

# SCIENCE KEY KNOWLEDGE YEAR 6

## WHAT CAN YOU REMEMBER?

### Evolution and Inheritance

1. **Understanding Fossils:** I know that a fossil is the remains or impression of a prehistoric plant or animal embedded in rock, and by analyzing these fossils, we can learn about the past.
2. **Concept of Evolution:** I know that evolution is the process through which living things gradually change over time, leading to the diversity of life we see today.
3. **Role of Adaptation:** I know that adaptation occurs when living things change to better suit their environment, helping them survive and thrive.
4. **Darwin's Theory:** I know that Charles Darwin's theory of evolution explains how natural selection, or survival of the 'fittest,' has driven changes in species over time.
5. **Species and Inheritance:** I know that a species is a group of living things with similar characteristics that can breed to produce offspring, and I understand that inheritance is how features are passed from parents to their offspring, contributing to variation within a species.

### Light

1. **Straight-Line Travel:** I know that light travels in a straight line, which helps us understand how we perceive the world around us.
2. **Seeing Objects:** I know that we can see objects because they either emit light (light sources) or reflect light into our eyes.
3. **Path of Light:** I know that light travels directly from a light source to our eyes or from a light source to an object and then into our eyes.
4. **Understanding Shadows:** I know that a shadow is a dark shape created when light is blocked by an object or person, and because light travels in straight lines, shadows mirror the shape of the objects that cast them.
5. **Reflection of Light:** I know that smooth, shiny surfaces, like mirrors and polished metals, are excellent at reflecting light, making them useful for seeing our reflections.

### Electricity

1. **Series Circuits:** I know that a series circuit connects components directly to each other, creating a single path for electricity to flow.
2. **Broken Circuits:** I know that when a circuit is broken, it stops the flow of energy, and the entire circuit will not function.
3. **Universal Symbols:** I know the universal symbols for circuit components—like wires, cells, buzzers, motors, bulbs, and on/off switches—that visually represent how circuits work.
4. **Effect of Cells:** I know that adding more cells to a circuit increases the battery voltage, resulting in more energy flow, which makes bulbs brighter and buzzers louder.
5. **Switch Functionality:** I know that when a switch is off, the circuit is broken, stopping the flow of energy and preventing components, like bulbs, from lighting up. When the switch is on, energy can flow through the complete circuit, allowing the components to work.

### Living Things

1. **Linnaean System:** I know that Carl Linnaeus created the Linnaean System, a method for classifying and naming living organisms based on shared characteristics.
2. **Five Kingdoms of Life:** I know that there are five kingdoms of life: bacteria, fungi, plants, protists, and animals, which encompass millions of different kinds of organisms.
3. **Species and Scientific Names:** I know that a species is a category within the classification system where all living things of the same type belong, and that the genus and species together give a living organism its scientific name.
4. **Animal and Plant Classes:** I know that the animal kingdom is divided into five classes: fish, amphibians, reptiles, birds, and mammals, while plants are classified into four main groups: mosses and liverworts, ferns, conifers, and flowering plants.
5. **Microorganisms:** I know that a microorganism is a living thing so small that it must be viewed with a microscope, and there are four main types: bacteria, fungi, algae, and protozoa. While some microorganisms are helpful (like those used in fermentation), others can be harmful (such as pathogens that cause disease).

### Circulatory System

1. **Main Parts of the Circulatory System:** I know the four main parts of the human circulatory system are the heart, arteries, veins, and blood, working together to transport vital substances throughout the body.
2. **Heart Structure:** I know that the heart is a hollow muscle about the size of my fist, located slightly to the left of the center of my chest, and is divided into four chambers: two atria (upper chambers) and two ventricles (lower chambers).
3. **Blood Flow Path:** I know that the right atrium receives deoxygenated blood from the body, and the right ventricle pumps it to the lungs. In contrast, the left atrium receives oxygenated blood from the lungs, and the left ventricle pumps it to the rest of the body.
4. **Blood Composition and Functions:** I know that blood consists of several components: red blood cells carry oxygen and carbon dioxide, plasma transports nutrients and waste, white blood cells fight infections, and platelets help with blood clotting.
5. **Impact of Diet and Exercise:** I know that diet affects the body's functions by providing essential nutrients like carbohydrates, proteins, fats, vitamins, and minerals. Additionally, exercise increases heart rate to transport oxygen more efficiently.

