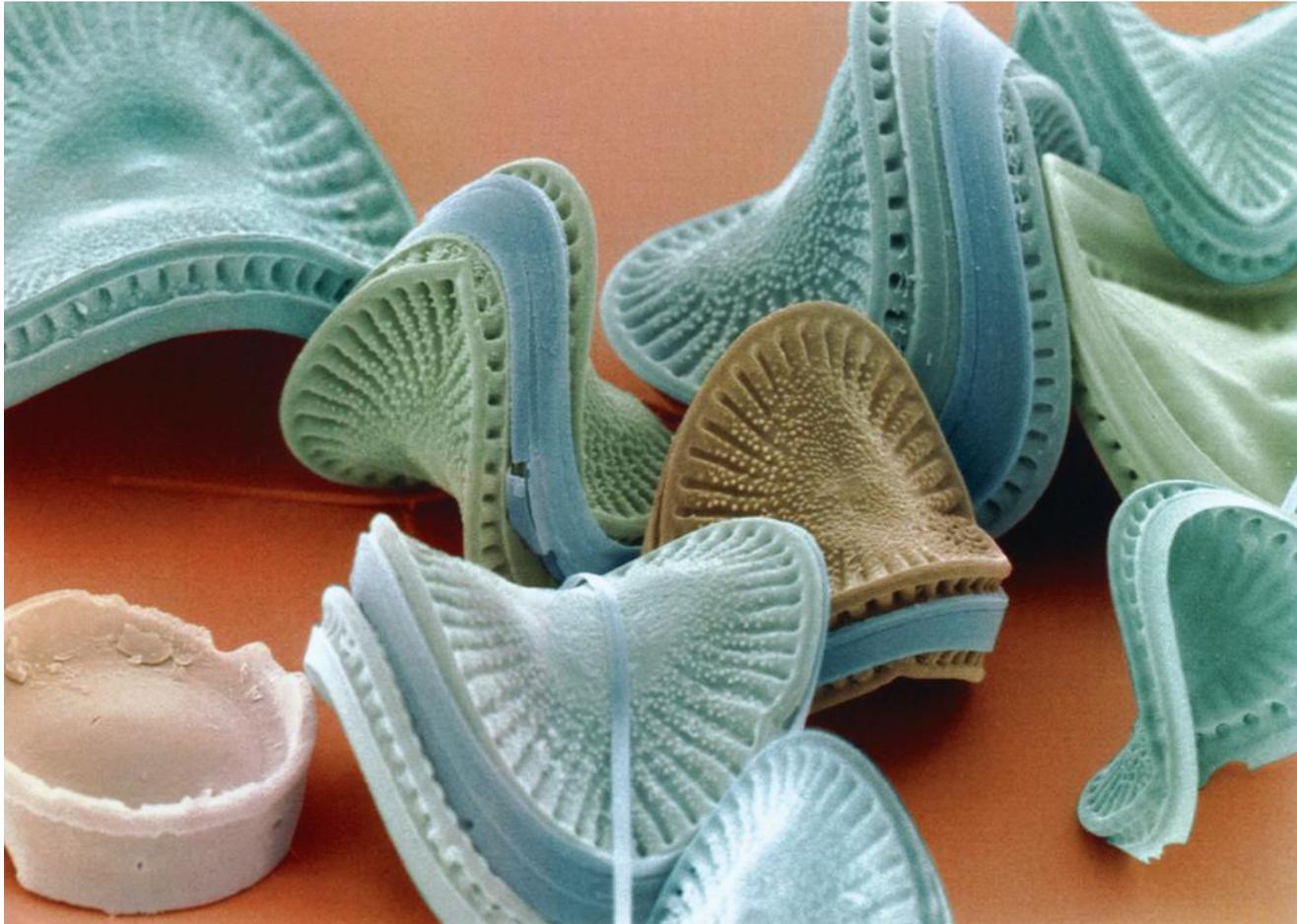


4.2 Overview of Photosynthesis

KEY CONCEPT

The overall process of photosynthesis produces sugars that store chemical energy.



