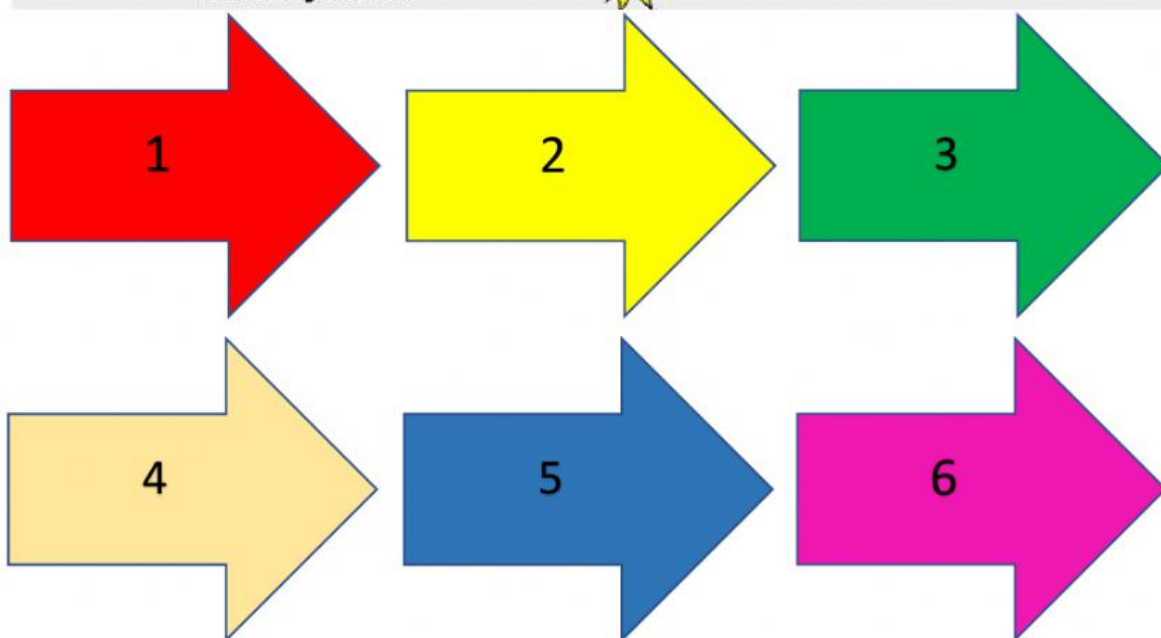
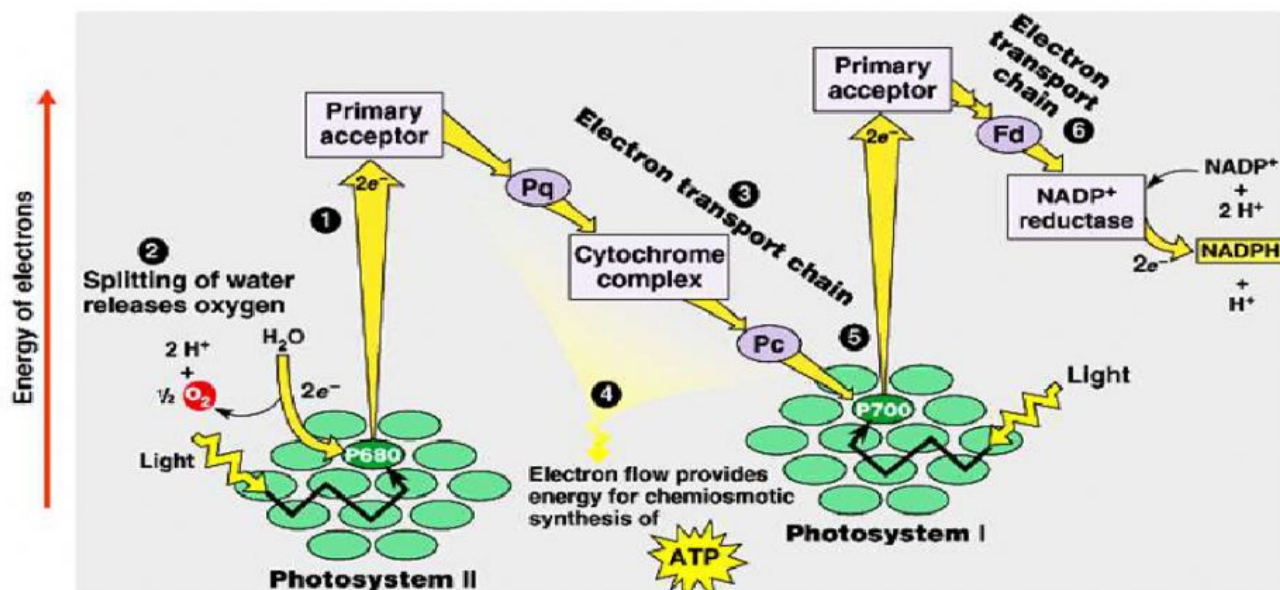


NON-CYCLIC PHOTOPHOSPHORYLATION



- Photoexcited electrons from primary electron acceptor are passed through another ETC; **Ferredoxin (Fd)**.
- Electrons are then passed to **NADP⁺**.
- **NADP⁺ reductase** will catalyze the transfer of electrons from Fd to **NADP⁺**.
- Reduction of **NADP⁺** to **NADPH + H⁺**

- **Photolysis** of water occur.
- Water molecule splits into two **hydrogen** ions and **one** oxygen atom.
- The oxygen atom will immediately combine with another oxygen atom to form an oxygen molecule

- Photoactivation also occur at **photosystem I**.
- Electron hole at photosystem I is replaced by electron from 1st ETC.

- Each photoexcited electron ($2e^-$) are passed from primary electron acceptor to PS I via electron transport chain (ETC).
- It consists of **Plastoquinone (Pq)**, **Cytochrome complex**, and **Plastocyanin (Pc)**.

- P680 undergo photoactivation.
- It releases photoexcited electrons to **primary electron** acceptor.
- Thus, creates electron deficiency in PS II

- As electron is passes through the ETC, this exergonic reaction will release energy.
- The energy released is used to form **ATP** from ADP + Pi