



ST NINIAN'S HIGH SCHOOL

NATIONAL 4 BIOLOGY



LEARNING OBJECTIVES

UNIT 1: CELL BIOLOGY

SECTION 7 PHOTOSYNTHESIS

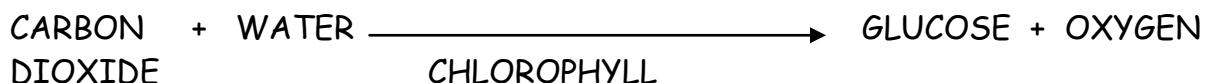
PHOTOSYNTHESIS

1. State the definition of **PHOTOSYNTHESIS**:

PHOTOSYNTHESIS is the process by which **GREEN PLANTS** make their own food.

2. State the photosynthesis equation

SUNLIGHT



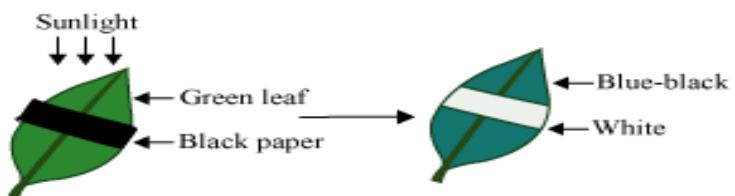
3. Explain that the raw materials for PHOTOSYNTHESIS are **CARBON DIOXIDE** and **WATER**.

4. Explain that the end products are **GLUCOSE** and **OXYGEN**.

5. Know that the Glucose is built up into **STARCH** which can be tested for with **IODINE** Solution.

6. Describe the stages involved in testing a leaf for starch:

Boil leaf in water
Boil leaf in ethanol
Rinse leaf
Add iodine solution



FACTORS AFFECTING RATE OF PHOTOSYNTHESIS.

7. Understand that photosynthesis can happen more quickly or slowly when conditions change.

8. Know that if any of the **requirements** (sunlight, water, carbon dioxide or a suitable temperature) are low or missing, the **photosynthesis rate is limited** (slows down).

9. Know that if the **photosynthesis rate increases**, plants will make **MORE glucose** which they use to grow



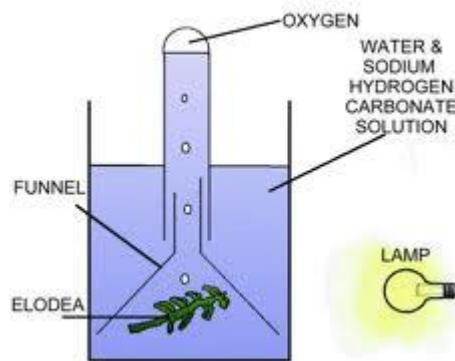
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LEARNING OBJECTIVES

10. Explain how the ELODEA BUBBLER experiment can be used to investigate the factors affecting the RATE of photosynthesis.



11. Know that plant growers (horticulturists) need to help their plants grow more by adding any of the factors for Photosynthesis that are in LOW supply.

12. Greenhouses can help plant growers by:

- adding extra lighting for photosynthesis;
- including a heater to increase the temperature; and
- using a gas heater to produce extra carbon dioxide.

