Food



Each serving (150g) contains

Energy	Fat	Saturates	Sugars	Salt
1046kJ	3.0g	1.3g	34g	0.9g
250kcal	LOW	LOW	HIGH	MED
13%	4%	7%	38%	15%

Daily Needs of a Human

a place to live food water air sleep



Food Pyramid



Fats and Oils
Meat and Fish
Milk, Cheese and Dairy
Fruit and Vegetables
Bread and Cereal



Lesson Sequence



1. Compare the differences between things that are living, dead, and things which have never been alive



2. Identify and name a variety of plants and animals in a microhabitat



3. Design a suitable microhabitat where living things could survive



4. Find out what animals eat to survive in their habitat



5. Understand food chains



6. Understand the journey food makes from the farm to the supermarket

Food Chain

The grass is eaten by the rabbit.



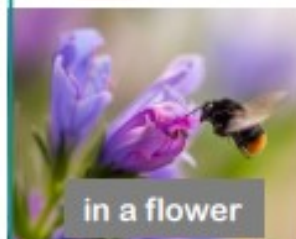
The rabbit is eaten by the fox.



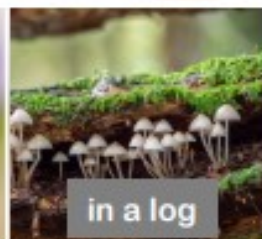
Dead or Alive

living			All living things breathe, eat, grow, move, reproduce and have senses.
dead			Something that was once a living thing.
non-living			Something that has never been alive.

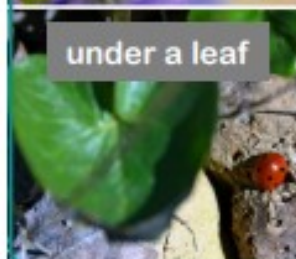
Microhabitats



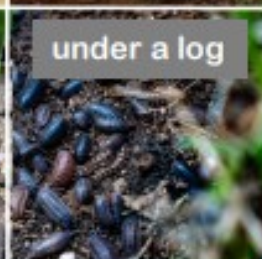
in a flower



in a log



under a leaf



under a log

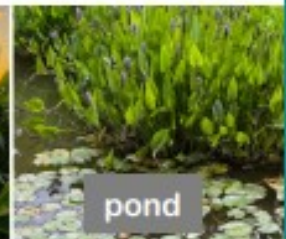
Habitats



woodland



farmland



pond



coastal



desert



mountain



Lesson Sequence



1. Learn how to order the stages of the human life cycle



2. Describe the stages of life from adulthood to old age



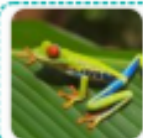
3. Learn how to match offspring to their parent



4. Explore the life cycle of a chicken

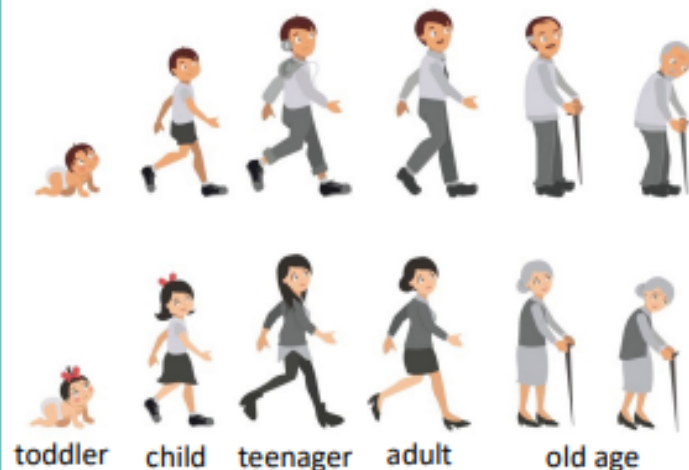


5. Describe the life cycle of a butterfly

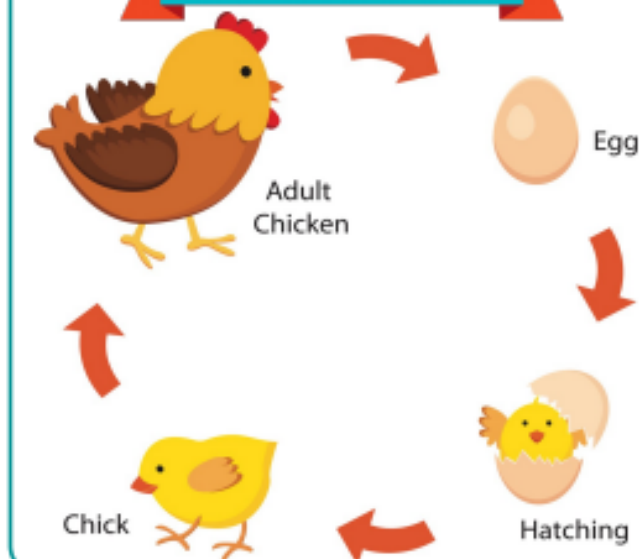


6. Explore the life cycle of a frog

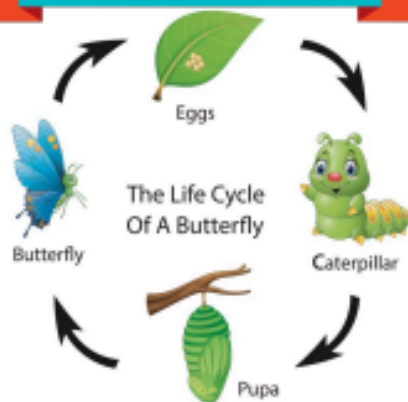
Human Life Cycle



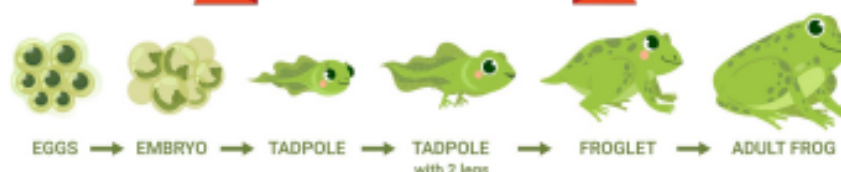
Chicken Life Cycle



Butterfly Life Cycle



Frog Life Cycle



1. Eggs – Female lays eggs which are fertilised by the male.
2. Tadpole – After 2-25 days the tadpole hatches from egg.
3. Jumps – Grows front legs. Uses nutrients in tail as food.
4. Grows fins and hind legs.
5. Adult Frog – Eats insects instead of plants. After 2-4 years it becomes an adult frog and can lay eggs.



