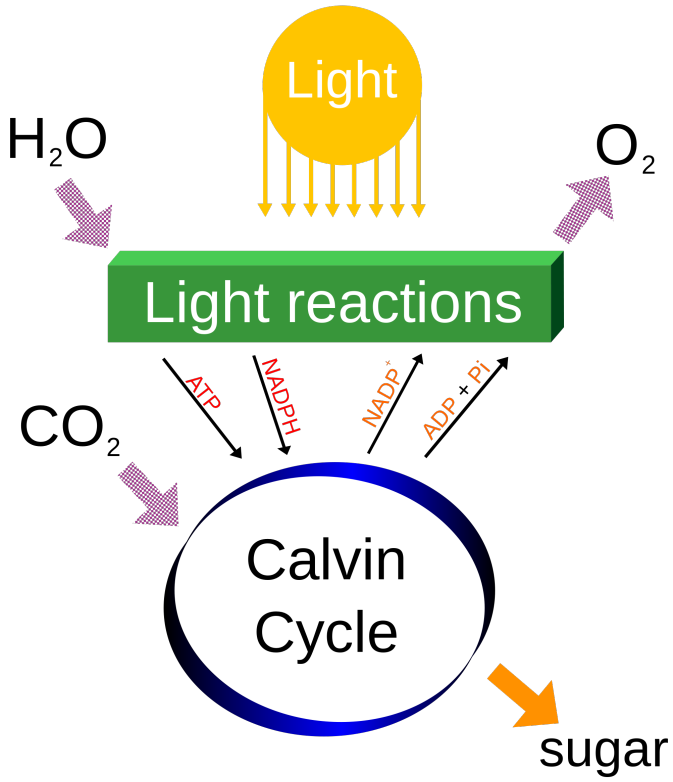
CONCEPT: OVERVIEW OF PHOTOSYNTHESIS

- Photosynthesis is the process of converting _____ energy into ATP and sugars
  - The **light dependent** reactions create ATP and NADPH
    - Undergoes **photophosphorylation** – uses an electron transport chain to drive ATP synthesis
      - Similar to oxidative phosphorylation (but the final electron donation is not given to O_2)
    - Light energy is absorbed by the photosynthetic pigment chlorophyll which is used to drive ATP synthesis
    - **Photoreduction** is the process through which the final electron is donated to $NADP^+$ creating NADPH
  - The **light independent (carbon fixation)** reactions use ATP and NADPH to create _____ from CO_2
    - Product is a 3 carbon sugar, which is the transformed into larger sugars
    - To create glucose uses: 18 ATP, 12 NADPH and converts 12 H_2O to O_2

EXAMPLE: An overview of photosynthesis



PRACTICE:

1. Which of the following is not a part of photosynthesis?
    a. Light dependent reactions
    b. Photoreduction
    c. Light independent reactions
    d. Photocycle

2. The 3-carbon sugar created during photosynthesis is generated in which of the following processes?
    a. Light independent reaction
    b. Photophosphorylation
    c. Photoreduction
    d. Light dependent reaction