



Subject: Science Topic: Life by the sea Year group: 2 Term: Summer 1 and 2
Animals including humans

National Curriculum Objectives

notice that animals, including humans, have offspring which grow into adults

find out about and describe the basic needs of animals, including humans, for survival (water, food and air)

describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene

Prior Learning

Can classify into vertebrate (groups) & invertebrates. Can classify into carnivores, herbivore & omnivores (Animals Yr1)

Can link 5 senses to sense organs (Animals Yr1)

Knows 7 processes of life – growth, nutrition (Living things Yr2)

Habitat provides basic needs – , water, heat, food (Living Yr2)

Plant life cycle (comparative stages) (Plants Yr2)

Matter exists as solids, liquids & gases (Materials Yr2)

Future Learning

In KS2

identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat

identify that humans and some other animals have skeletons and muscles for support, protection and movement

Key Questions

What is the life cycle of a butterfly?

What happens as we grow?

Do humans have a life cycle?

Do all animals grow in the same way?

What are the 5 main food groups?

How do we stay healthy?

What is oral health?

What are the effect of exercise on our bodies?

Substantive Knowledge (key facts and concepts)

For KS1 the human life cycle starts at a baby. The children need to know that humans have offspring, but no earlier than a baby- not embryo etc

To know that children ages 6-7 should have 1 hour of vigorous exercise per day.

Teeth should be brushed twice a day. Once after breakfast and once before bed for a minimum of 2 minutes with an age appropriate toothpaste.

Exercise transforms the body by strengthening muscles and bones, boosting cardiovascular health, reducing disease risk, and enhancing mental well-being. It promotes weight management, improves sleep, and boosts energy levels by increasing blood flow, oxygen, and metabolic rate. Regular activity lowers blood pressure and helps manage anxiety.

Disciplinary Knowledge (Working scientifically)

asking simple questions and recognising that they can be answered in different ways

observing closely, using simple equipment

performing simple tests

identifying and classifying

using their observations and ideas to suggest answers to questions

gathering and recording data to help in answering questions

Sequence of lessons

1. What is the life cycle of a butterfly?

Sticky Knowledge

What is a vertebrate? An animal with a backbone

How do we keep safe in the dark? Hi vis, torches, warm clothes, reflectors (Y1)

What does Mrs Gren stand for? Movement, respiration, sensitivity, growth, reproduction, excretion and nutrition

Intent- Caterpillars

Introduce the caterpillars and explain how we look after them. Look in depth at the life cycle of the butterfly (see knowledge organiser). Keep a record of what happens to the caterpillars when (observation over time) and link with the life cycle.

2 What happens as we grow?

Sticky Knowledge

What is a mammal? Has fur/hair, has living young, feeds young milk (y1)

What is a life cycle? The stages of a living thing thorough time.

What are the four seasons? (y1)

Intent

Know that humans have offspring. They are children of adults through reproduction.

Know the stages of offspring to adults to old age humans.

Know that growth means an increase in size and complexity

3.Do humans have a life cycle?

Sticky Knowledge

What does growth mean? An increase in size and complexity

What does it mean if something is dead? It once had the 7 processes, but not anymore
Do humans have offspring?

Intent

Know that humans have a life cycle (Linking back to living things and their habitats)
Investigate the human life cycle. (see knowledge organiser). Discuss what humans can do at each stage.

4. Do other animals grow in the same way?

Sticky Knowledge

What is an invertebrate? An animal with no backbone

What are the parts of plant? Stem, flower, roots, leaves

What is a habitat? A home that provides all the things needed for survival

Intent

Can describe other life cycles in vertebrates and invertebrates

Can describe similarities and differences in life cycles.

Look at the caterpillar life cycle- is it similar or different to the human life cycle?

Chickens/frogs/dragonfly/puppy

5. What do animals need to survive?

Sticky Knowledge

What is a carnivore? An animal that eats other animals.

How do we stay safe in the sun? Sun cream, hats, lots of water, staying cool (y1)

Name a natural non-living item. Rock, water, air

Recall the 7 processes of life. (MRS GREN)

Know that all animals need water, food, air to survive.

Water- makes up most of our body, needed to digest food and move nutrients around the blood

Food- The grow and repair our bodies

Oxygen- To help muscles/etc to work (respiration)

6. What are the 5 main food groups?

Sticky Knowledge

Name a habitat? Forest, desert etc

What animals would you find in a desert?

What are the stages of the human life cycle?

Baby, toddler, child, teenager, adult, old age.

Intent

Know the 5 main food groups and foods that fall into each type. Link to the eat well plate.

