# Age 10-11

## (A) life and living things

**1. Humans and other animals**
***Nutrition and health***
- learn about the need for food for activity and growth, and about the importance of an adequate and varied diet for health: examine the value of a balanced diet, composed of carbohydrates, fats, proteins, vitamins, mineral salts, fibre and water, in the maintenance of good health
- learn about the harmful effects on the human body of tobacco, alcohol and other drugs.

**2. Green plants**
***Reproduction in flowers***
- study the role of the parts of the flower in the life cycle of flowering plants:

    - flower structure, identifying carpel (stigma, style, ovary, ovule), stamen (anther, filament), petal, sepal
    - understand the following processes:
        - pollination (the transfer of pollen from an anther to a stigma)
        - fertilisation (the fusing together of the male and female cells which produces a fertilised egg leading to the formation of a seed)
        - fruit formation
        - various methods of seed dispersal
        - germination of seeds (the main parts of a germinating seed: embryo shoot, embryo root, food store and seed coat)

**3. Micro-organisms**
- micro-organisms are living organisms that are often too small to be seen, and that they may be beneficial *[e.g. in the breakdown of waste, in making bread]* or harmful *[e.g. in causing disease, in causing food to go mouldy]*

## (B) M*aterials, their properties and the earth*

**1. Classifying materials**
- recognise differences between solids, liquids and gases, in terms of ease of flow and maintenance of shape and volume. Understand the idea of simple particle theory.

**2. Changing materials**
- understand the part played by evaporation and condensation in the water cycle; carry out simple experiments on evaporation and condensation
- non-reversible changes *[e.g. vinegar reacting with bicarbonate of soda, plaster of Paris with water]* result in the formation of new materials that may be useful. Learn that air and water are both needed for rusting to occur; study simple methods of preventing rusting, e.g. oiling, painting, galvanising, coating with plastic)
- burning materials *[e.g. wood, wax, natural gas]* results in the formation of new materials.This change is not usually reversible. Carry out simple burning experiments to demonstrate that burning is not reversible. Use the terms fuel, fossil fuel and give examples of solid, liquid and gaseous fossil fuels

**3. Separating mixtures**
- study factors affecting the rate of dissolving everyday substances in water, i.e. the temperature of the solvent, particle size of the solute and stirring
- dissolve everyday substances in water: understand the concept of fair testing to compare rates of dissolving in water

- a solution contains at least two substances: water and the dissolved substance
- use knowledge of solids, liquids and gases to decide how mixtures might be separated i.e. take an investigative approach to separating a variety of mixtures

## (C) E*nergy, forces and space*

**1. Electricity**
***Simple circuits***
- construct circuits, incorporating a battery or power supply and a range of switches; make electrical devices work *[e.g. buzzers, motors]. C*onstruct series circuits involving up to three cells, up to three bulbs, a motor, a buzzer and a switch
- electrical devices will only work if they are part of a complete circuit between the terminals of an electrical supply; each part of the circuit must be a conductor of electricity. use the term *in series.*
- changing the number or type of components *[e.g. batteries, bulbs, wires]* in a series circuit can make bulbs brighter or dimmer the relative brightness of bulbs in series circuits
- represent series circuits by drawings and conventional symbols; construct series circuits on the basis of drawings and diagrams using conventional symbols. Recognise the electrical symbols for all the components mentioned above; interpret and draw circuit diagrams where the components are connected in series; recognise a short circuit and be aware of the safety implications.

**2. Earth and atmosphere**

- Earth as a source of limited resources and the efficacy of recycling

- the carbon cycle

- the composition of the atmosphere

- the production of carbon dioxide by human activity and the impact on climate