B7 Topic 1 Keywords

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| **Keyword** | **Definition** |
| **Skeleton** | The bones that form the framework for the body. The skeleton supports and protects the internal organs, and provides a system of levers that allow the body to move. Some bones also make red blood cells |
| **Muscle** | Muscles move parts of the skeleton for movement. There is also muscle tissue in other parts of the body, for example, in the walls of arteries |
| **Bone** | Strong, rigid tissues making up the skeleton of vertebrates |
| **Cartilage** | Tough, flexible tissue found at the end of bones and in joints. It protects the ends of bones from rubbing together and becoming damaged |
| **Joint** | A point where two or more bones meet |
| **Ligament** | Tissue that joins two or more bones together |
| **Synovial fluid** | Fluid found in the cavity of a joint. The fluid lubricates and nourishes the joint, and prevent two bones form rubbing against each other |
| **Tendon** | Tissue that joins muscles to a bone |
| **Antagonistic pair** | Two muscles work to move the same bone in opposite directions, for example, the biceps and triceps muscles |
| **Medical history** | Health or health problems in the past |
| **Lifetime history** | The way you have been living, taking regular exercise, eating healthy, and so on |
| **Medication** | Any pharmaceutical drug used to treat or prevent an illness |
| **Blood pressure** | The pressure exerted by blood pushing on the walls of a blood vessel |
| **Recovery period** | The time for you to recover after taking exercise and for your heart rate to return to its resting rate |
| **Body mass Index (BMI)** | Your body mass index is calculate using the formula BMI = body mass (kg)/[height(m)]². Tables will then tell you if your body mass is healthy for your size |
| **Accurate** | A “true” reading. An accurate instrument or procedure give a “true” reading |
| **Calibrated** | Measurements taken from the equipment under test is compared to the measurement of equipment that is known to be of the correct standard. Calibration will improve accuracy |
| **Repeatable** | If your data is repeatable you get similar results with each re-run of an experiment |
| **Sprain** | An injury where ligaments are located |
| **Dislocation** |  |
| **Torn ligament** | An injury of the elastic tissues that hold bone together, a common sports injury of the knee |
| **Torn tendon** | An injury of the inelastic tissues that connect muscles to bones |
| **RICE** | RICE stands for Rest, Ice, Compression, and Elevation. This is the treatment for a sprain |

B7 Topic 2 Keywords

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| **Keyword** | **Definition** |
| **Plasma** | The clear straw-coloured fluid part of blood |
| **White blood cells (WBC)** | Cells in the blood that fight microorganisms. Some white blood cells digest invading microorganisms. Others produce antibodies |
| **Red blood cells (RBC)** | Blood cells containing haemoglobin, which binds to oxygen so that it can be carried around the body in the bloodstream |
| **Platelets** | Cell fragments found in blood. Platelets play a role in the clotting process |
| **Phagocytosis** | Engulfing and digesting of microorganisms and other foreign matter by white blood cells |
| **Haemoglobin** | The protein molecule in red blood cells. Haemoglobin binds to oxygen and carries it around the body. It also gives blood its red colour |
| **Atrium (plural Atria)** | One of the upper chambers of the heart. The two atria pump blood to the ventricles |
| **Ventricle** | One of the lower chambers of the heart. The right ventricle pumps blood to the lungs. The left ventricle pumps blood to the rest of the body |
| **Oxygenated** | Blood in which the haemoglobin is bound to oxygen molecules (oxyhaemoglobin) |
| **Deoxygenated** | Blood in which the haemoglobin is not bound to oxygen molecules  |
| **Double circulation** | A circulatory system where the blood passes through the heart twice for every complete circulation of the body |
| **Aorta** | The main artery that carries oxygenated blood away from the left ventricle of the heart |
| **Vena Cava** | The main vein that returns deoxygenated blood to the right atrium of the heart |
| **Pulmonary artery** | The artery that carries deoxygenated blood to the lungs. The artery leaves the right ventricles of the heart |
| **Pulmonary vein** | The vein that carries oxygenated blood from the lungs to the left atrium of the heart |
| **Heart valves** | Valves prevent backflow of blood into the heart. They keep blood flowing in one direction only |
| **Capillary** | Tiny blood vessels that are one cell thick. They carry blood through the tissues between the arteries and veins |
| **Tissue fluid** | Plasma that is forced out of the blood as it passes through a capillary network. Tissue fluid carries the dissolved chemicals from blood to cells. |
| **Capillary bed** | Large numbers of narrow blood vessels that pass though each organ in the body. Capillaries receive blood from arteries and return it to veins. Capillary walls are only one cell thick. |

