STEPS OF PHOTOSYNTHESIS

1. LIGHT ENERGY enters the system through photosystem 2, where water is oxidized by an enzyme. This process generates oxygen ($O_2$) and high-energy electrons ($e^-$).

2. The high-energy electrons are used to pump protons ($H^+$) from the stroma into the thylakoid lumen, creating a proton gradient.

3. ATP synthase utilizes the proton gradient to generate ATP (adenosine triphosphate) from ADP (adenosine diphosphate) and inorganic phosphate ($P_i$).

4. LIGHT ENERGY is also absorbed by photosystem 1, where the high-energy electrons are generated.

5. These high-energy electrons are used to reduce NADP+ to NADPH. The process is facilitated by NADP+ reductase.

6. (Takes place in the Stroma) ATP and NADPH are used in the reduction of 6 carbon dioxide ($CO_2$) molecules to form glucose. This process is known as the Calvin cycle.