1 Characteristics and classification of living organisms

KEYWORD	DEFINITION
Movement	an action by an organism or part of an organism causing a change of position or place
Respiration	the chemical reactions in cells that break down nutrient molecules and release energy for metabolism
Sensitivity	the ability to detect and respond to changes in the internal or external environment
Growth	a permanent increase in size and dry mass
Reproduction	the processes that make more of the same kind of organism
Excretion	the removal of the waste products of metabolism and substances in excess of requirements
Nutrition	the taking in of materials for energy, growth and development
Species	a group of organisms that can reproduce to produce fertile offspring
Binomial system	an internationally agreed system in which the scientific name of an organism is made up of two parts showing the genus and species
Dry mass	the mass of the organism after it has been killed and all water removed from it
Genus	a group of species that share similar features and common ancestor

2 Organisation of the organism

KEYWORD	DEFINITION
Cell	the smallest units from which all organisms are made
Tissue	a group of similar cells that work together to perform a particular function
Organ	a group of tissues that work together to perform specific function
Organ system	Several organs that work together to perform a particular function

3 Movement into and out of cells

KEYWORD	DEFINITION
Diffusion	the net movement of particles from a region of their higher concentration to a region of their lower concentration (i.e. down a concentration gradient), as a result of their random movement
Osmosis	the net movement of water molecules from a region of higher water potential (dilute solution) to a region of lower water potential (concentrated solution), through a partially permeable membrane
Active transport	the movement of particles through a cell membrane from a region of lower concentration to a region of higher concentration (i.e. against a concentration gradient), using energy from respiration

4 Biological molecules

KEYWORD	DEFINITION
Reducing sugars	Sugars which turns benedict's solution orange red when heated together
Nucleotide	Molecules that are linked together into long chains to make up a DNA molecule.

5 Enzymes

KEYWORD	DEFINITION
Active site	the part of an enzyme molecule to which the substrate temporarily bind
Catalyst	a substance that increases the rate of a chemical reaction and is not changed by the reaction
Enzymes	proteins that are involved in all metabolic reactions, where they function as biological catalysts

6 Plant nutrition

KEYWORD	DEFINITION
Photosynthesis	the process by which plants synthesize carbohydrates from raw materials using energy from light
Limiting factor	a factor that is in short supply which stops an activity happening at a faster rate

7 Human nutrition

KEYWORD	DEFINITION
Balanced diet	a diet that contains all the required nutrients in suitable proportions and in the right amount of energy
Ingestion	the taking of. food and drink into the body
Digestion	the breakdown of food
Absorption	the movement of nutrients from the intestines into the blood
Assimilation	uptake and use of nutrients by cells
Egestion	the removal of undigested food from the body as faeces
Physical digestion	the breakdown of food into smaller pieces without chemical change to the food molecules
Chemical digestion	the breakdown of large insoluble molecules into small soluble molecules

8 Transport in plants

KEYWORD	DEFINITION
Transpiration	the loss of water vapour from leaves
Translocation	the movement of sucrose and amino acids in phloem from sources to sinks
Source	part of the plant that releases sucrose and amino acids to be transported to other parts
Sink	Part of a plant to which sucrose and amino acids are being transported and where they are used or stored

9 Transport in animals

KEYWORD	DEFINITION
Circulatory system	a system of blood vessels with a pump and valves to ensure one-way flow of blood
Double circulatory system	A system in which blood passes through the heart twice on one complete circuit of the body

10 Diseases and immunity

KEYWORD	DEFINITION
Pathogen	a disease-causing organism
Transmissible disease	a disease in which the pathogen can be passed from one host to another
Active immunity	defence against a pathogen by antibody production in the body
Antibodies	proteins that bind to antigens leading to direct destruction of pathogens or marking of pathogens for destruction by phagocytes

Antigen	A chemical that is recognized by the body as being foreign and stimulates the production of antibodies
Immune respone	the reaction of the body to the presence of an antigen and involves the production of antibodies
Passive immunity	a short-term defence against a pathogen by antibodies acquired from another individual
Cholera	a disease caused by a bacterium which is transmitted in contaminated water

11 Gas exchange in humans

KEYWORD	DEFINITION
Ventilation	The movement of fresh air into the lungs and stale air out of the lungs via inspiration and expiration.
Goblet cells	Specialised cells located in the epithelial lining of the trachea, bronchi and some bronchioles that secrete mucus.

