** A level Year 2** Eduqas Component 1

**Photosynthesis**

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|  |  | R | A | G |
| 1 | the distribution of chloroplasts in relation to light trapping |  |  |  |
| 2 | chloroplasts acting as transducers converting the energy of light photons into the chemical energy of ATP |  |  |  |
| 3 | the process of light harvesting and the absorption of various wavelengths of light by chlorophyll and associated pigments and the energy transfer to reaction centres |  |  |  |
| 4 | the basic features of Photosystems I and II |  |  |  |
| 5 | cyclic and non-cyclic photophosphorylation as sources of electrons for the electron transport chain |  |  |  |
| 6 | photolysis as a source of electrons for Photosystem II |  |  |  |
| 7 | the reduction of NADP by the addition of electrons and hydrogen ions in the stroma maintaining the proton gradient |  |  |  |
| 8 | reduced NADP as a source of reducing power and ATP as a source of energy |  |  |  |
| 9 | for the following reactions: the light-independent stage and the formation of glucose; uptake of carbon dioxide by ribulose bisphosphate to form glycerate-3-phosphate catalysed by Rubisco |  |  |  |
| 10 | the reduction of glycerate-3-phosphate to produce triose phosphate  (carbohydrate) with the regeneration of ribulose bisphosphate |  |  |  |
| 11 | the production of other carbohydrates, lipids and amino acids from the triose phosphate (no details of the chemistry of these processes is needed) |  |  |  |
| 12 | the concept of limiting factors in relation to photosynthesis |  |  |  |
| 13 | the role of inorganic nutrients in plant metabolism as illustrated by the use of nitrogen and magnesium |  |  |  |

**SPECIFIED PRACTICAL WORK**

Investigation into the separation of chloroplast pigments by chromatography

Investigation into factors affecting the rate of photosynthesis

Investigation into the role of nitrogen and magnesium in plant growth