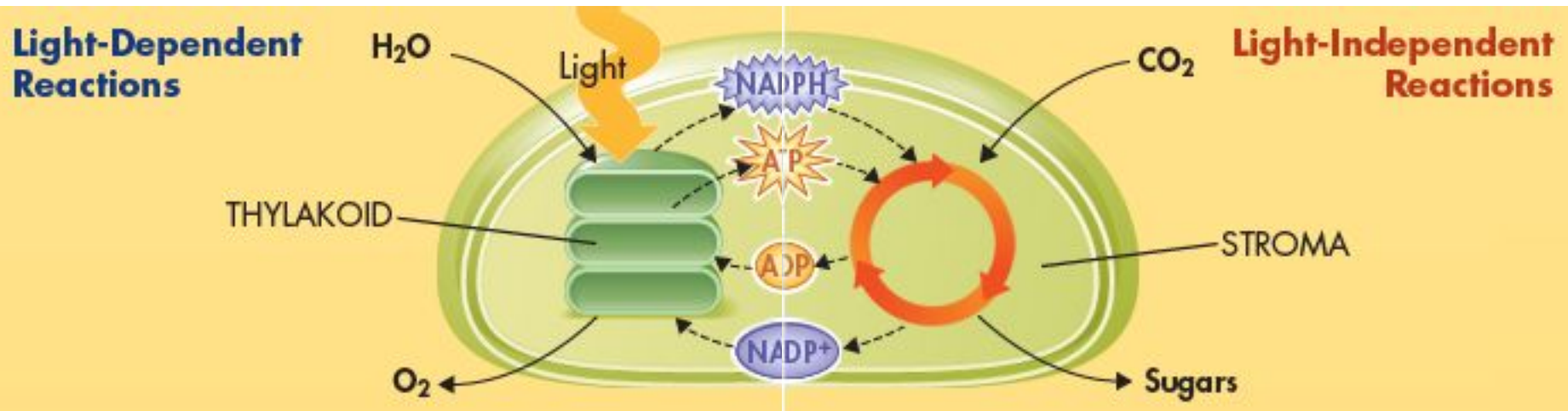


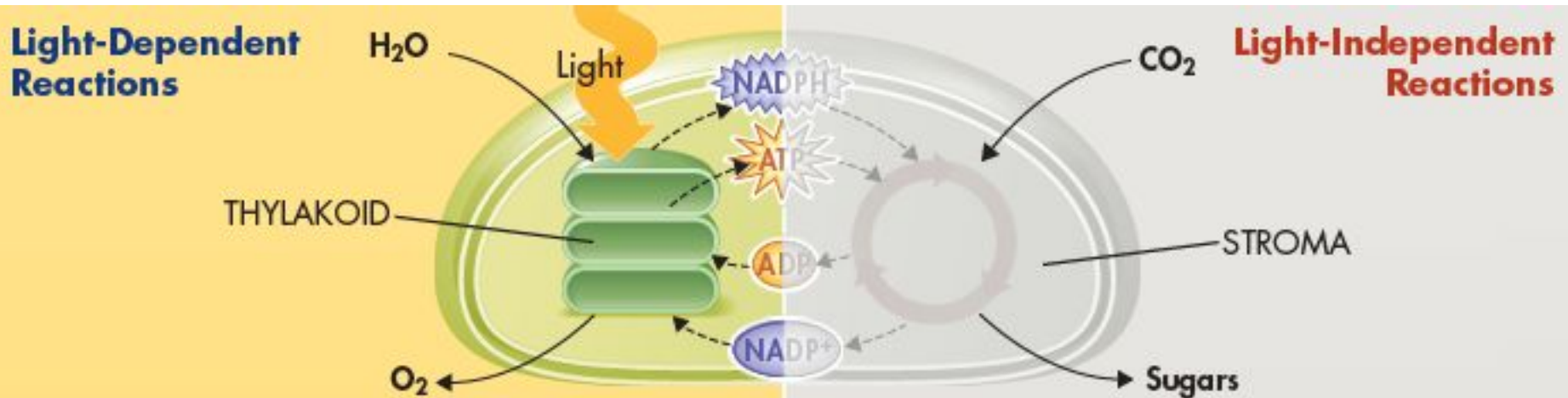
Photosynthesis involves two phases of chemical reactions:

1. Light-dependent reactions
2. Light-independent reactions



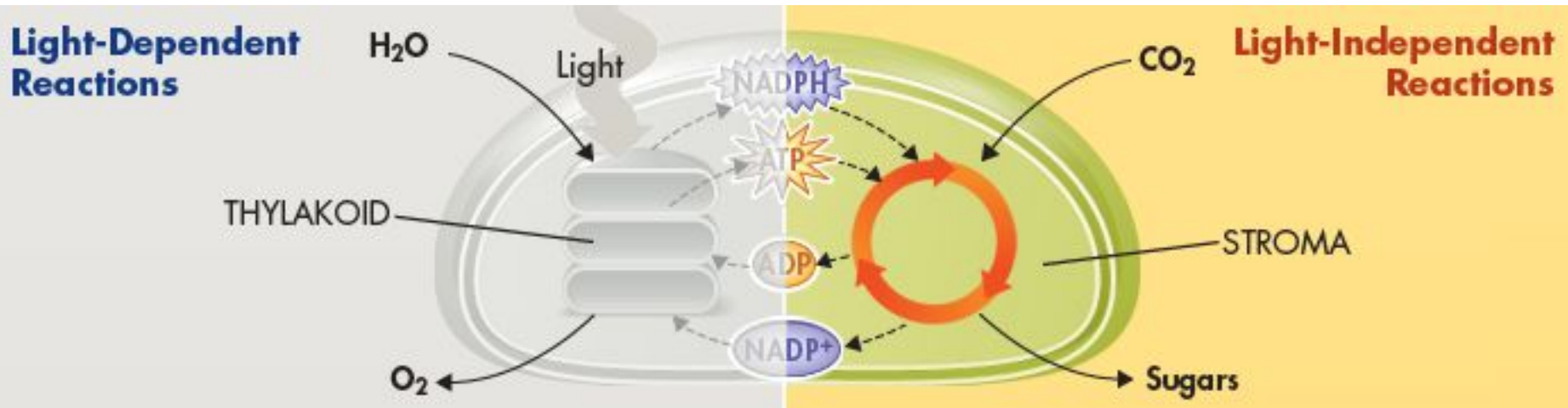
Light-Dependent Reaction

- ✓ Require energy from **sunlight**, light-absorbing chlorophyll pigments, and **water**
- ✓ Produce ATP, NADPH (electron carrier), and **oxygen**
- ✓ Occur in the **thylakoid membranes** of the chloroplasts



Light-Independent Reaction

- ✓ Do **NOT** use light energy
- ✓ Require **carbon dioxide** from the atmosphere, NADPH and ATP (from light-dependent reactions)
- ✓ Produce energy-rich sugars (**glucose**)
- ✓ Occur in the **stroma** of the chloroplasts



Factors Affecting Photosynthesis

- Many factors influence the rate of photosynthesis:
 - ✓ **Light Intensity** – Rate of photosynthesis increases with light intensity up to a certain point, then levels off
 - ✓ **Availability of Water** – Lack of water slows down photosynthesis
 - ✓ **Temperature** – Rate of photosynthesis slows at extreme temperatures and usually has an optimal temperature for each kind of plant

What are the products of the light-dependent reactions?



Students, write your response!

Where do the light-independent reactions occur?



Students, write your response!

What factors affect photosynthesis?



Students, write your response!