

Please write a short answer response (3-4 sentences) to the following question on half a sheet of paper.

Do we need plants to survive?

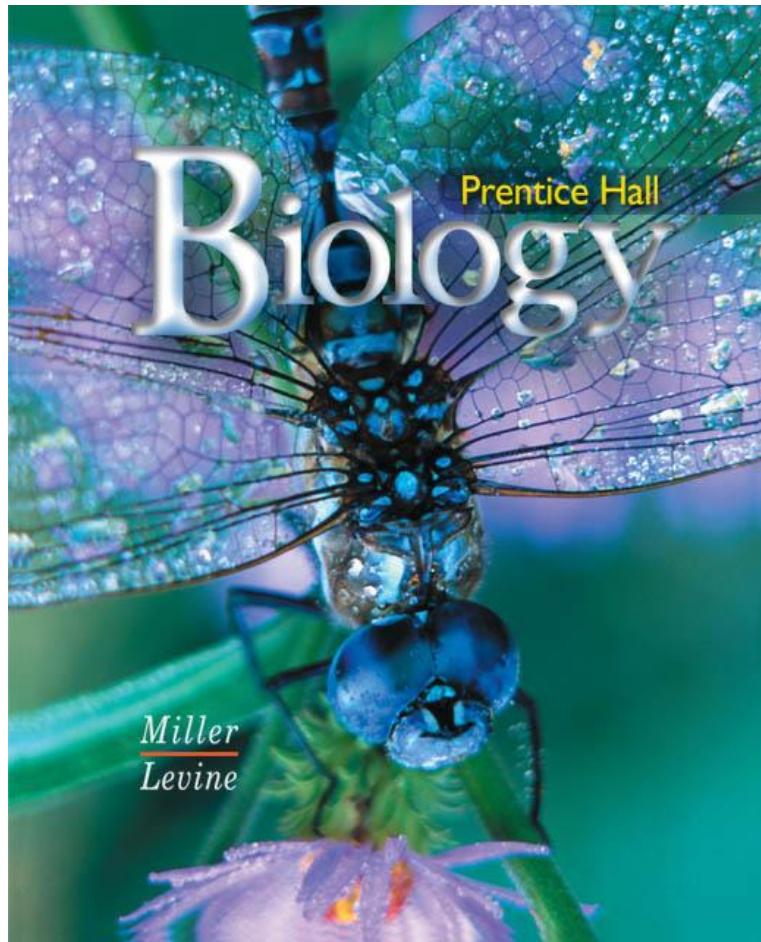


General Sherman, a Giant Sequoia, is the world's tallest tree, measuring 274.9 feet tall and 36.5 feet in diameter.

What must plants such as General Sherman take in (reactants) in order to grow?

What is made (the products)? Why is this important?

**On a piece of paper
demonstrate:
How photosynthesis shows
conservation of mass and
conservation of energy?**



- **Chapter 8 – pgs. 200- 214**

8-1 ENERGY AND LIFE



Pgs: 200-203

DO NOW:

**STOP AND THINK?
HOW DO YOU GET YOUR
ENERGY.....
LET'S TRACE THE PATH OF
ENERGY.**

Living things need energy to survive.

This energy comes from food. The energy in most foods comes from the sun.



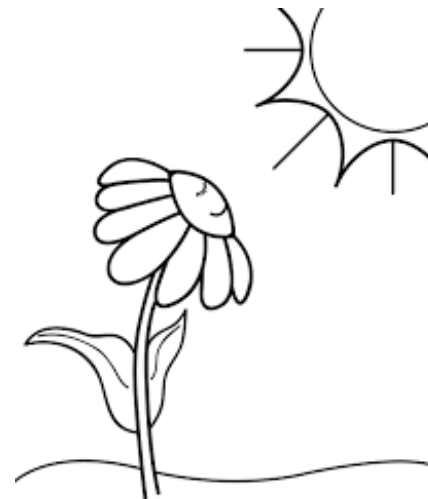
Where do plants get the energy they need to produce food?

Plants get energy from the sun to produce their own food.

