

Y5

- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
 - Different types of organism have different life cycles
- describe the life process of reproduction in some plants and animals
 - Some organisms reproduce sexually where offspring inherit information from both parents
 - Some organisms reproduce asexually by making a copy of a single parent.
 - Organisms best adapted to reproduce are more likely to do so
 - Competition exists for resources and mates
- describe the changes as humans develop to old age.
 - Life cycles have evolved to help organisms survive to adulthood
- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
 - When two or more substances are mixed and remain present the mixture can be separated.
- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
 - When two or more substances are mixed and remain present the mixture can be separated.
- give reasons, based on evidence from comparative, fair tests, for the particular uses of everyday materials, incl. metals, wood and plastic
- demonstrate that dissolving, mixing and changes of state are reversible changes
 - Some changes can be reversed and some can't
- explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.
 - Heating can sometimes cause materials to change permanently. When this happens, a **new** substance is made. These changes are not reversible.
 - Sometimes mixed substances react to make a new substance. These changes are usually irreversible.
 - All matter (including gases) has mass
- describe the movement of the Earth, and other planets, relative to the Sun in the solar system & describe the movement of the Moon relative to Earth
 - Stars produce vast amounts of heat and light. All other objects are lumps of rock, metal or ice and can be seen because they reflect the light of stars.
 - Smaller mass objects like planets orbit large mass objects like stars
 - Stars, planets and moons have so much mass they attract other things, including each other due to a force called gravity. Gravity works over a distance.
- describe the Sun, Earth and Moon as approximately spherical bodies
- use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.
 - Objects like planets, moons and stars spin
- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
 - Objects with larger masses exert bigger gravitational forces
- identify the effects of air resistance, water resistance and friction, that act between moving surfaces
 - Air resistance and water resistance are forces against motion caused by objects having to move air and water out of the way

- Friction is a force against motion caused by two surfaces rubbing against each other
- recognize that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect
 - Some objects require large forces to make them move; gears, pulley and levers can reduce the force needed to make things move.
 - When current flows through wires heat is released. The greater the current the more heat is released