

Full Higher Separate content. ★ = Higher Tier. ◆ = Separate Science only.

Q1. Describe FOUR ways plants use the glucose produced during photosynthesis. For each, state the form glucose is converted to.

[4 marks]

★ HIGHER TIER

Q2. ★ Explain why plants store glucose as starch rather than keeping it as glucose.

[2 marks]

Total: 6 marks

Q1 (4 marks)

Describe FOUR ways plants use the glucose produced during photosynthesis. For each, state ...

- Respiration: glucose broken down to release energy (ATP) [1]
- Storage: converted to insoluble STARCH [1]
- Structure: converted to CELLULOSE for cell walls [1]
- Proteins: combined with nitrates from soil → amino acids → proteins [1] — accept: lipids for seeds, sucrose for transport

Q2 (2 marks) [★ HT]

★ *Explain why plants store glucose as starch rather than keeping it as glucose.*

- Starch is insoluble — does not affect osmosis or water potential of cells [1]
- Glucose would draw in water by osmosis if it accumulated — starch avoids this; starch is also compact for storage [1]