Where is the food produced? **Chloroplast**

What is the “food” produced by the plant?
Glucose(sugar) a.k.a. “chemical energy”

Plants can store excess sugar into Starch to use as energy at a later time.



Organism that **produce** their own food are called:

Producers or Autotrophs

Auto means “self” (ex: autopilot),.

Troph means “feeder”

Autotroph = “self feeder, they can automatically make their own food



Producers can **produce** their own food!

Producers and autotroph are the same.

Are you a
producer?
they can produce their own food

WHY?

Organisms that need to **consume** their food are called:

Consumers or Heterotrophs

Hetero means “other”

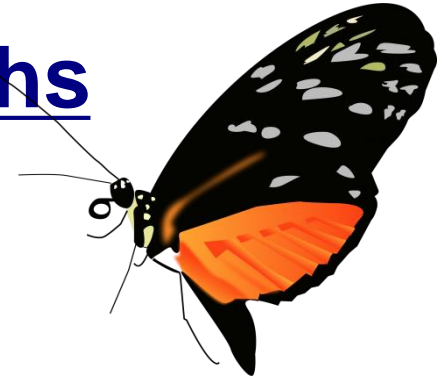
Troph means “feeder”

Heterotroph = other feeder

(needs “other” sources of food since it can NOT self feed)

Consumers need to **consume** their own food.

Consumers and Heterotrophs are the same!!



Autotrophs and Heterotrophs



Plants and some other types of organisms are able to use light energy from the sun to produce food.

What process is this called?

8-1 Section QUIZ

- 1 Organisms that make their own food are called
- a. autotrophs.
 - b. heterotrophs.
 - c. decomposers.
 - d. consumers.

8-1 Section QUIZ

- 2** Most autotrophs obtain their energy from
- a. chemicals in the environment.
 - b. sunlight.
 - c. carbon dioxide in the air.
 - d. other producers.

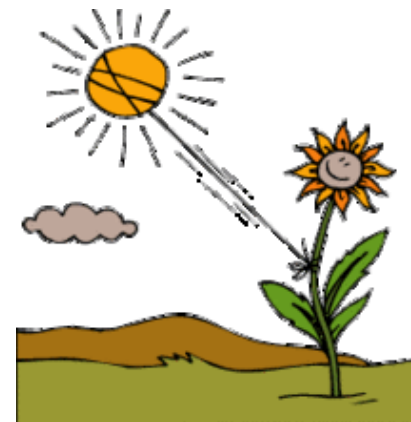
8-2 Photosynthesis: An Overview



BIG IDEA!!!

The key cellular process for producing energy from the sun is photosynthesis.

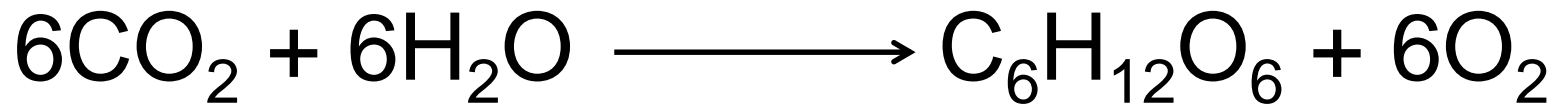
Photosynthesis is the process in which green **plants** use water and carbon dioxide to convert it into **high-energy carbohydrates** and oxygen.



What is the equation for photosynthesis? (word and chemical equation)

The Photosynthesis Equation

The equation for photosynthesis is:



carbon dioxide + water \longrightarrow sugar (glucose) + oxygen

Photosynthesis uses the energy of sunlight to convert water and carbon dioxide into high energy sugars and oxygen.

8-2

The raw materials (reactants) required for plants to carry out photosynthesis are

- A. carbon dioxide and oxygen.
- B. oxygen and sugars.
- C. carbon dioxide and water.
- D. oxygen and water.

