**ATP**

USES OF ENERGY WITHIN THE CELL

1........................................................................................................................

..........................................................................................................................

2........................................................................................................................

..........................................................................................................................

3........................................................................................................................

..........................................................................................................................

4........................................................................................................................

..........................................................................................................................

5........................................................................................................................

..........................................................................................................................

Remember – energy cannot be created or destroyed – it can only be altered from one form to another.

ATP – IMMEDIATE SOURCE OF ENERGY

Drawing of a molecule of ATP

|  |
| --- |
|  |

ATP (Adenosine Tri Phosphate) is made from ADP (………………………………………………) and Pi (inorganic phosphate) during respiration and photosynthesis.

This is an example of a phosphorylation reaction. To make one ATP molecule from ADP and phosphate 30.6 kJ are required. This can be shown as:-

|  |
| --- |
|  |

When the cell requires energy the reverse reaction takes place and therefore energy is released.

|  |
| --- |
|  |

This is a hydrolysis reaction and is catalysed by the enzyme ……………………….

ATP can travel through the cell from places where energy is being released to places where energy is required and it can be reformed and reused again and again. It is therefore a short term store of energy within the cell as well as a means of transporting energy.

SYNTHESIS OF ATP

1. What type of reaction is this? ………………………………….
2. What is the name of the enzyme that catalyses this reaction? ……………………………………….
3. What are the three ways in which this happens in living things?

……………………………………………………………..

……………………………………………………………..

……………………………………………………………..

|  |
| --- |
| Further reading and questions  See chapter 2.3 in your textbook including summary questions. |