

*Biology marks are lost to vague wording more than to gaps in knowledge: a process named instead of explained, a comparison without the comparison, a definition that omits the half that carries the mark. 生物失分多因表述含糊，而不是不懂 – 答题必须写清机制与比较对象。*

## Writing that earns the mark

Answering "why" with a name. "Osmosis" is not an explanation of why the cell swelled; the movement of water down a water-potential gradient through a partially permeable membrane is.

Comparing without a comparison. "Arteries have thick walls" earns nothing; "arteries have THICKER walls THAN veins" earns the mark.

Using "it" where the examiner cannot tell what is meant. Name the structure or the substance every time.

Writing "the plant makes energy". Energy is transferred or released, never made – photosynthesis makes glucose.

Answering a 4-mark question with one sentence. Count the marks and give that many distinct points.

## Cells, transport and enzymes

Saying osmosis is "the movement of water from high to low concentration". It is from a HIGHER to a LOWER water potential (a dilute to a concentrated solution) – the reverse of how it sounds.

Confusing diffusion with active transport. Active transport goes AGAINST the gradient and needs energy from respiration; diffusion does neither.

Saying a denatured enzyme has "been killed". Enzymes are not alive; the active site changes shape so the substrate no longer fits.

Explaining an enzyme's specificity without the active site and the complementary shape of the substrate.

Forgetting that at low temperature the enzyme is not denatured, only slow – the reaction resumes on warming.

## Plants

Saying plants respire only at night. They respire all the time; in daylight photosynthesis is simply faster.

Writing the photosynthesis equation without light and chlorophyll above the arrow – they are conditions, not reactants, and are still required.

Confusing xylem with phloem. Xylem carries water and mineral ions UP only and is dead; phloem carries sucrose and amino acids both ways and is alive.

Explaining transpiration as "water moving up the plant". Transpiration is the LOSS of water vapour from the leaves; the movement up is the transpiration stream.

Naming the limiting factor without saying which one is in shortest supply at the point being described.

## Humans

---

Saying the heart's left side pumps "oxygen". It pumps oxygenated BLOOD.

Confusing ventilation with gas exchange with respiration. Breathing moves air, gas exchange is diffusion at the alveoli, respiration releases energy in every cell.

Describing a villus adaptation without saying what it achieves. "Microvilli" earns nothing; "microvilli increase the surface area for absorption" earns the mark.

Saying insulin "turns glucose into glycogen". It causes the LIVER to convert excess glucose to glycogen – name the organ.

Giving a reflex arc without the relay neurone, or putting the effector before the motor neurone.

## Inheritance and variation

---

Using the wrong letters in a genetic diagram: the dominant and recessive allele must be the same LETTER in different cases (Bb, not Bb where b is a different gene).

Confusing genotype with phenotype. The genotype is the alleles; the phenotype is the characteristic they produce.

Saying the ratio in a cross "is" 3:1 when only four offspring are shown. It is the EXPECTED ratio, and real numbers vary by chance.

Describing natural selection as animals "trying" or "wanting" to adapt. Variation already exists; the environment selects.

Saying a mutation is "always harmful". Most are neutral, some are harmful, a few are beneficial – that is what makes selection possible.

## Ecology and practical work

---

Drawing a food chain arrow the wrong way. The arrow shows the direction of ENERGY flow, so it points from the eaten to the eater.

Explaining short food chains without energy loss at each trophic level.

Reporting a quadrat result without the area sampled, so the number cannot be scaled to the whole habitat.

Naming a control variable without saying it is kept the same, or confusing the control variable with the control experiment.