4.2 Overview of Photosynthesis

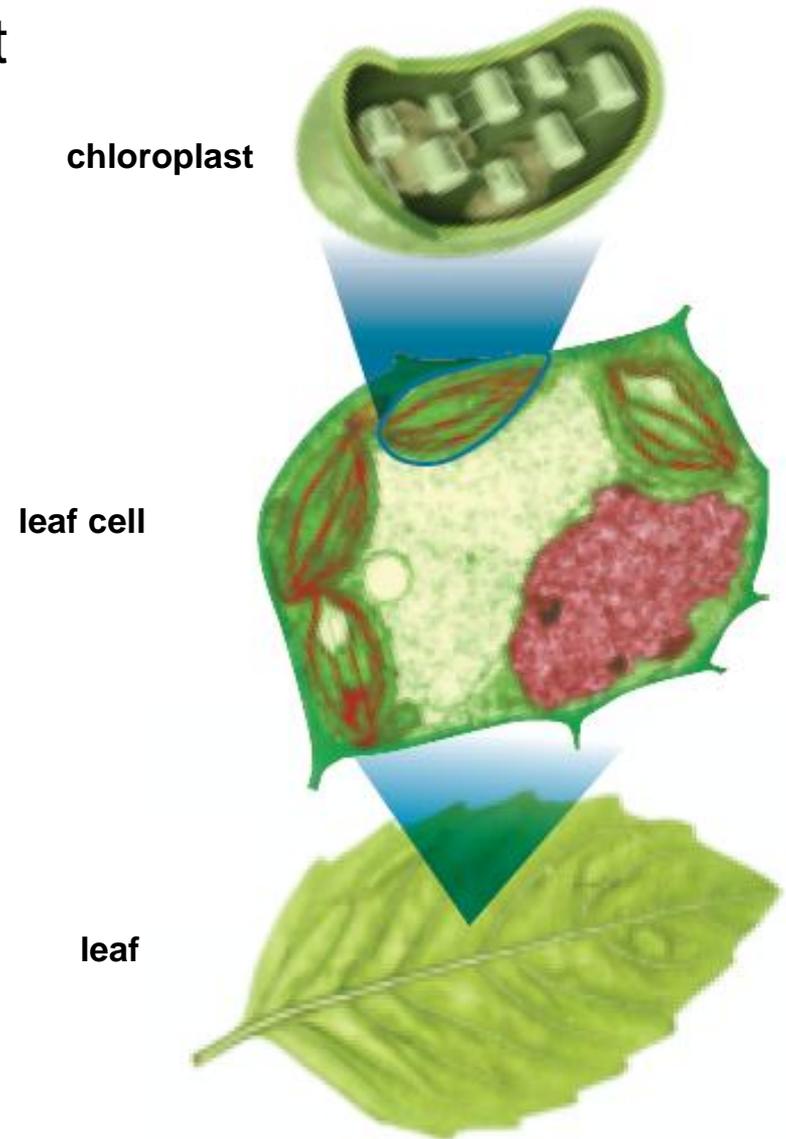
▶ Photosynthetic organisms are producers.

- Producers make their own source of chemical energy.
- Plants use photosynthesis and are producers.
- Photosynthesis captures energy from sunlight to make sugars.