7. What are healthy and unhealthy foods?

Sticky Knowledge

What is a herbivore? An animal that eats plants
How do you wind? A wind sock
What is a habitat? A home that provides all the things needed for survival

Intent

Due to half term break recap quickly the 5 food groups and the eat well plate.
Talk about healthy and unhealthy foods. What are they?
Know that food provides energy- Some food more than others
Know that unhealthy foods are ok in moderation- as a treat.
Know which foods they should eat more/less off.

Sort foods into healthy, unhealthy

8. Why is water so important for us?

Sticky Knowledge

Name the four seasons (y1)
What is an omnivore? Eats both plants and animals
What is a microhabitat? a small, specific area within a larger habitat that possesses its own unique environmental conditions

Intent

Know some drinks can be unhealthy for us (fizzy drinks, energy drinks)
Some can be really good for us (milk, water, OJ)
Know that water helps us stay hydrated.
Talk about when we should drink water (After exercise, when its hot, when we feel thirsty)
Know that if we don't drink enough water we can get dehydrated and what that means.
Think about how much water the children have drunk today
Know that we should have 6-8 glasses of water a day- do you?

9. How can we keep our teeth healthy?

Sticky Knowledge

What month comes after December? (y1)
What is a herbivore? An animal that eats plants
What are the stages of the human life cycle?
Baby, toddler, child, teenager, adult, old age.

Intent

Linking to healthy/unhealthy foods. Discuss sugar and the effect on teeth. (Decay)
Know that sugar can create cavities if teeth are not brushed
Know it is important to brush teeth twice a day for 2 mins- usually after breakfast and before bed.

10. How can we protect ourselves from germs?

Sticky Knowledge

What does waterproof mean? (y1)
What is a habitat? A home that provides all the things needed for survival
How often should we brush our teeth?

Intent

Know that good hygiene removed germs (bacteria/viruses_ that can make you feel poorly- could link with COVID 19, colds, flu) and stops you passing them on to others.
Talk about good hygiene and washing hands.
When? For how long? (20 seconds or happy birthday)
Know that germs spread by contact
Sprinkle glitter (representing germs) on hands.
Have them shake hands with one person to see how germs spread, then try washing them off with just water, then soap and water.

11. Why is exercise important?

Sticky Knowledge

What are the 5 main food groups?
How long should we wash our hands for? 2 seconds of 'happy birthday'
What is a habitat? A home that provides all the things needed for survival

Intent

Know that exercise helps a healthy heart/lungs, muscle strength, concentration and mental health.
Know that exercise makes the heart beat faster.
Know that the heart pumps faster to deliver blood to the muscles.

12. What are the effects of exercise on our bodies?

Sticky Knowledge

What are the 5 main food groups?
What does Mrs Gren stand for? Movement, respiration, sensitivity, growth, reproduction, excretion and nutrition
What is a consumer? Something that eats something else.

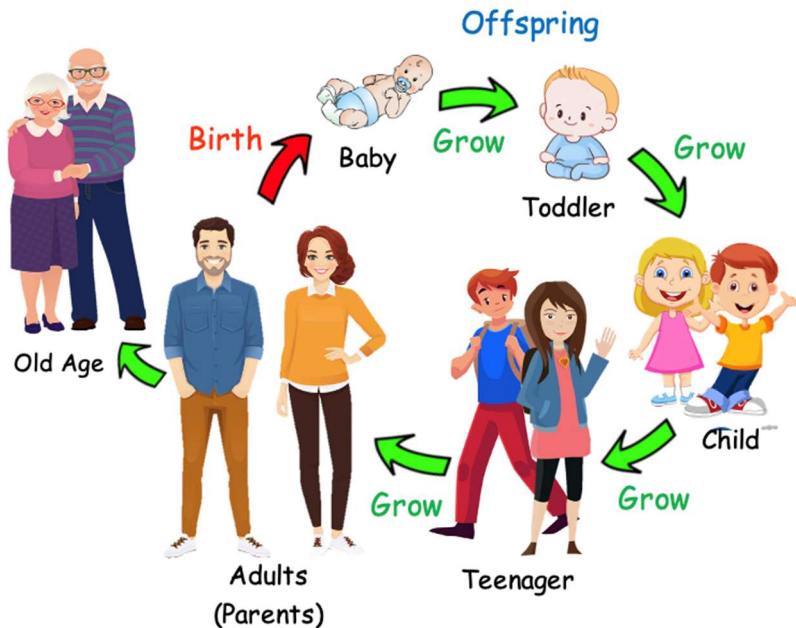
Intent

Know that they can feel the changes exercise makes on their body (increases heart rate, pulse, increased breathing) Recap why there body is doing this, and back to staying hydrated.
Know that children ages 6-7 should do 1 hour of vigorous exercise a day.