8-2

The products of the photosynthetic reactions are:

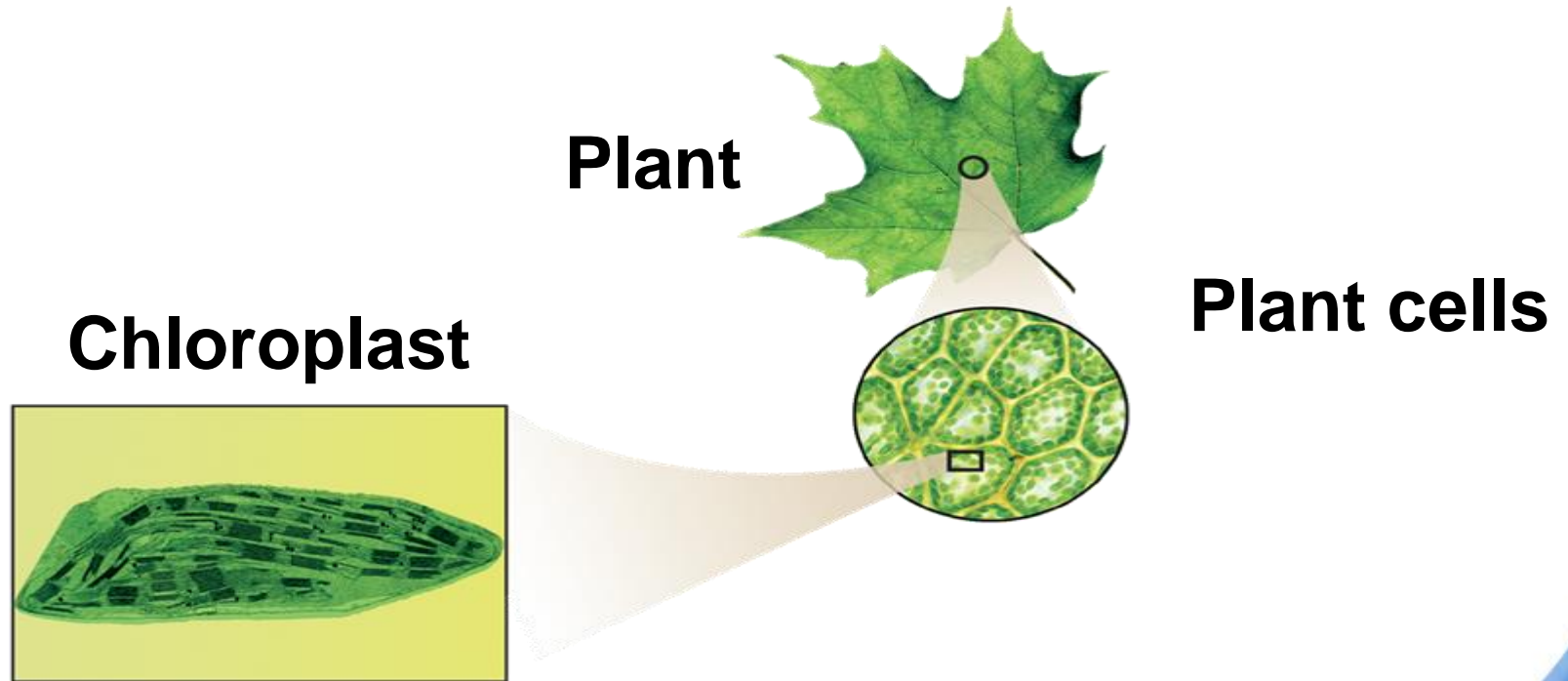
- A. carbon dioxide and oxygen.
- B. oxygen and sugars.
- C. carbon dioxide and water.
- D. oxygen and water.

