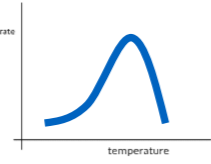
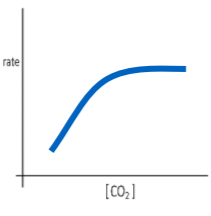
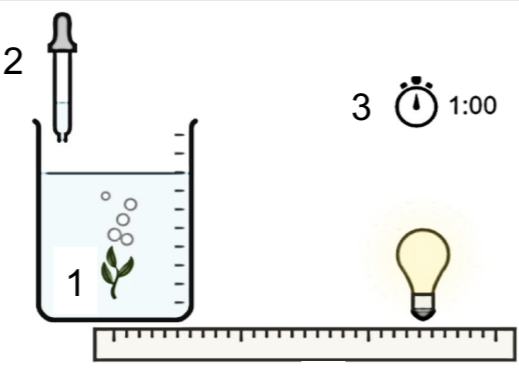


FOUNDATION BIOLOGY – YEAR 10 – BIOENERGETICS

A PHOTOSYNTHESIS	
1	Photosynthesis word equation Carbon Dioxide + Water → Glucose + Oxygen
2	Photosynthesis symbols Carbon Dioxide Water Glucose Oxygen CO ₂ H ₂ O C ₆ H ₁₂ O ₆ O ₂
3	Photosynthesis description Endothermic reaction with energy transferred from environment to chloroplast by light
4	Effect of temperature on rate of respiration  Rate increases until optimum temperature reached. Rate decreases after passing this temperature
5	Effect of light intensity, CO ₂ concentration and chloroplast number on respiration  Rate increases until plateau reached
6	Glucose uses Respiration Storage as starch, fat or oil Cellulose for cell wall or amino acids for proteins

B PHOTOSYNTHESIS PRACTICAL	
1	Place pondweed in water
2	Add small amount of sodium hydrogen carbonate
3	Count bubbles for 1 minute
4	Change distance and repeat



C RESPIRATION	
1	Respiration description Exothermic reaction in living cells releasing energy for chemical reactions, movement and warmth
2	Aerobic respiration Requires oxygen and releases energy Produces carbon dioxide and water
3	Anaerobic respiration Doesn't require oxygen only produces little energy Produces lactic acid in muscle Produces alcohol plus carbon dioxide in yeast
4	Aerobic respiration equation Glucose + Oxygen → Carbon Dioxide + Water
5	Anaerobic respiration equations In muscles: Glucose → Lactic Acid In yeast: Glucose → Carbon Dioxide + Alcohol
6	Reaction to Exercise Increased heart rate, breathing rate and breathing volume. Anaerobic respiration occurs if insufficient oxygen
7	Oxygen debt Caused by build up of lactic acid due to anaerobic respiration. Amount of extra oxygen the body needs after exercise to react with the accumulated lactic acid and remove it from the cells
8	Lactic Acid Breakdown Blood flowing through the muscles transports the lactic acid to the liver where it is converted back into glucose
9	Inverse Square Law Distance and light intensity have inverse relationship As distance increases light intensity decreases. Light intensity = 1/d ² (d is the distance from the lamp)