- Only a few seconds supply is maintained, not a problem as ATP is rapidly reformed from ADP and inorganic phosphate
- HERE'S WHY IT'S BETTER THAN GLUCOSE AS AN IMMEDIATE SOURCE OF ENERGY
    - Each ATP molecule releases **less energy than each glucose molecule- energy is released in smaller, more manageable quantities, less wasted as heat**
    - Glucose takes a long series of reactions to break down fully, **hydrolysis of ATP is a single reaction, releases energy immediately**
- ATP can't be stored, must be continuously made, hello mitochondria, lots in muscle fibres and small intestine epithelium cells

ATP IS USED FOR…

- Metabolic processes, building macromolecules, breaking them down
- Movement, provides E for filaments of muscles to slide past each other, muscle contraction
- Active transport, E for protein carriers to **change shape**
- Secretion, E for **formation of lysosomes**
- Activation of molecules, **inorganic phosphate can be used to phosphorylate other compounds and make them more reactive**
    - Eg in glycolysis

WATER IS COOL AS

- Major component of cells
- Dipolar, forms hydrogen bonds, leads to a number of WEIRD PROPERTIES
- **Water is a MAJOR RAW MATERIAL IN PHOTOSYNTHESIS**
- **Water is used to break down complex molecules VIA HYDROLYSIS**
- **Water is a solvent, and provides an aqueous medium in which reactions can take place**
    - Readily dissolves gases
    - Dissolves inorganic ions, small hydrophilic molecules such as amino acids, monosaccharides, ATP
    - Enzymes
    - Allows molecules to meet and so react,
- **Water has a high specific heat capacity**
    - Because of H bonds, water molecules have a lot of cohesion, takes a lot of energy to break the molecules apart and heat water
    - Means water makes a **great buffer** against sudden temperature change
- **Water has a high latent heat of vaporisation**
    - Because of aforementioned cohesion, takes a lot of heat to evaporate water… means that **sweating** is a **rly effective way of losing heat** for mammals
- **Water has cohesion**
    - Means water can be **pulled up xylem**