** A level Year 1** Eduqas Component 3

**Adaptations for Gas Exchange**

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|  |  | R | A | G |
| 1 | the adaptations for gas exchange which allow an increase in body size and metabolic rate |  |  |  |
| 2 | gas exchange in small animals across their general body surface |  |  |  |
| 3 | the comparison of gas exchange mechanisms in Amoeba, flatworm and earthworm |  |  |  |
| 4 | the common features of the specialised respiratory surfaces of larger animals and the adaptation of respiratory surfaces to environmental conditions - fish have gills for aquatic environments and mammals have lungs for terrestrial environments |  |  |  |
| 5 | the need for large active animals with high metabolic rates to have ventilating mechanisms to maintain gradients across respiratory surfaces |  |  |  |
| 6 | ventilation in bony fish and comparison of counter current flow with parallel flow |  |  |  |
| 7 | ventilation in humans and how gases are exchanged |  |  |  |
| 8 | the adaptations of the insect tracheal system to life in a terrestrial environment |  |  |  |
| 9 | the structure of the angiosperm leaf |  |  |  |
| 10 | the role of leaf structures in allowing the plant to photosynthesise effectively |  |  |  |
| 11 | the role of the leaf as an organ of gas exchange, including stomatal opening and closing |  |  |  |

**SPECIFIED PRACTICAL WORK**

* Investigation into stomatal numbers in leaves
* Dissection of fish head to show the gas exchange system
* Scientific drawing of a low power plan of a prepared slide of T.S. dicotyledon leaf e.g. *Ligustrum* (privet), including calculation of actual size and magnification of drawing