B7 Topic 3 Keywords

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| **Keyword** | **Definition** |
| **Respiration** | A series of chemical reactions in cells that release energy for the cell to use |
| **Extremity** | The parts of the body furthest from the core such as the hands and feet. Extremities have a larger surface area compared with their size. This means they lose energy to the environment faster than the main parts of the body |
| **Core** | Central parts of the body where the body temperature is kept constant |
| **Hypothalamus** | The part of the brain that controls many different functions, for example, body temperature |
| **Processing centre** | The part of a control system that receives and processes information for the receptor, and triggers action by the effectors |
| **Shivering** | Very quick muscle contractions. Releases more energy from muscle cells to raise body temperature |
| **Sweat glands** | When you are too hot, nerve impulses from the brain stimulate your sweat glands. Sweat then passes out of small pores onto the skin surface where it will evaporate, cooling you down. |
| **Evaporate** | Where a liquid state is carried off as a vapour. For example, sweat evaporates off the skin |
| **Antagonistic pairs** | Two muscles work to move the same bone in opposite directions, for example, the biceps and triceps muscles |
| **Vasodilation** | Widening of blood vessels |
| **Vasoconstriction** | Narrowing of blood vessels |
| **Pancreas** | An organ in the body that produces some hormones and digestive enzymes. The hormone insulin is made here |
| **Hormone** | A chemical messenger secreted by specialised cells in animals and plants. Hormones bring about changes in cells or tissues in different parts of the animal or plant |
| **Insulin** | A hormone produced by the pancreas. It is a chemical that helps to control the level of sugar (glucose) in the blood |
| **Diabetes Type 1** | An illness where the level of sugar in the blood cannot be controlled. Type 1 diabetes starts suddenly, often when people are young. Cells in the pancreas stop producing insulin. Treatment is by regular insulin injections |
| **Diabetes Type 2** | An illness where the level of sugar in the blood cannot be controlled. Type 2 diabetes develops in people with poor diets or who are obese. The cells in the body stop responding to insulin. Treatment is through careful diet and regular exercise |
| **Obesity** | A medical condition where the increase in body fat poses a serious threat to health. An obese person has a body mass index over 32 kg/m².  |
| **Heart disease** | A range of potentially serious illnesses that affect the heart |
| **Cancer** | A growth or tumour caused by abnormal and uncontrolled cell division |

B7 Topic 4 Keywords

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| **Keyword** | **Definition** |
| **Linear system** | A system based on the take-make-dump model |
| **Sustainable** | Able to continue over long periods of time |
| **Closed-loop system** | A system with no waste – everything is recycled |
| **Microorganisms** | Living organism that can only be seen by looking through a microscope. They include bacteria, viruses and fungi |
| **Ecosystem** | Living organisms plus their non-living environment  |
| **Dead organic matter** | Any material that was once part of a living organism |
| **Digestive enzyme** | Biological catalysts that break down food |
| **Anaerobic** | Without oxygen |
| **Pollen** | Plant reproductive structures containing a male gamete |
| **Pollination** | Involves the transfer of pollen from the anther to the stigma |
| **Flowers** | Reproductive structures in plants often containing both male and female reproductive systems |
| **Fruit** | Remaining parts of a flower containing seeds after fertilisation |
| **Pollinators** | Animals, such as bees, that transfer pollen from anther to stigma |
| **Stable ecosystem** | An ecosystem that renews itself and does not change |
| **Ecosystem services** | Life-support systems that we depend on for our survival |
| **Deforestation** | Cutting down and clearing forests leaving bare ground |
| **Soil erosion** | Soil removal by wind or rain into rivers or the sea |
| **Direct drilling** | Planting seeds directly into the soil without ploughing first |
| **Non-biodegradable** | Waste materials that microorganisms cannot break down |
| **Dioxins** | Poisonous chemicals, for example, released when plastics burn |
| **Heavy metals** | Metals such as lead and mercury, which are toxic in small concentrations |
| **Bioaccumulation** | Build-up of chemicals in organisms as chemicals travel through the food chain |
| **Biodegradable** | Substances that can be broken down by microorganisms such as bacteria and fungi. Most paper and wood items are biodegradable, but most plastics are not |
| **Biomass** | A measure of the amount of living material present |
| **Biodiversity** | The great variety of living things, both within a species and between different species |
| **Desertification** | Turning to desert |
| **Ethical** | A set of principles that may show how to behave in a situation |
| **Primary forests** | A forest that has never been felled or logged |
| **Biofuels** | Fuels made from crops such as rape seed |
| **Silting of rivers** | Eroded soil making the water muddy and settling on the river bed |
| **Eco-labelling** | A way for consumers to know what products are sustainable. For example, an eco-label can be used to show that timber was harvested from a sustainably managed forest |
| **Carbon sink** | A system taking carbon dioxide from the air and storing it, for example, a growing forest |
| **Cloud formation** | Evaporation of water, for example, from a forest, condensing into clouds |
| **Fossil fuel** | Fuel made from the bodies of long-dead organisms |
| **hydrocarbons** | An organic compound consisting entirely of hydrogen and carbon |
| **Fossil sunlight energy** | Sunlight energy stored as chemical energy in fossil fuel |
| **Crude oil** | Oil straight from an oil well, not refined into petrol or diesel |
| **Negative feedback** | A system where any change results in actions that reverse the original change |