Children to complete physical activity and feel the change

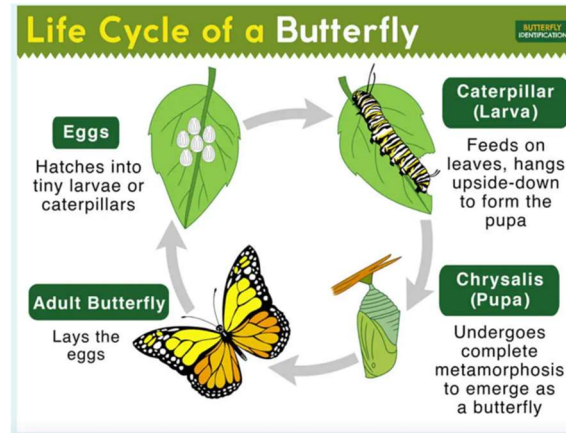
Knowledge organiser

Human life cycle



Life cycle of a butterfly

- **Caterpillar (Larva) Stage:** 7–10 days. The caterpillars eat, grow, and shed their skin several times, often growing to ten times their original size.
- **Forming the Chrysalis (Pupation):** 1–2 days. The caterpillars will climb to the top of their cup, hang in a "J" shape, and harden into a chrysalis.
- **Chrysalis (Pupa) Stage:** 7–10 days. The transformation takes place inside. The chrysalis may shake if disturbed, which is normal.
- **Emergence (Eclosion):** The adult butterfly emerges with soft, crumpled wings, which take about 1–2 hours to dry and expand to full size.



M	ovement
R	espiration
S	ensitivity
G	rowth
R	eproduction
E	xcretion
N	utrition

Misconceptions

All baby animals are little versions of their parents. Animals only need food & water to live. Some animals, like worms, eat soil. Fats are bad for you. Dieting & fruit drinks are good for you. Running is bad for your knees. Exercise can overcome a bad diet. Exercise takes too much time. Exercise needs to hurt for you to get fit. Everyone knows how to wash their hands.

Important Scientists



Maurice Hilleman (1919-2005) American scientist who developed the MMR vaccine that greatly reduced childhood deaths for measles, mumps and rubella. In 2010 Andrew Wakefield falsely linked MMR with autism. This is still causing significant harm through reduced vaccinations by worried parents.



Joseph Lister (1827-1912) British Doctor who revolutionised surgery by using antiseptics (carbolic acid) to prevent infections. He used Louis Pasteur's earlier 'germ theory' in his work. His results though weren't without problems – carbolic acid is toxic.

Eatwell Guide

Check the label on packaged foods

Each serving (150g) contains

Energy	Fat	Saturated	Sugars	Salt
1040kJ 250kcal	3.0g	1.3g	34g	0.9g
LOW	LOW	LOW	HIGH	MED
13%	4%	7%	38%	15%

of an adult's reference intake

Typical values (as sold) per 100g: 697kJ/ 167kcal

Choose foods lower in fat, salt and sugars

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.



Per day 2000kcal 2500kcal = ALL FOOD + ALL DRINKS

6-8 a day

Water, lower fat milk, sugar-free drinks including tea and coffee all count.

Limit fruit juice and/or smoothies to a total of 150ml a day.

WHY IS EXERCISE GOOD FOR YOU?

IT MAKES US STRONG
Exercise helps our muscles and bones grow strong!

IT KEEPS OUR HEARTS HEALTHY
Our hearts pump blood around our bodies – exercise helps them stay fit!

IT MAKES US FEEL HAPPY
Moving our bodies can help us feel good and smile more.

IT GIVES US ENERGY
Exercise helps us feel awake and ready to learn.

IT HELPS US CONCENTRATE
After moving, our brains are ready to think and learn better.

FUN WAYS TO EXERCISE

- ★ Running
- ★ Jumping
- ★ Dancing
- ★ Riding a bike
- ★ Playing games

REMEMBER!

Drink water after exercise to stay healthy.

MOVE YOUR BODY EVERY DAY TO STAY HAPPY AND HEALTHY!

Why is exercise good for you?

Exercise transforms the body by strengthening muscles and bones, boosting cardiovascular health, reducing disease risk, and enhancing mental well-being. It promotes weight management, improves sleep, and boosts energy levels by increasing blood flow, oxygen, and metabolic rate. Regular activity lowers blood pressure and helps manage anxiety.

Children aged 6-7 should engage in at least **60 minutes** (one hour) of moderate-to-vigorous physical activity daily, spread throughout the day. This should include aerobic activities like running, as well as strengthening exercises for bones and muscles—such as jumping or climbing—at least three days a week