

NAME: _____ DATE: _____

PHOTOSYNTHESIS REVISION

1. Green plants make their own food by the process of _____. The _____ pigment called _____ found in the chloroplasts of the leaves, trap energy from the _____. Raw materials for the process named above are _____ and the gas _____. The products of the process are the gas _____ which _____ into the _____ for animals to breathe and the sugar _____ which is stored in the plant as _____.

2. When testing a leaf for starch:

a. the leaf is boiled initially in water to _____ and _____ it.

b. the leaf is heated in alcohol to remove the green _____ and this process is called _____.

c. if starch is present in the leaf it will turn _____ when _____ solution is placed on it.

3. Name four things that are necessary for photosynthesis to occur.

4. Four external features of a leaf that make them adapted (made for) photosynthesis are:

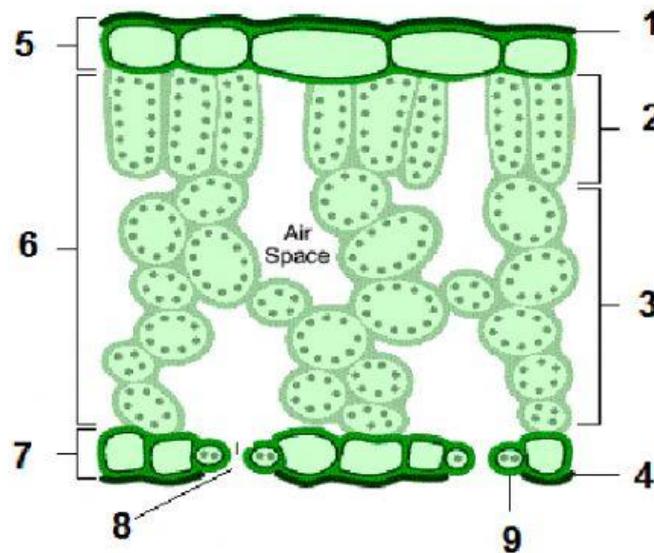
a. The leaf _____ holds the leaf at 90 degrees to the _____.

b. The leaves are arranged so they do not _____ the lower leaves and block the sun.

c. The leaves are very _____ so that sunlight can easily penetrate through.

d. The leaves are broad and offer a large _____ for absorption of sunlight.

5. The diagram below shows the internal structure of a leaf. Label the regions on the diagram.



DISCARD BOX

Fill in the gaps in these sentences using words from the box. You may need each word once, more than once, or not at all.

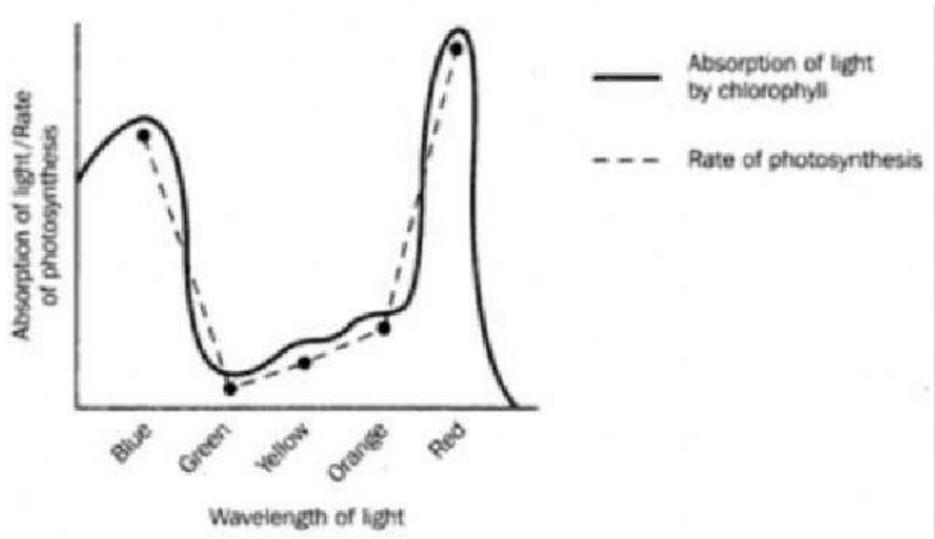
carbon dioxide	cells	chloroplasts	heat	holes	large
light	losing	night	oxygen	small	stomata
waterproof					

The cuticle is a _____ layer that stops the leaf _____ too much water. The palisade cells have lots of _____ to absorb _____ energy to make photosynthesis happen. Leaves have a _____ surface area so they can absorb a lot of _____ energy. Cells in the leaf need to absorb _____ from the air. Air gets into the leaf through _____ in the bottom surface called _____. Guard _____ can close the stomata at _____ to stop the leaf _____ water.

Some of the glucose made in photosynthesis is used to make new materials for the plant. Match up the materials with their uses.

- | | |
|-------------|---|
| Amino acids | A store of energy in some seeds and special organs like potatoes. |
| Cellulose | Energy stores found in some nuts. |
| Fats | Used to make proteins. |
| Oils | Used to make cell walls. |
| Starch | Used in cell surface membranes. |

6. Look at the graph below and answer the following questions.



- What would be a suitable title for this graph? _____
- How does the absorption of light affect the rate of photosynthesis? _____
- Which two colours cause an increase in photosynthesis rate? _____
- Which two colours cause the most decrease in photosynthesis rate? _____

7. Look at the graph below showing how various factors affect photosynthesis and answer the following questions.

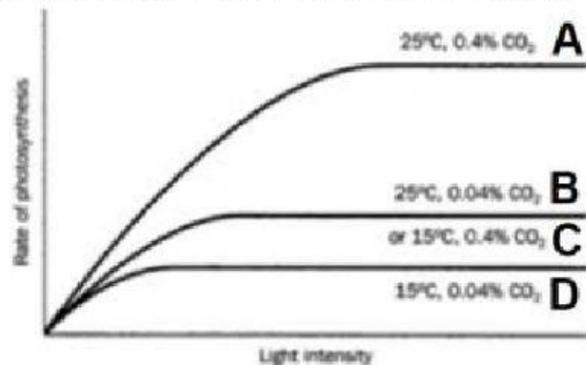


Fig. 4.4 The effect of various factors on the rate of photosynthesis

- What are factors that affect how fast photosynthesis occurs called? _____
- What are the factors being observed in the graph above. _____
- Which conditions allows photosynthesis to occur the fastest (fastest rate)? Click two boxes below.

0°C	15°C	25°C	0.004% CO ₂	0.04% CO ₂	0.4% CO ₂
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- Therefore, which condition, A, B, C or D shows perfect conditions for photosynthesis? _____

e. Which conditions have equal effect on the rate of photosynthesis? Click two boxes below.

- 25°C, 0.04% CO₂
- 25°C, 0.4% CO₂
- 15°C, 0.04% CO₂
- 15°C, 0.4% CO₂

8. Drag the words to the correct spaces to complete the word equation for photosynthesis.

chlorophyll

water

carbon dioxide

glucose

light energy

oxygen