12 Respiration

KEYWORD	DEFINITION
Aerobic respiration	the chemical reactions in cells that use oxygen to break down nutrient molecules to release energy
Anaerobic respiration	the chemical reactions in cells that break down nutrient molecules to release energy without using oxygen

13 Excretion in humans

KEYWORD	DEFINITION
Deamination	the removal of the nitrogen-containing part of amino acids to form urea

14 Coordination and response

KEYWORD	DEFINITION
Reflex action	a means of automatically and rapidly integrating and coordinating stimuli with the responses of effectors (muscles and glands)
Synapse	a junction between two neurons
Sense organs	groups of receptor cells responding to specific stimuli: light, sound, touch, temperature and chemicals
Hormone	a chemical substance, produced by a gland and carried by the blood, which alters the activity of one or more specific target organs
Homeostasis	the maintenance of a constant internal environment

Gravitropism	a response in which parts of a plant grow towards or away from gravity
Phototropism	a response in which parts of a plant grow towards or away from the direction of the light source

15 Drugs

KEYWORD	DEFINITION
Drug	any substance taken into the body that modifies or affects chemical reactions in the body

16 Reproduction

KEYWORD	DEFINITION
Asexual reproduction	a process resulting in the production of genetically identical offspring from one parent
Sexual reproduction	a process involving the fusion of the nuclei of two gametes to form a zygote and the production of offspring that are genetically different from each other
Fertilization	the fusion of the nuclei of gametes
Pollination	the transfer of pollen grains from an anther to a stigma
Self-pollination	the transfer of pollen grains from the anther of a flower to the stigma of the same flower or a different flower on the same plant
Cross-pollination	the transfer of pollen grains from the anther of a flower to the stigma of a flower on a different plant of the same species
sexually transmitted infection (STI)	an infection that is transmitted through sexual contact

17 Inheritance

KEYWORD	DEFINITION
Gene	a length of DNA that codes for a protein
Allele	an alternative form of a gene
Haploid	a nucleus containing a single set of chromosomes
Diploid	a nucleus containing two sets of chromosomes
Mitosis	nuclear division giving rise to genetically identical cells
Stem cells	unspecialised cells that divide by mitosis to produce daughter cells that can become specialised for specific functions
Meiosis	a reduction division in which the chromosome number is halved from diploid to haploid resulting in genetically different cells
Inheritance	Transmission of genetic information from generation to generation
Chromosome	A thread like structure of DNA carrying genetic information in

	the form of gene
Genotype	the genetic make-up of an organism and in terms of the alleles present
Phenotype	the observable features of an organism
Homozygous	having two identical alleles of a particular gene
Heterozygous	having two different alleles of a particular gene
Dominant allele	an allele that is expressed if it is present in the genotype
Recessive allele	an allele that is only expressed when there is no dominant allele of the gene present in the genotype
Codominance	a situation in which both alleles in heterozygous organisms contribute to the phenotype
Sex-linked characteristic	a feature in which the gene responsible is located on a sex chromosome and that this makes the characteristic more common in one sex than in the other

18 Variation and selection

KEYWORD	DEFINITION
Variation	differences between individuals of the same species
Continuous variation	a range of phenotypes between two extremes
Discontinuous variation	a limited number of phenotypes with no intermediates
Gene mutation	a random change in the base sequence of DNA
Adaptive feature	an inherited feature that helps an organism to survive and reproduce in its environment
Fitness	the probability of an organism in surviving and reproducing in the environment it is found
Adaptation	the process, resulting from natural selection, by which populations become more suited to their environment over many generations

19 Organisms and their environment

KEYWORD	DEFINITION
Food chain	showing the transfer of energy from one organism to the next, beginning with a producer
Food web	a network of interconnected food chains and interpret food webs
Producer	an organism that makes its own organic nutrients, usually using energy from sunlight, through photosynthesis
Consumer	organism that gets its energy by feeding on other organisms
Herbivore	an animal that gets its energy by eating plants
Carnivore	an animal that gets its energy by eating other animals
Decomposer	an organism that gets its energy from dead or waste organic material

Trophic level	the position of an organism in a food chain, food web or ecological pyramid
Population	a group of organisms of one species, living in the same area, at the same time
Community	community as all of the populations of different species in an ecosystem

20 Human influences on ecosystems

KEYWORD	DEFINITION
Biodiversity	the number of different species that live in an area
Sustainable resource	one which is produced as rapidly as it is removed from the environment so that it does not run out
Conservation	protecting and preserving natural resources and the environment
Sustainable development	development that meets the needs of the increasing population without harming the environment
Endangered species	a species whose numbers are so small that the species is at risk of extinction

21 Biotechnology and genetic modification

KEYWORD	DEFINITION
Genetic modification	genetic modification