12 Energy and ATP – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	**Write it 3 times** (English)		
energy			
respiration			
active transport			

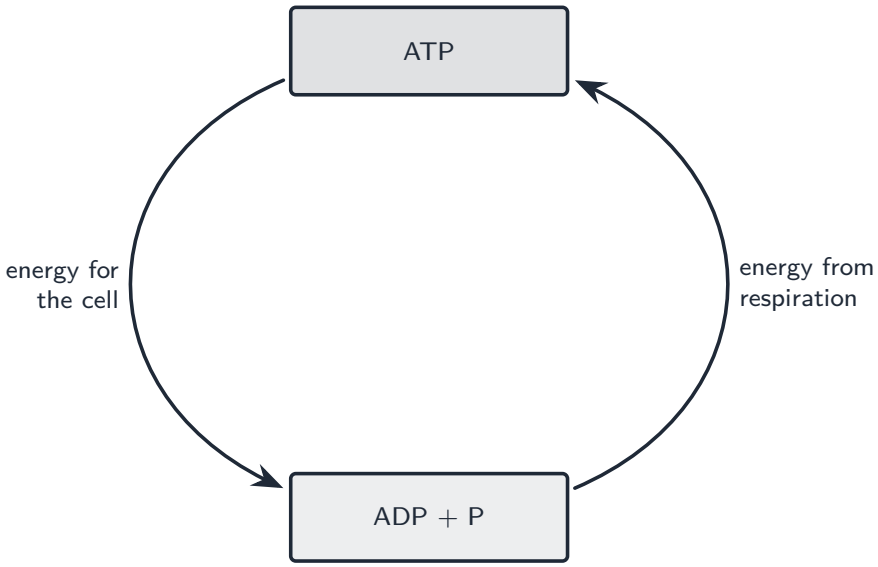
Recall

Every cell needs a steady supply of **energy** . It gets this energy from **respiration** – the breaking down of food molecules.

New ideas

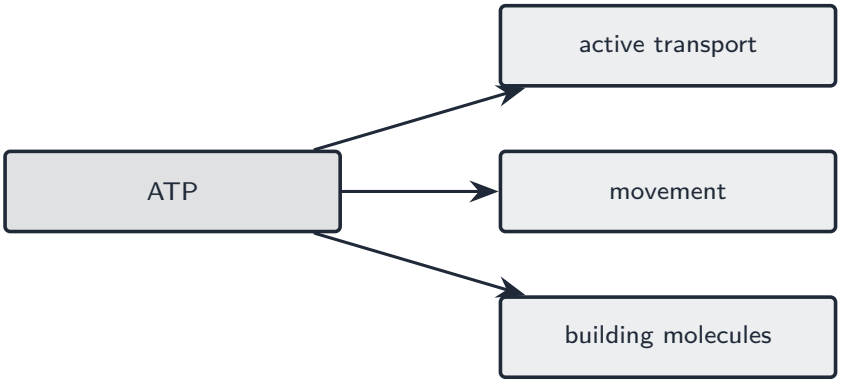
Read these first, then do the Practice.

1 ATP, the energy currency



ATP is the molecule that carries energy. Respiration adds a phosphate to ADP to make ATP; when the cell needs energy, it breaks ATP back to ADP + phosphate, releasing a small, usable burst.

2 What the energy is for



Cells spend ATP on **active transport** (moving substances against a gradient), movement (like muscle contraction), and building large molecules.

Watch out: ATP is the energy *currency* – it carries energy in small, usable bursts and is constantly recycled (made from ADP + phosphate, then broken back). It is *not* a long-term energy store.

Practice

Try these in order.

12.1 Where do cells get their energy? [1]

12.2 Which molecule carries energy around the cell? [1]

12.3 What is ATP made from when energy is added? [1]

12.4 Give one job that needs ATP. [1]

12.5 What is *active transport*? [1]

12.6 Challenge. A muscle cell uses ATP very fast during exercise, yet it stores only a tiny amount. Explain how the cell keeps supplying enough ATP. [2]