Respiration & ATP — Catch-Up

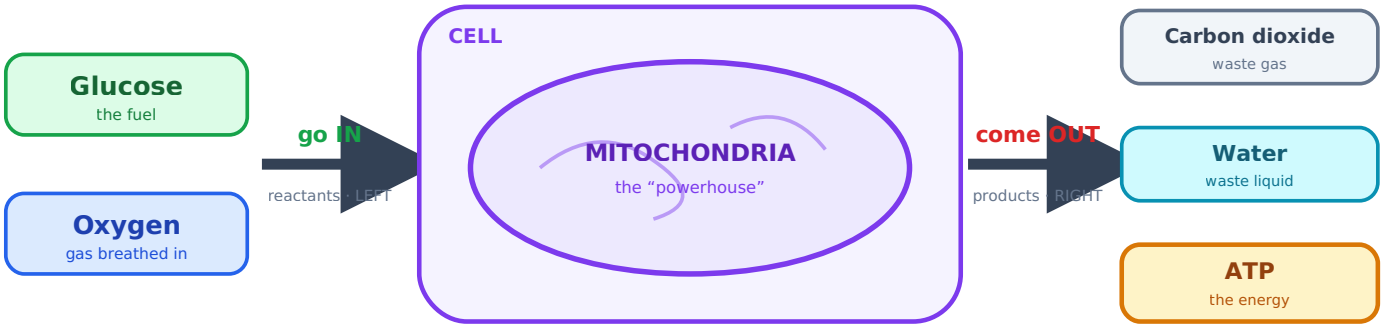
MIDDLE · 2–3

Lesson 4: Aerobic Respiration · IGCSE Science (4SS0) · **Missed the last lesson? Start here, then keep this beside you.**

Name: _____ **Class:** _____ **Date:** _____

How to use this: read the diagram and the four facts, then fill the warm-up. When you can say it, you are ready for the We Do and your worksheet.

What happens inside a cell — everyone



1. **Respiration** releases energy from **glucose** to make **ATP**, inside your **cells** (it is *not* breathing).
2. **ATP** is the cell's **energy molecule**. It is made in the **mitochondria**.
3. **Aerobic** respiration needs **oxygen**, which lets glucose break down completely → **lots** of ATP.
4. **Reactants** go IN (on the **LEFT**). **Products** come OUT (on the **RIGHT**).

Warm-up: fill the gaps — everyone

Word bank: cells · energy · glucose · oxygen · ATP

a) Respiration happens in your _____ and releases _____.

b) The fuel is _____ and the gas it needs is _____.

c) The energy is carried by _____.

Push yourself — Higher 3–5

Why does aerobic respiration release **lots** of ATP? *Start:* "Because oxygen lets glucose _____ (break down completely)."

_____

Help Desk — keep this beside you

Use this while you build the equations (We Do) and do your worksheet.

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The two equations

Glucose + Oxygen → Carbon Dioxide + Water (+ ATP)

WORD EQUATION

$$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$$

SYMBOL EQUATION

The big 6s mean six molecules — always copy them in front of O_2, CO_2 and H_2O.

Reactants & products

Reactants	**LEFT** — they go **IN** (glucose + oxygen).
Products	**RIGHT** — they come **OUT** (carbon dioxide + water).

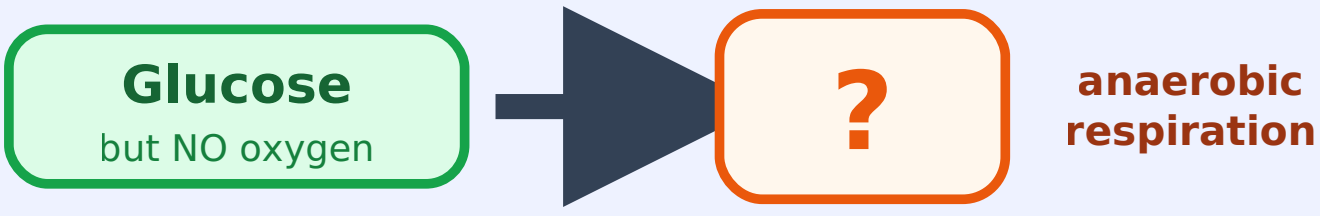
Finish the sentences:

- The reactants are _____ and _____.
- The products are _____ and _____.
- The big 6s mean _____.

Match — write the letter in the box

Respiration	[ ]	**A** go in (left of arrow)
ATP	[ ]	**B** where it happens
Mitochondria	[ ]	**C** releases energy in cells
Reactants	[ ]	**D** come out (right of arrow)
Products	[ ]	**E** the energy molecule

Coming next lesson look ahead



Next lesson: **anaerobic respiration** — what happens to glucose with **no oxygen**? Find out next time!