**Photosynthesis Questions**

**Energy Producers**

* Define the term autotroph.   
  An autotroph is an organism that are capable of producing their own energy and include photosynthetic and chemosynthetic autotrophs.
* Compare photosynthetic autotrophs and chemosynthetic autotrophs.   
  While photosynthetic autotrophs (e.g. plants, algae, some bacteria) convert light energy into chemical energy, chemosynthetic autotrophs derive their energy from inorganic sources such as sulphur or ammonia. Some bacteria are chemoautotrophs.
* Explain why photosynthesis is sometimes referred to as reverse respiration.  
  Photosynthesis is sometimes referred to as reverse respiration because the photosynthesis reaction requires carbon dioxide (CO2) and produces oxygen as one of its products. This is the converse of regular respiration, which requires oxygen and results in CO2 as a product.

**Photosynthesis**

* Write the chemical reaction for photosynthesis.

**Factors that Affect Photosynthesis**

* List the factors that affect photosynthetic rate.  
  The rate at which plants can make food (the photosynthetic rate) is dependent on environmental factors such as the amount of light available, the level of carbon dioxide (CO2), and the temperature.

**Light Dependent Reaction**

* Describe what a photon is and outline its role in photosynthesis.  
  Photons are the particles that make up the light energy that is absorbed by chlorophyll molecules and excites electrons. They are trapped by electron acceptor molecules (NAPD+) that are poised at the start of a neighbouring transport system. The electrons “fall” to a lower energy state, releasing energy that is harnessed to make ATP.
* Name the two main products of light dependent reactions.  
  The light-dependent reaction produces energy from solar power (photons) in the form of ATP and NADPH, which are then used in the light-independent reaction.

**Light Independent Reaction**

* Outline the role of rubisco in light independent reactions  
  Enzyme RUBSICO (ribulose biphosphate carboxylase / oxygenase) is the main enzyme that catalyses the first reactions of the Calvin Cycle.
* Name the main product of light independent reactions  
  CH2O + H2O