Words that grow: Frayer model for photosynthesis

Scope

Producer means an organism that makes its own food. The characteristics in this worked model describe green plants and the photosynthesising algae used here, not every producer. Keep photosynthesis and respiration distinct.

Questions and marks

Section 3, in printed order: sunflower leaf in sun E; rabbit digesting grass N; pondweed bubbling oxygen in light E; mushroom on a rotting log N; roots taking up water N; seaweed in sunlit shallow water E; yeast fermenting sugar N; green cactus stem in sunlight E. Half a mark each, 4 marks. Section 4: four Frayer squares for photosynthesis, 2 marks each, 8 marks. Section 5: explain producers making glucose and transfer through feeding to animals, 2 marks. Section 6: a False, plants make glucose rather than take food from soil; b True, oxygen is produced during photosynthesis; c False, plants respire as well. Correct judgement and reason, 1 mark each, 3 marks. Total 17.

Answer detail

Photosynthesis in green plants/algae uses light energy to make glucose from carbon dioxide and water, releasing oxygen. Chlorophyll absorbs light; it is in chloroplasts in these examples. Mineral uptake and respiration are not photosynthesis. Light is energy, not a material reactant. In bright light net oxygen release can occur while respiration continues.

Source-specific check

Accept a valid example and a non-example with a reason. Do not mark “producer” as meaning only an organism with chloroplasts.