Work for Year 9 – Biology – Bioenergetics

Task 1 - Log on to https://www.senecalearning.com/

Sign up to an account if you do not already have one

Join the class using code: **rwwlh4dtyc**

Task 2 – Make notes using your knowledge organiser for this topic and complete the self- quizzing questions

Task 3 – Complete the questions below.

1. Write down the word equation for photosynthesis.

2. Copy and complete this table.

Name of molecule	Chemical Symbol
Water	
Oxygen	
Carbon dioxide	
Glucose	

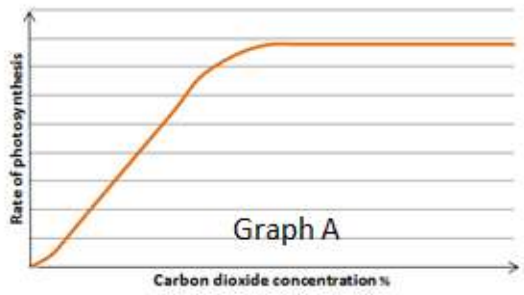
3. Photosynthesis is affected by limiting factors. What is meant by the term 'limiting factor'?

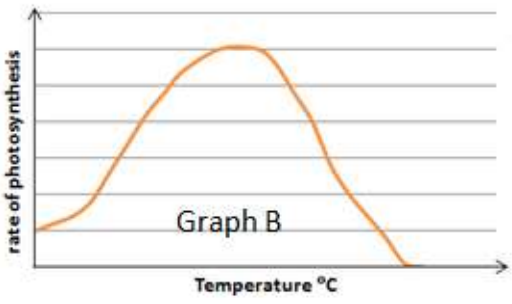
4. Name the raw materials needed by a plant for photosynthesis?

5. Name the green pigment present in plant cells.

6. What is the role of this green pigment?

7. For the graphs below - identify what the limiting factor(s) might be in the experiments.





8. Sketch out Graph A and draw a line onto it showing what might occur if the experiment was repeated at a lower light intensity.

9. List three ways commercial farmers improve the environmental conditions to maximise photosynthesis and ensure they make a profit.

10. How is the glucose produced by photosynthesis used in plants?

Higher Tier Questions

HT 11. Calculate the light intensity for the following student data. Use the formula:

$$\text{Light Intensity} = 1/\text{distance}^2$$

Distance (d) of lamp from pond weed (m)	0.3	0.5
Light Intensity $1/d^2$		

B. Respiration

1. When does respiration occur in cells?

2. Copy and complete the table below:

	Aerobic respiration	Anaerobic respiration in animal cells	Anaerobic respiration in plant and yeast cells
Oxygen required?			
End products			
Oxidation of glucose complete/incomplete?			
Efficiency of energy transfer is high or low?			

3. Name **three** processes that organisms require energy for.

4. What does the chemical formula $\mathbf{C_6H_{12}O_6}$ represent?

5. Write down the word equation for aerobic respiration in a plant cell.

6. Write down the word equation for anaerobic respiration in a yeast cell.

7. Why is fermentation of economic importance?

8. Describe **three** ways in which the body responds to vigorous exercise in order to ensure sufficient oxygen reaches the muscle cells.

9. If exercise carries on for a long time, what happens to the muscles?

10. Why is respiration described as an endothermic reaction?