8-3 The Reactions of Photosynthesis

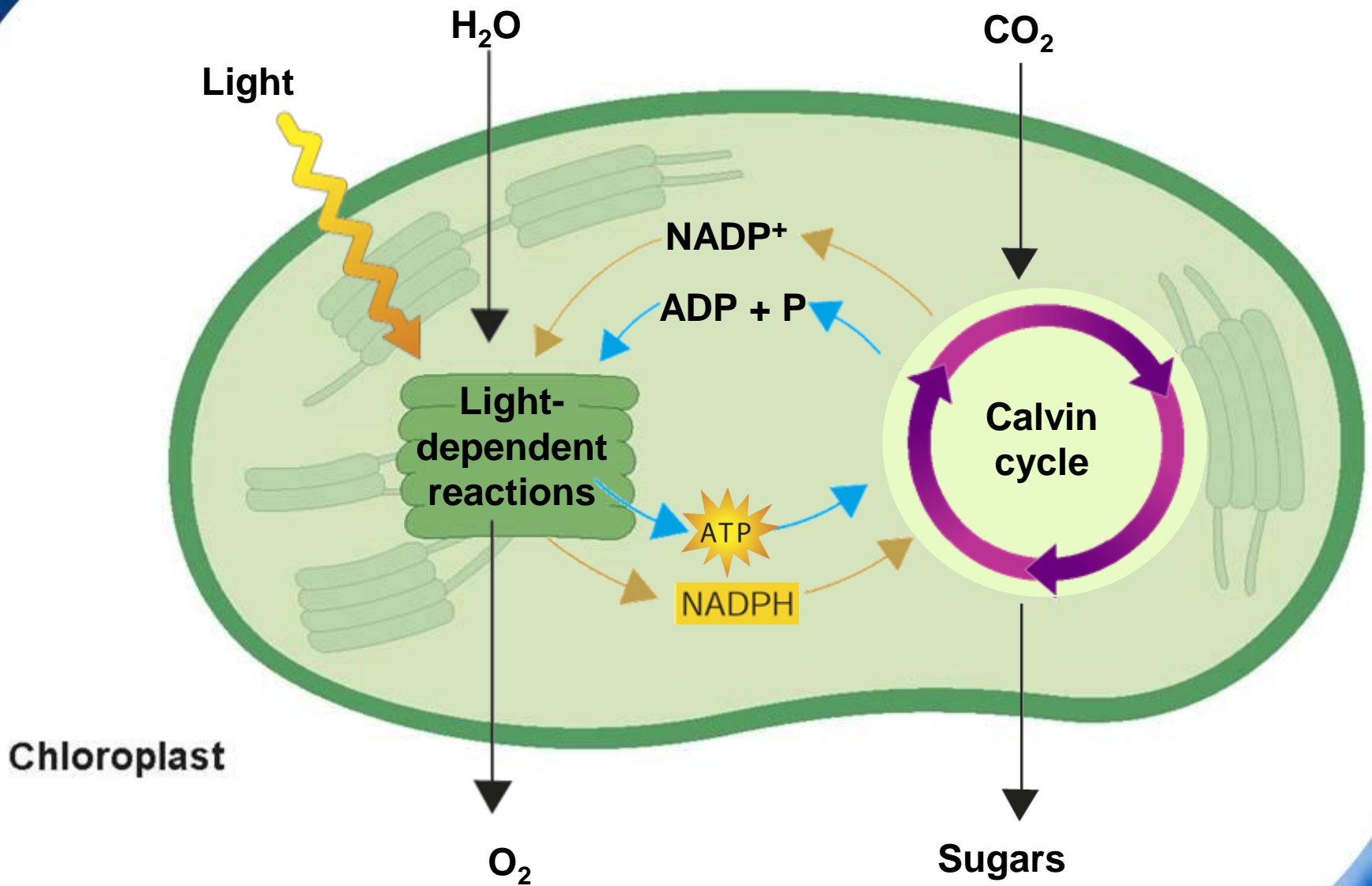


Inside a Chloroplast

In plants, photosynthesis takes place inside chloroplasts



8-3 The Reactions of Photosynthesis → Inside a Chloroplast



Chloroplast

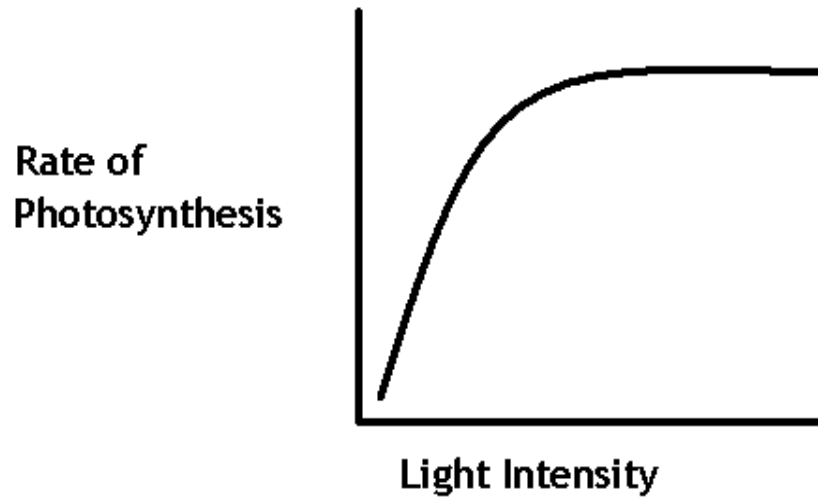
Factors Affecting Photosynthesis

1. Amount of Water
2. Light Intensity
3. Temperature

How could we measure the rate of photosynthesis in a laboratory?

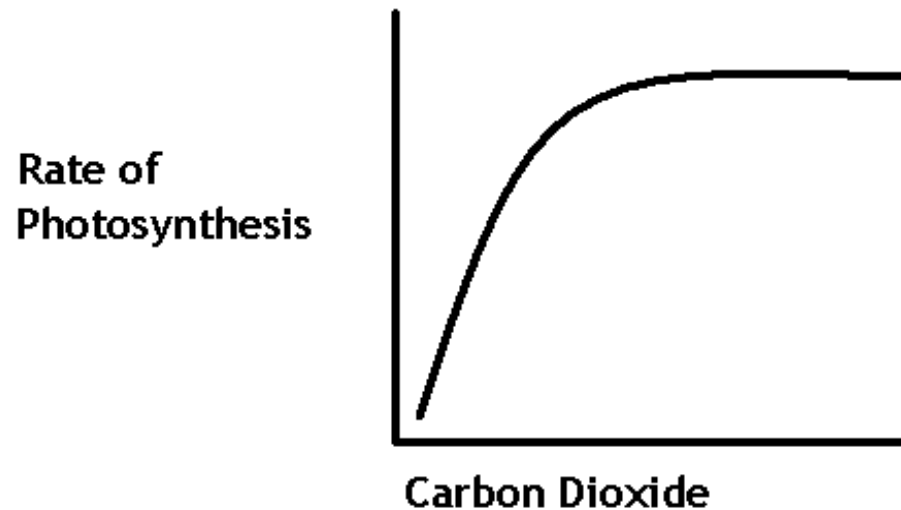
PHOTOSYNTHESIS

- **What affects photosynthesis?**
 - **Light intensity: as light increases, rate of photosynthesis increases**



PHOTOSYNTHESIS

- **What affects photosynthesis?**
 - **Carbon Dioxide: As CO_2 increases, rate of photosynthesis increases**

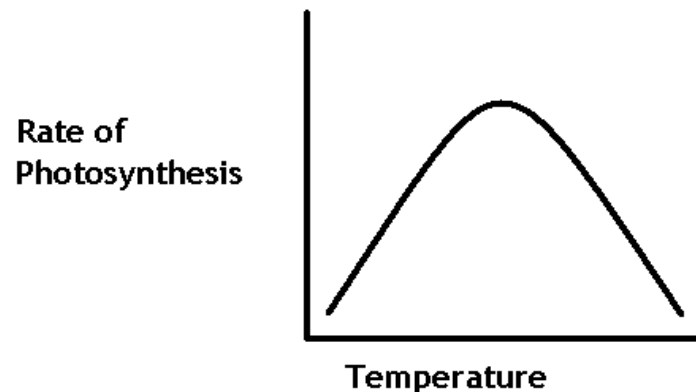


PHOTOSYNTHESIS

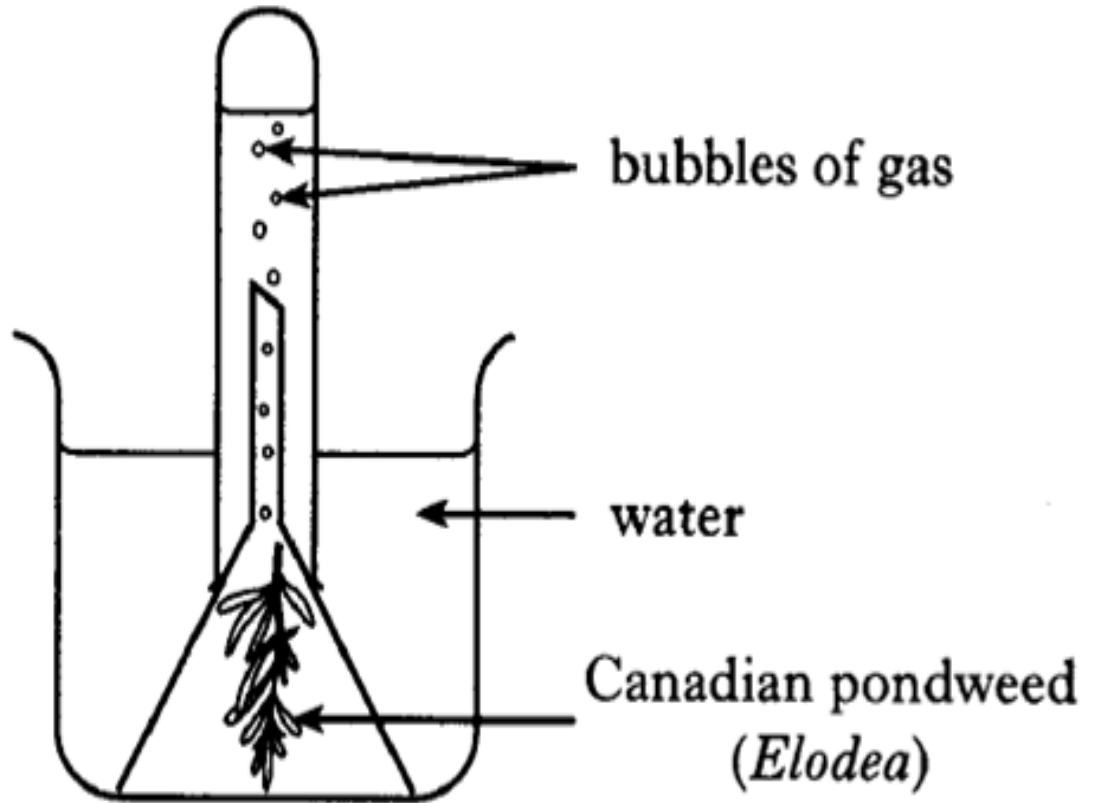
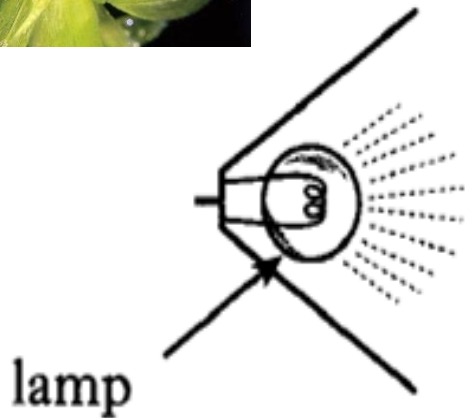
- **What affects photosynthesis?**