4.2 Overview of Photosynthesis

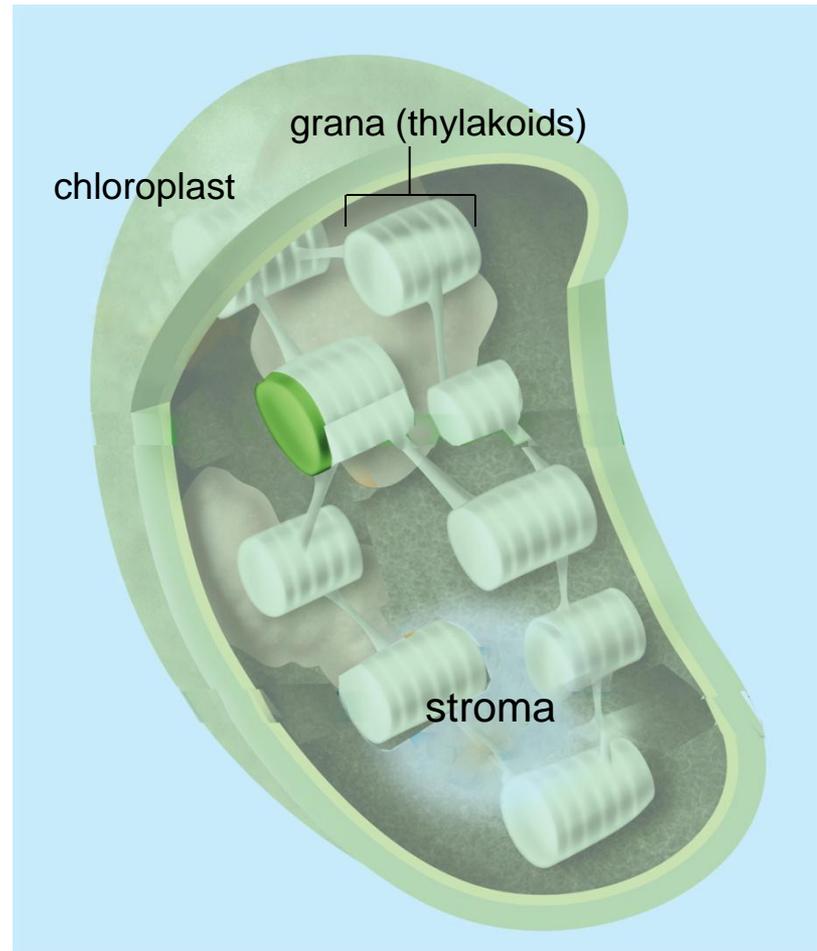
- Chlorophyll is a molecule that absorbs light energy.
- In plants, chlorophyll is found in organelles called chloroplasts.



4.2 Overview of Photosynthesis

▶ Photosynthesis in plants occurs in chloroplasts.

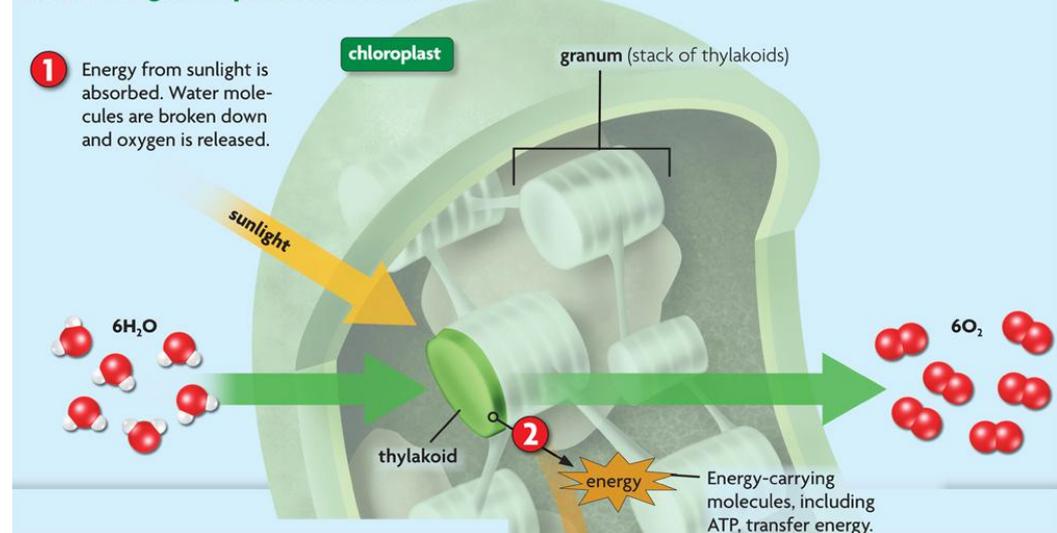
- Photosynthesis takes place in two parts of chloroplasts.
 - grana (thylakoids)
 - stroma