B7 Topic 5 Keywords

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| **Keyword** | **Definition** |
| **Enzymes** | A protein that catalyses (speeds up) reactions in living things |
| **Antibiotics** | Drugs that kill or stop the growth of bacteria or fungi |
| **Fermentation** | Chemical reactions in living organisms that release energy from organic chemicals, such as yeast producing alcohol from the sugar in grapes |
| **Fungus (Plural Fungi)** | A group of living things, including some microorganisms, that cannot make their own food |
| **Rennet** | An enzyme used in cheese-making |
| **Chymosin** | Enzyme that breaks down proteins (a protease) found in calf stomachs. Fungi have been genetically modified to produce chymosin industrially for cheese-making |
| **Biofuel** | Fuel made from crop such as rape seed |
| **Single-Celled Protein (SCP)** | A microorganism grown as a source of food protein. Most Single-celled protein is used in animal feed, but one type is used in food for humans  |
| **Plasmid** | Small circle of DNA found in bacteria. Plasmids are not part of a bacterium’s main chromosome |
| **Genetic modification (GM)** | Altering the characteristics of an organism by introducing the genes of another organism into its DNA |
| **Insulin** | A hormone produced by the pancreas. It is a chemical that helps to control the level of sugar (glucose) in the blood |
| **Resistant** | Some genetically modified crops are resistant to herbicides. This means the crop can be sprayed and only the weeds around it will be killed. The crop itself will remain unaffected |
| **Vector** | A method of transfer. Vectors are used to transfer genes from one organism to another |
| **Virus** | Microorganisms that can only live and reproduce inside living cells |
| **Regulations** | Regulations and laws are government led decisions that control the development of new technologies such as GM crops |
| **Probe** | A short length of DNA |
| **Gel electrophoresis** | A method for separating out DNA. Fragments of DNA are placed on a gel with an electrical field across it. Fragments move through the gel at different rates, according to their size. |
| **DNA profiling** | A DNA profile is produced in the same way as a DNA fingerprint, but fewer gene probes are used. DNA profiling is used in forensic science to test samples of DNA left at crime scenes |
| **Gene Probe** | A short piece of single-stranded DNA used in a genetic test. The gene probe has complementary bases for the allele that is being tested for |
| **Nanotechnology** | A technology that makes use of very tiny particles |
| **Nanometre** | A unit of measurement (abbreviation nm). A mm is the same as 1 million nm. 1nm = 1m x 10-9m |
| **Risk** | A measure of the size of a potential danger. It is calculated by combining a measure of a hazard with a chance of it happening |
| **Differentiated** | A differentiated cell has a specialised form suited to its function. It cannot change into another kind of cell |
| **Stem cells** | Unspecialised animal cell that can divide and develop into specialised cells |
| **Tissue** | Group of specialised cells of the same type working together to do a particular job |
| **Leukaemia** | A blood disorder which can be treated with bone marrow transplants. Leukaemia is a kind of cancer where the body makes too many white blood cells |
| **Tissue culture** | The growth of tissues or cells separate from the organism. Skin tissue culture can be grown in a lab. The thin layer of skin cells produced  |
| **Organ** | Part of a plant or animal made up of different tissues |
| **Biomedical engineering** | Using design and engineering principles to help medicine. For example, artificial valves can be engineered and used to replace heart valves. A disadvantage of valves made by biomedical engineering is that they cause damage to blood cells and make regular clicking noises as the valve closes |
| **Heart valves** | Valves prevent backflow of blood into the heart. They keep blood flowing in one direction only |
| **Pacemaker** | The area of the heart that controls muscle contractions, using electrical signals. |
| **Rejection** | When the immune system sees new tissue which the body has received from a transplant as foreign. The immune system rejects the new tissue and attacks it as if it were an invading bacteria or virus. |