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| B4.1 The blood | I am targeting - |
| To get the grade I must -  |  |
| TargetingGRADE 4 | * State the main components in blood, namely: plasma, red blood cells, white blood cells and platelets.
* Recognise the components of blood from photomicrographs.
* Describe the function of each component in blood.
 |
| TargetingGRADE 6 | * Summarise the process of blood clotting.
* View blood under a light microscope and recognise components.
* Explain how red blood cells are adapted to their function.
 | To get the next grade I must - |
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| TargetingGRADE 8 | * Suggest how white blood cells are adapted to their function.
* Estimate the diameter of a red blood cell and comment on its uncertainty.
* Evaluate in detail a model of the blood.
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* Evaluate in detail a model of the blood.
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| B4.2 The blood vessels | I am targeting - |
| To get the grade I must -  |  |
| TargetingGRADE 4 | * State the three main types of blood vessel – arteries, veins, and capillaries.
* Recognise types of blood vessel from diagrams.
 |
| TargetingGRADE 6 | * Describe how blood flows around the body.
* Explain how the structure relates to the functions of blood vessels.
 | To get the next grade I must - |
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| TargetingGRADE 8 | * Explain in detail the importance of a double circulatory system.
* Explain how to make estimates of heart rate more accurate in terms of precision of data
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* Explain how to make estimates of heart rate more accurate in terms of precision of data
 |
| B4.3 The heart | I am targeting - |
| To get the grade I must -  |  |
| TargetingGRADE 4 | * State the function of the heart.
* Label a diagram of the heart to show some of the main structures.
* State examples of heart problems.
 |
| TargetingGRADE 6 | * Label a diagram of the heart to show all the main structures.
* Describe heart problems and their treatments.
* Summarise the advantages and disadvantages of replacing faulty valves with mechanical or biological ones.
 | To get the next grade I must - |
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| TargetingGRADE 8 | * Explain the structure of the heart in detail, and how it relates to its function.
* Recognise the main structures of the heart when carrying out a heart dissection.
* Evaluate treatments, including the use of stents and replacement heart valves.
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| B4.4 Breathing and gas exchange | I am targeting - |
| To get the grade I must -  |  |
| TargetingGRADE 4 | * Label a diagram of the gas exchange system to show some of the main structures.
* State that gas exchange happens in the alveoli.
* Use data in the form of percentages to describe the differences in the composition of inhaled and exhaled air.
 |
| TargetingGRADE 6 | * Label a diagram of the gas exchange system to show all the main structures.
* Describe how alveoli are adapted.
* Describe the processes of ventilation and gas exchange.
 | To get the next grade I must - |
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| TargetingGRADE 8 | * Evaluate in detail a model of the lungs.
* Explain in detail how adaptations of alveoli result in efficient gas exchange.
* Explain the differences between the composition of inhaled and exhaled air.
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| B4.5 Helping the heart | I am targeting - |
| To get the grade I must -  |  |
| TargetingGRADE 4 | * State that heartbeat is maintained by a group of cells that act as a pacemaker.
* Describe why a person may need an artificial pacemaker or an artificial heart.
 |
| TargetingGRADE 6 | * Explain why an irregular heartbeat is detrimental to health.
* Describe why people may have objections to heart transplants.
 | To get the next grade I must - |
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| TargetingGRADE 8 | * Explain how a natural pacemaker maintains the heartbeat.
* Suggest how to regulate an irregular heartbeat.
* Evaluate in detail the use of artificial and donor hearts.
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| B4.6 Tissues and organs in plants | I am targeting - |
| To get the grade I must -  |  |
| TargetingGRADE 4 | * Recognise examples of plant organs and state their functions.
* Use a light microscope to view a cross-section of a leaf.
* State the functions of different plant tissues.
 |
| TargetingGRADE 6 | * Describe how plant organs are involved in the transport system.
* Label a diagram of a cross-section of a leaf to show the different tissues it contains.
* Explain how the structures of tissues in the leaf are related to their functions.
 | To get the next grade I must - |
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| TargetingGRADE 8 | * Suggest what type of plant organs unfamiliar structures are.
* Suggest functions for unknown plant tissues.
* Use a light microscope to draw labelled images of a leaf cross-section.
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| B4.6 Tissues and organs in plants | I am targeting - |
| To get the grade I must -  |  |
| TargetingGRADE 4 | * Recognise examples of plant organs and state their functions.
* Use a light microscope to view a cross-section of a leaf.
* State the functions of different plant tissues.
 |
| TargetingGRADE 6 | * Describe how plant organs are involved in the transport system.
* Label a diagram of a cross-section of a leaf to show the different tissues it contains.
* Explain how the structures of tissues in the leaf are related to their functions.
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* Suggest functions for unknown plant tissues.
* Use a light microscope to draw labelled images of a leaf cross-section.
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| B4.7 Transport systems in plants | I am targeting - |
| To get the grade I must -  |  |
| TargetingGRADE 4 | * State the function of xylem and phloem tissue.
* Collect evidence for movement of water through xylem.
 |
| TargetingGRADE 6 | * Describe why transport in plants is important.
* Explain how the structure of xylem and phloem are adapted to their functions.
 | To get the next grade I must - |
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| TargetingGRADE 8 | * Apply knowledge of the plant transport system to explain how systemic pesticides work and evaluate their use.
* Explain in detail how the rate of transport through a plant can be measured.
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| B4.8 Evaporation and transpiration | I am targeting - |
| To get the grade I must -  |  |
| TargetingGRADE 4 | * State that transpiration is the evaporation of water vapour from the leaves.
* State the function of stomata.
* Calculate the mean number of stomata on a given area of leaf.
 |
| TargetingGRADE 6 | * Describe how transpiration maintains the movement of water from roots to leaves.
* Describe how the opening and closing of stomata is controlled by guard cells.
* Use sampling to estimate the number of stomata on a leaf.
 | To get the next grade I must - |
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| TargetingGRADE 8 | * Evaluate drinking from a straw as a model of transpiration.
* Explain in detail how stomata control transpiration.
* Suggest reasons for differences in the number and distribution of stomata, as well as their adaptations.
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| B4.9 Factors affecting transpiration | I am targeting - |
| To get the grade I must -  |  |
| TargetingGRADE 4 | * Recognise the factors that affect transpiration.
* Describe how a potometer can be used to estimate the volume of water lost by a plant.
* Identify variables when investigating rate of transpiration.
 |
| TargetingGRADE 6 | * Explain why temperature, humidity, light intensity and the amount of air flow affect the rate of transpiration.
* Describe the differences between a moving bubble potometer and a mass potometer
* Make a prediction using scientific knowledge when investigating rate of transpiration.
 | To get the next grade I must - |
|  |
| TargetingGRADE 8 | * Summarise adaptations to control water loss and explain how they work.
* Evaluate in detail the use of a potometer to measure the rate of transpiration.
* Apply the particle model to explain in detail why temperature, humidity, light intensity, and the amount of air flow affect the rate of transpiration.
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