4.2 Overview of Photosynthesis

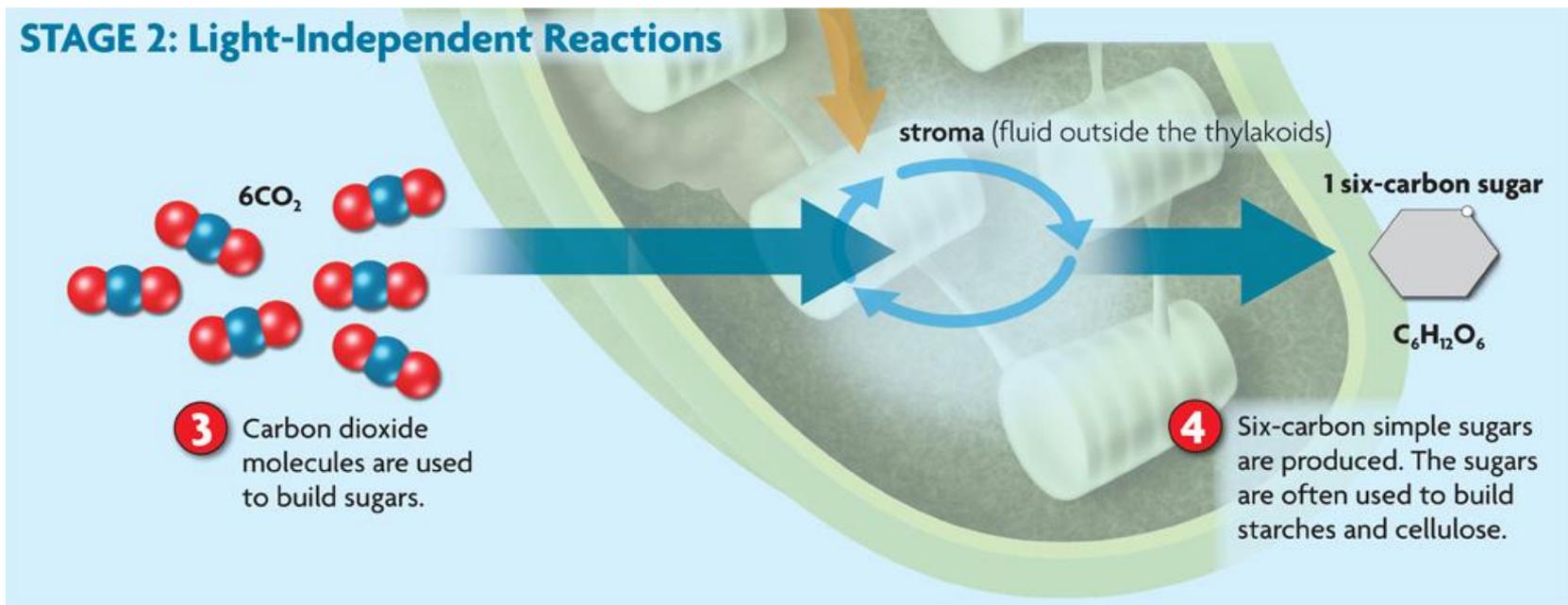
- The light-dependent reactions capture energy from sunlight.
 - take place in thylakoids
 - water and sunlight are needed
 - chlorophyll absorbs energy
 - energy is transferred along thylakoid membrane then to light-independent reactions
 - oxygen is released

STAGE 1: Light-Dependent Reactions



4.2 Overview of Photosynthesis

- The light-independent reactions make sugars.
 - take place in stroma
 - needs carbon dioxide from atmosphere
 - use energy to build a sugar in a cycle of chemical reactions



4.2 Overview of Photosynthesis

- The equation for the overall process is:

