These are the errors that appear year after year in examiner reports. Knowing *what not to write* is just as important as knowing what to write. ★ marks Higher Tier only. Every mistake here has cost students marks in real exams.

Photosynthesis

■ **Students often write:**	*"Photosynthesis produces carbon dioxide and uses glucose."*
✓ **Correct answer:**	Photosynthesis is the reverse: it USES carbon dioxide and water, and PRODUCES glucose and oxygen. Respiration uses glucose and oxygen and produces carbon dioxide and water. Students frequently mix these up.
■ **Examiner insight:**	Write both equations side by side: Photosynthesis: CO■ + H■O → glucose + O■. Respiration: glucose + O■ → CO■ + H■O. Notice they use the products of each other. They are approximately (but not exactly) reverse reactions.

■ **Students often write:**	*"Light intensity is the only limiting factor of photosynthesis."*
✓ **Correct answer:**	There are THREE main limiting factors: light intensity, CO■ concentration, and temperature. At any moment, only ONE is limiting — the one in shortest supply. Even with maximum light, if CO■ is low, the rate will plateau.
■ **Examiner insight:**	If a graph shows rate plateauing despite increasing light: ANOTHER FACTOR is now limiting. State which (CO■ or temperature). This exact question appears in almost every exam series.

■ **Students often write:**	*"Increasing temperature always increases the rate of photosynthesis."*
✓ **Correct answer:**	Temperature increases rate UNTIL the optimum (~25°C for most plants). Above the optimum, photosynthesis enzymes (e.g. RuBisCO) begin to denature — the rate then decreases sharply and eventually stops.
■ **Examiner insight:**	Temperature has two effects: below optimum = faster (more kinetic energy); above optimum = slower then zero (denaturation). Both effects must be mentioned in extended answers.

Respiration

■ **Students often write:**	*"Respiration is the same as breathing."*
✓ **Correct answer:**	Breathing (ventilation) is the physical process of moving air in and out of lungs. Respiration is a chemical process in cells that releases energy (ATP) from glucose. They are completely different processes.
■ **Examiner insight:**	Every living cell respires — including plant cells, bacteria and yeast. Breathing is unique to organisms with lungs. A yeast cell respires but does not breathe. The two are not synonymous.

■ **Students often write:**	*"During exercise, lactic acid gives you energy."*

✓ **Correct answer:**	Lactic acid is a WASTE PRODUCT of anaerobic respiration, not an energy source. During intense exercise, anaerobic respiration releases a small amount of energy AND produces lactic acid as a byproduct. Lactic acid causes muscle fatigue.
■ **Examiner insight:**	Anaerobic: glucose → lactic acid + small amount of energy. Lactic acid is the product, not the fuel. The glucose is the fuel. After exercise, lactic acid must be removed — this requires oxygen (oxygen debt).

■ **Students often write:**	*"After exercise you keep breathing fast because you still need more oxygen for your muscles."*
✓ **Correct answer:**	After exercise, elevated breathing rate is to repay the OXYGEN DEBT — the extra oxygen needed to break down accumulated lactic acid in the liver (converting it back to glucose). The muscles have already stopped working; the oxygen is needed for lactic acid removal.
■ **Examiner insight:**	Oxygen debt is the key term. Post-exercise breathing ≠ "muscles still need oxygen." It is specifically for lactic acid removal in the liver. Always use "oxygen debt" in these questions.