Lesson Sequence



1. Know the differences between seeds and bulbs



2. Design an experiment to find out what plants need to grow



3. Describe what plants need to grow and stay healthy



4. Describe the life cycle of a plant



5. Observe and record the growth of plants over time



6. Understand that plants adapt to suit their environment

What Plants Need to Grow

Plants need **water** to survive. Plants get water through their roots.

Plants need the right **temperature** to grow.

Plants need **sunlight** to help them grow and make their own food.

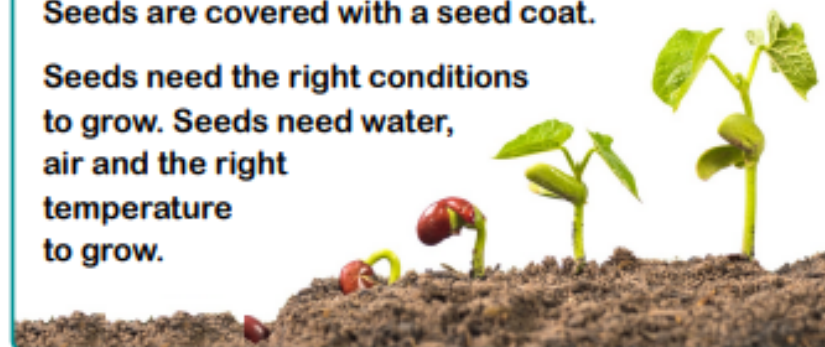
Plants need **room** to grow. Plants need time to grow. It can take days, months or even years for them to grow.



Life Cycle of a Plant

A plant **germinates** when it starts to grow. Inside a seed/bulb is the baby plant. Seeds are covered with a seed coat.

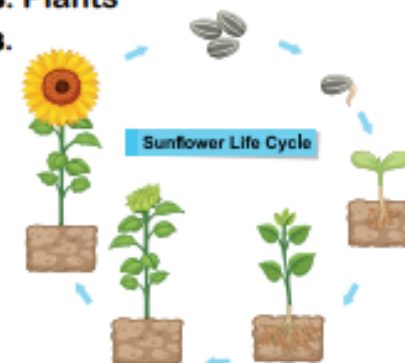
Seeds need the right conditions to grow. Seeds need water, air and the right temperature to grow.



Life Cycle of a Plant

Plants begin life as **seeds or bulbs**. They need soil, air and water to grow. Plants grow into young plants called **seedlings**. Plants grow **flowers and fruits**.

These produce seeds. When the plant pollinated the seeds find their soil. The process starts again!





Lesson Sequence



1. Learn about habitats



2. Appreciate that environments are constantly changing



3. Explore the rainforest and its problems



4. Describe life in the ocean



5. Discover the Arctic and Antarctic habitat



6. Create a model of a habitat

Microhabitats

Insects found in microhabitats include worms, snails, ants, centipedes, millipedes, and butterflies which help keep the microhabitat healthy.



Insects survive in their habitats because they can find the things they need to eat and drink.



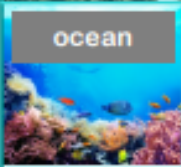
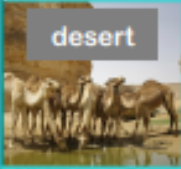

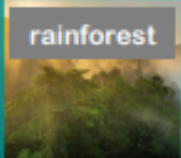
Food Chain

Animals and plants depend on each other to survive. Worms depend on plants because they feed on dead leaves, but plants depend on worms who make the soil healthy.



Birds need worms to eat. Worms are a source of food for birds. If there were no worms, there would be less birds as there would be more competition for food. The soil would be less healthy without worms.

Habitats

	Animals living in habitat	Food eaten
 pond	<ul style="list-style-type: none"> •Pond-skaters •Water snails •Water beetles •Water boatmen 	<ul style="list-style-type: none"> •Other insects
 mountain	<ul style="list-style-type: none"> •Mountain Lions •Mountain Goats •Wildcats •Hare 	<ul style="list-style-type: none"> •Deer •Grasses etc. •Mice, Rats •Grasses etc.
 ocean	<ul style="list-style-type: none"> •Dolphins •Sharks •Corel •Turtles 	<ul style="list-style-type: none"> •Fish, squid •Fish •Algae •Sardines etc.
 desert	<ul style="list-style-type: none"> •Camels •Fennec Fox •Bat •Bobcat 	<ul style="list-style-type: none"> •Grass, wheat •Lizards, birds •Flying insects •Birds, rabbits
 woodland	<ul style="list-style-type: none"> •Blackbirds •Oak Trees •Deer •Foxes 	<ul style="list-style-type: none"> •Worms, insects •Mice, Rats
 rainforest	<ul style="list-style-type: none"> •Chimpanzees •Gorillas •Mahogany Trees •Parrots 	<ul style="list-style-type: none"> •Nuts, fruit, insects •Bamboo, fruit •Nuts, vegetables