







## 2.1 & 2.2 Cells, Tissues and Organs

At the end of this sequence of lessons I can:

			
1. State the difference between unicellular and multi cellular organisms.			
2. State that cells are specialised to perform particular jobs			
3. Give examples of specialised animal and plant cells			
4. State that similar cells group together to form tissues			
5. State that groups of tissues work together to form organs			
6. State that organs group together to form an organism.			
7. State that stem cells are the sites of production of specialised cells in animals.			
8. State that stem cells are involved in growth and repair.			
9. Discuss the potential uses and ethical issues associated with stem cell research.			
10. State that the meristems are the site of production of non specialised plant cells			
11. State that there are both apical and lateral meristems			




## 2.3 (a) Control and Communication

At the end of this sequence of lessons I can:

			
1. Understand that the nervous system is composed of the brain, spinal cord and nerves.			
2. State that sensory nerves carry impulses from receptors to the CNS			
3. State that relay neurones connect sensory neurones to motor neurones			
4. State that motor neurones carry messages from the CNS to the effectors (muscles/glands)			
5. State that synapses are tiny gaps between neurones.			
6. State that a reflex action is a rapid, automatic response to protect the body from harm.			
7. Explain what is meant by a reflex arc.			
8. State the functions of the medulla, cerebrum and cerebellum.			




### 2.3 (b) Control and Communication

At the end of this sequence of lessons I can:

			
2. State that hormones are chemical messengers.			
3. State that hormones are released from the endocrine glands.			
9. State that hormones are released into the bloodstream			
4. State that hormones act on target tissues.			
5. State that these target tissues have cells with receptors for hormones.			
6. State that only some tissues are affected by specific hormones.			
7. State that insulin is a hormone made by the pancreas that converts excess glucose into glycogen.			
8. State that glycogen is stored in the liver.			
9. State that glucagon is a second hormone released by the pancreas that converts glycogen to glucose.			
10. Describe the causes and treatment of Type 1 and Type 2 Diabetes			




## 2.4 Reproduction

At the end of this sequence of lessons I can:

			
1. State that sex cells are called gametes.			
2. State that gametes are haploid (n)			
3. State that in plants the male gamete is called pollen and is produced at the anther.			
4. State that in plants the female gamete is called the ovule and is produced in the ovary.			
5. State that pollination is the transfer of pollen from one flower to the stigma of another.			
6. State that fertilisation is the fusion of the nucleus of the male and female gametes.			
7. State that seeds are the product of sexual reproduction in plants.			
8. State that seeds are diploid (2n).			
9. State that in animals the male gametes are called sperm and are produced in the testes.			
10. State that in animals the female gamete is called the egg and is produced in the ovary.			
11. State that during fertilisation the nucleus of the male gamete fuses with the nucleus of the female gamete.			
12. State that a fertilised egg is called a zygote and is diploid (2n).			

## 2.5 Variation and Inheritance

At the end of this sequence of lessons I can:

			
1. State that variation occurs between members of the same species.			
2. State that in continuous variation there is a complete range of measurements from one extreme to the other e.g. height.			
3. State that discrete variation can be grouped e.g. blood group.			
4. State that certain characteristics are determined by genetic information received from our parents.			
5. State that our genetic information is found in our genes			
6. State that different forms of the same gene are called alleles			
7. State that polygenic inheritance is due to the interaction of the alleles of several genes which results in a range of phenotypes being produced.			
8. State the meaning of the term genotype			
9. State the meaning of the term phenotype.			
10. State the meaning of the terms homozygous and heterozygous.			
11. Identify examples of true breeding, dominant and recessive characteristics from given crosses.			
12. Identify generations as P, F1, F2 from given crosses.			

13. State that carrier individuals of medical traits can receive genetic counselling.			
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## **2.6 (a) Plant Transport Systems**

At the end of this sequence of lessons I can:

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1. Describe the structure of phloem cells.			
2. State that phloem cells transport sugars from the leaves to other parts of the plant.			
3. State that water is needed for transporting materials and for photosynthesis			
4. State that xylem cells transport water and minerals from the roots up through the stem.			
5. Describe the structure of phloem cells.			
6. State that the transpiration stream is the continuous movement of water from root to leaves.			
7. Explain how water moves from root to leaves.			
8. State that water is lost from stomata.			
9. State that guard cells control the opening and closing of stomata and explain how they do this.			
10. State that temperature, wind speed and humidity all affect the rate of transpiration.			
11. State that the transpiration stream has a cooling effect on plants.			

## 2.6 (b) Animal Transport & Gas Exchange




At the end of this sequence of lessons I can:

			
1. State that blood leaves the heart in arteries, flow through capillaries and returns to the heart in veins.			
2. Describe the structures of arteries, capillaries and veins.			
3. State that valves prevent the backflow of blood.			
4. Describe the features of a capillary network which allow efficient gas exchange.			
5. Describe the pathway of blood through the heart, lungs and body.			
6. Identify the four chambers of the heart.			
7. Describe the path of blood flow through the heart and its associated blood vessels.			
8. Describe the function of red blood cells and plasma in the transport of respiratory gases and food.			
9. Explain the function of haemoglobin in the transport of oxygen.			
10. Describe the internal structure of the lungs.			

11. Describe gas exchange between the alveoli and the surrounding vessels.			
12. Describe the features which make lungs efficient gas exchange structures.			
13. Explain the function of cartilage, cilia and mucus in the trachea and bronchi.			
14. Explain the mechanism of peristalsis.			
15. Explain how the structure if the small intestine is related to its function.			
16. Explain how the structures of a villus, including the lacteal and the blood capillaries, are related to the absorption and transport of food.			

## **2.7 Effects of Lifestyle**

**At the end of this sequence of lessons I can:**

			
1. State that an individual has physical, mental and emotional aspects of health.			
2. State that healthier lifestyle choices can improve an individual's health.			
3. Identify examples of healthy lifestyle choices.			



4. State that poor lifestyle choices can have a negative effect on health.			
5. Give examples of poor lifestyle choices.			
6. State that poor lifestyle choices can increase the chances of health problems and give examples of such problems.			
7. State that heredity plays a part in the incidence of some conditions			
8. State that a lack of iron means haemoglobin cannot be made and can lead to anaemia.			
9. State that environmental factors can damage health and give examples.			
10. State that physiological measurements can be used to measure health.			
11. Carry out physiological measurements.			