SCIENCE · Y4 & Y6

Animals & Food Chains

Knowledge Organiser — Year 4 & Year 6 Science

Key vocabulary

1. **Vertebrate**
   An animal WITH a backbone. Mammals, birds, fish, reptiles, amphibians.
2. **Invertebrate**
   An animal WITHOUT a backbone. Insects, spiders, worms, snails, jellyfish.
3. **Mammal**
   Warm-blooded vertebrate with fur. Live young. Feeds babies milk.
4. **Reptile**
   Cold-blooded vertebrate with scales. Lays eggs. Snakes, lizards, crocodiles.
5. **Amphibian**
   Cold-blooded vertebrate. Lives part in water, part on land. Frogs, toads, newts.
6. **Bird**
   Warm-blooded vertebrate with feathers. Lays eggs.
7. **Fish**
   Cold-blooded vertebrate. Lives in water. Has gills.
8. **Producer**
   A living thing that makes its own food. Plants are producers.

9	**Consumer** A living thing that eats other living things to get energy.
10	**Predator** An animal that hunts and eats other animals.
11	**Prey** An animal that is hunted and eaten.
12	**Herbivore** Animal that only eats plants. Cows, rabbits, deer.
13	**Carnivore** Animal that only eats meat. Lions, sharks, eagles.
14	**Omnivore** Animal that eats both plants and meat. Humans, bears, foxes.
15	**Decomposer** Living thing that breaks down dead matter. Mushrooms, bacteria, worms.

al classification

Two big groups, then five vertebra

- ALL ANIMALS = vertebrates OR invertebrates.
- VERTEBRATES (with backbone) split into 5 main groups:
- - MAMMALS: fur, warm-blooded, live young, milk. (humans, dogs, whales)
- - BIRDS: feathers, warm-blooded, lay eggs. (sparrows, eagles, penguins)
- - REPTILES: scales, cold-blooded, lay eggs. (snakes, lizards, turtles)
- - AMPHIBIANS: smooth skin, cold-blooded, live both in water and land. (frogs, toads)
- - FISH: scales, gills, live in water. (sharks, salmon, goldfish)
- INVERTEBRATES are MORE numerous than vertebrates — over 95% of all animals!

- Examples: insects, spiders, worms, snails, octopuses, jellyfish, crabs.

s — how energy flows

From sun to top predato

- 1. SUN gives energy to plants.
- 2. PRODUCER (plant) makes food using sunlight.
- 3. PRIMARY CONSUMER (herbivore) eats the plant.
- 4. SECONDARY CONSUMER (carnivore) eats the herbivore.
- 5. TERTIARY CONSUMER (top predator) eats the secondary consumer.
- 6. DECOMPOSERS break down dead things, returning nutrients to soil.
- Example chain: GRASS → RABBIT → FOX → (when fox dies) FUNGI
- Arrows in food chains show ENERGY FLOWING — point at WHO IS EATING.
- Energy is LOST at each step (90% lost as heat) — that's why there are fewer top predators.

Food webs

Real ecosystems are intercon

- A FOOD WEB is many food chains joined together.
- Most animals eat MORE THAN ONE thing — and ARE EATEN by more than one.
- Example: a rabbit might eat grass, dandelions, and clover. It might be eaten by a fox, a hawk, or an owl.
- Food webs show this complexity.
- If ONE species disappears, it affects many others.
- Example: if rabbits disappear, foxes have less food AND grass grows uncontrolled.
- This is why protecting biodiversity matters — each species is connected.