- **Temperature:**

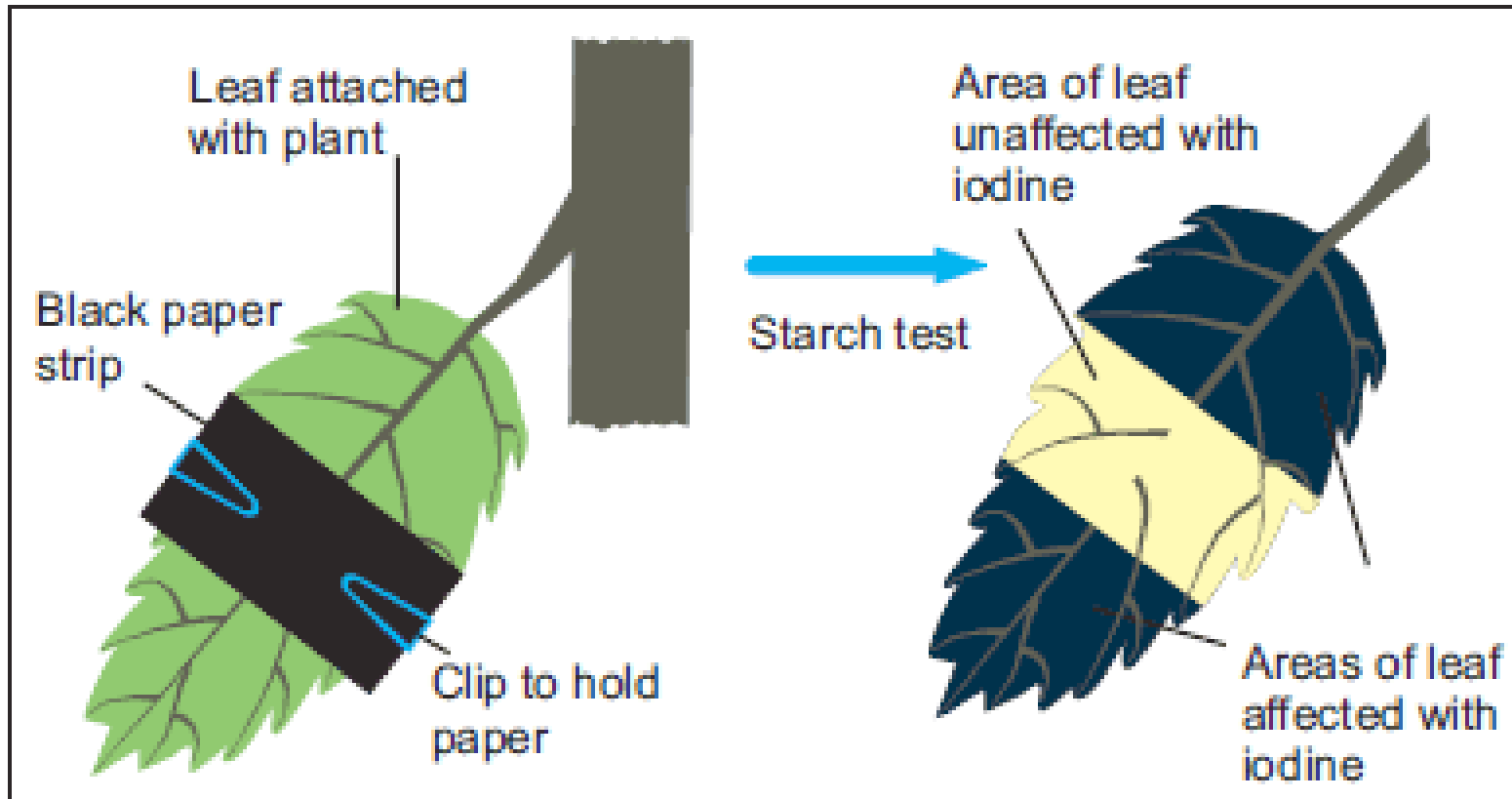
- Temperature Low = Rate of photosynthesis low
- Temperature Increases = Rate of photosynthesis increases
- If tempera



What is happening in this picture?



What is happening here?



Actual leaves

Results of iodine test



normal leaf



whole leaf exposed
to light



half of leaf covered

8-3 Section QUIZ

- 1** In plants, photosynthesis takes place inside the
- a. thylakoids.
 - b. chloroplasts.
 - c. photosystems.
 - d. chlorophyll.

8-3 Section QUIZ

- 5** Which of the following factors does NOT directly affect photosynthesis?
- a. wind
 - b. water supply
 - c. temperature
 - d. light intensity

Section QUIZ

Photosynthesis - Exit Slip

Number your paper 1-6 and answer

1. Who does it?
2. Where does it occur?
3. Why is it important to us?
4. What are the reactants?
5. What are the products?
6. Write the equation for photosynthesis