National 5 Biology: Multicellular Organisms: Summary

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| **Cells, tissues & organs** |  |  |  |  |
|  | * I can identify some of the specialised cells found in the body of a multicellular animal
 |  |  | [Type a quote from the document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Drawing Tools tab to change the formatting of the pull quote text box.] |
|  | * I can explain how the structure of these cells relate to their function.
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|  | * I understand that this specialisation allows each type of cell to carry out its function more efficiently.
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| **Stem Cells** | * I can explain what a stem cell is
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|  | * I can identify some of the sites in an animal’s body where stem cells are made
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|  | * I understand that stem cells are involved in growth and repair of body tissues and organs.
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|  | * I can identify some of the different types of cell that stem cells can become.
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|  | * I can name some of the diseases which could be cured by the use of stem cells.
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|  | * I can discuss some of the ethical issues associated with the use of stem cells in medical research.
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| **Meristems** | * I can explain what a meristem is.
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|  | * I can identify sites in the plant’s body where meristems are found.
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|  | * I know that non-specialised cells produced in the meristem can become specialised into any type of plant cell.
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|  | * I understand that cells produced in the meristem contribute to the growth of the plant.
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| **The Brain** | * I can identify the cerebrum, cerebellum and the medulla and state their function.
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| **The Nervous System** | * I can state that the nervous system is composed of the brain, spinal cord and nerves
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| **The flow of information in the NS** | * I can state that nerves carry information from the senses to the CNS and from the CNS to the brain.
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|  | * I can state that the CNS sorts out information from the senses and sends messages to those muscles which make the appropriate response
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| **Reflex Actions** | * I can describe how a reflex action works, using a simple model of a reflex arc.
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| **Controlling blood sugar** | * I can name two hormones that are involved in controlling blood sugar levels
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|  | * I know which hormone works when there is too much sugar and too little sugar
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| **The need for transport** | * I understand that multi-cellular organisms need transport systems to carry substances to all parts of their bodies because their surface area to volume is low.
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| **Plant transport systems** | * I am able to able to describe the movement of water through a plant.
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|  | * I understand that transpiration is the evaporation of water from the leaves and this causes the upward movement of water in a plant.
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| **Sugar transport in plants** | * I am able to recognise and describe the main features of phloem and xylem vessels
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| **Experiments in plant water transport** | * I am able to carry out simple procedures to view the parts of a plant that are involved in water transport.
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| **Experiment: transpiration rate.** | * I can carry out an experiment to measure transpiration rate.
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| **Animal Transport** | * I am able to state that oxygen, nutrients and waste products are transported to and from cells of the body in the blood.
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| **Red Blood Cells (RBCs)** | * I am able to describe how RBCs are able to deliver oxygen from the lungs to body cells
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| **The lungs** | * I can describe the structure and function of the lungs and the role of the alveoli
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| **The Digestive system** | * I can list the structure and function of the digestive system.
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|  | * I understand the role of peristalsis
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|  | * I know that food enters the blood at the small intestine through villi and how they are suited to their function.
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| **Reproduction** | * I can identify the number of chromosomes in a cell, gametes and fertilised ova.
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|  | * I can identify gonads in animals and plants
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| **Gamete production in** **mammals** | * I can identify gonads in animals
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|  | * I can compare male and female gametes
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| **Gametes production in plants** | * I can identify the areas that produce pollen and ovules in flowers (the gonads)
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| **Variation** | * I can identify features of discrete and continuous variation and give examples of both.
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| **Phenotypes/Genotypes** | * I can follow the pattern of inheritance using family trees
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| **Dominant/Recessive** | * I can identify dominant forma of a gene
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|  | * I can identify homozygous and heterozygous genotypes.
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| **Genetic crosses** | * I can follow the inheritance of a characteristic through two generations and use a punnet square to predict the outcome of a cross.
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| **Polygenic inheritance** | * I know what polygenic inheritance is and I am able to give examples of characteristics controlled in this way.
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| **Human inheritance****identification** | * I can identify individuals and give their possible genotypes using family trees
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| **Genetic counselling** | * I can identify medical traits that may receive medical counselling
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| **Genetic ethics** | * I have considered the ethics and dilemmas with designer babies.
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| **Effects of lifestyle choices on transport and exchange systems** | * I know the difference between physical and mental health
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|  | * I can identify some healthier lifestyle choices that will improve the physical and mental health of an individual
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|  | * I can take physiological measurements such as blood pressure, pulse rate and reaction time and describe the effect of moderate exercise on these measurements.
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|  | * I can debate whether all illness should be treated free under the NHS in the UK
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