Blurt it

Step 1

Name _____ Date _____

1. Cover your notes and put your phone face down.
2. Set a timer for 5 minutes.
3. Write down everything you remember about bioenergetics: facts, key words, equations, practicals, and mistakes to avoid. Diagrams count too.

Stuck? Start with one of these: photosynthesis · limiting factor · anaerobic respiration

When the timer ends, turn over and check what you remembered.

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Check it, fix it, space it

Steps 2, 3 and 4

Check it

Tick each idea you wrote down, even in your own words.

- [ ] Photosynthesis: carbon dioxide + water → glucose + oxygen, using light energy; it is endothermic
- [ ] Temperature, light intensity, carbon dioxide concentration and the amount of chlorophyll affect the rate of photosynthesis
- [ ] Plants use glucose for respiration, starch, fats and oils, cellulose, and (with nitrate ions) amino acids
- [ ] Respiration is exothermic and goes on all the time in living cells
- [ ] Aerobic respiration: glucose + oxygen → carbon dioxide + water; it releases much more energy than anaerobic
- [ ] Anaerobic respiration in muscles: glucose → lactic acid. In plants and yeast: glucose → ethanol + carbon dioxide (fermentation)
- [ ] During exercise, heart rate and breathing rate rise; if muscles run short of oxygen they respire anaerobically, building up an oxygen debt
- [ ] Metabolism is the sum of all the reactions in a cell or the body

Higher only

- [ ] Limiting factors interact: whichever is in shortest supply limits the rate
- [ ] Light intensity follows the inverse square law: double the distance gives a quarter of the light
- [ ] Greenhouse growers only add heat, light or carbon dioxide when it pays for itself
- [ ] Lactic acid goes to the liver to be turned back into glucose; oxygen debt is the extra oxygen needed to remove it

Key words to use: photosynthesis · endothermic · chlorophyll · limiting factor · aerobic respiration · anaerobic respiration · exothermic · fermentation · lactic acid · oxygen debt · metabolism · glycogen

I remembered _____ out of 8. **Higher only: _____ out of 4.**

Fix it

Pick 3 ideas you missed. Look them up, then write each one correctly.

1

2

3

Space it

Blurt again on a fresh sheet. Gaps help you remember for longer.

Tomorrow

Date _____
Score _____ / 8
Higher only _____ / 4

In 3 days

Date _____
Score _____ / 8
Higher only _____ / 4

In a week

Date _____
Score _____ / 8
Higher only _____ / 4

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