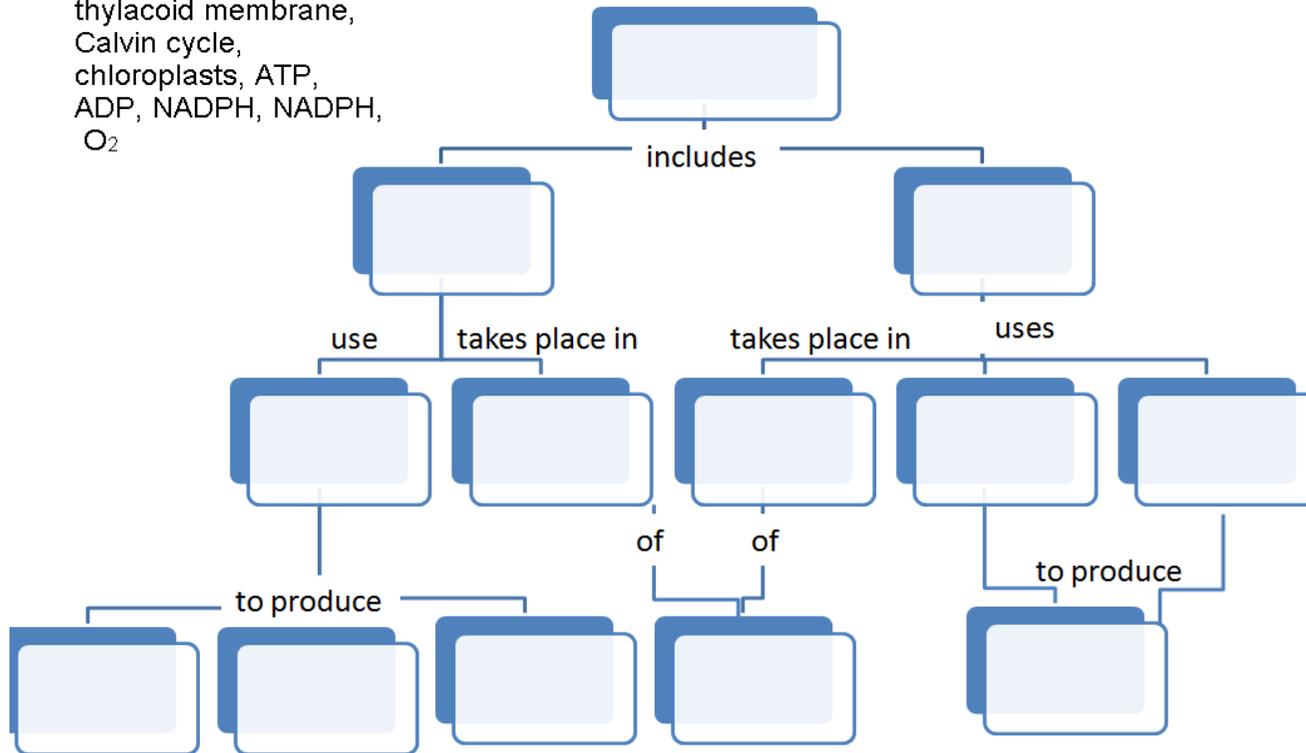


Activity 4. The processes of light-dependent and light-independent reactions

After teacher’s presentation, please fill the following concept map:

Use the following:
 Light dependant reactions,
 energy from sun light,
 stroma, sugars,
 thylacoid membrane,
 Calvin cycle,
 chloroplasts, ATP,
 ADP, NADPH, NADPH,
 O₂





1. The organic molecule produced directly by photosynthesis is:
a) lipids; b) sugar; c) amino acids; d) DNA²
2. The photosynthetic process removes ____ from the environment.
a) water; b) sugar; c) oxygen; d) chlorophyll; e) carbon dioxide
3. The process of splitting water to release hydrogens and electrons occurs during the ____ process.
a) light dependent; b) light independent; c) carbon fixation; d) carbon photophosphorylation; e) glycolysis
4. The process of fixing carbon dioxide into carbohydrates occurs in the ____ process.
a) light dependent; b) light independent; c) ATP synthesis; d) carbon photophosphorylation; e) glycolysis
5. Carbon dioxide enters the leaf through ____.
a) chloroplasts; b) stomata; c) cuticle; d) mesophyll cells; e) leaf veins
6. The cellular transport process by which carbon dioxide enters a leaf (and by which water vapour and oxygen exit) is ____.
a) osmosis; b) active transport; c. co- transport; d) diffusion; e) bulk flow
7. Which of the following creatures would not be an autotroph?
a) cactus; b) cyanobacteria; c) fish; d) palm tree; e) phytoplankton
8. The process by which most of the world's autotrophs make their food is known as:
a) glycolysis; b) photosynthesis; c) chemosynthesis; d) herbivory; e) C-4 cycle
9. The process of _____ is how ADP + P are converted into ATP during the Light dependent process.
a) glycolysis; b) Calvin Cycle; c) chemiosmosis; d) substrate-level phosphorylation; e) Kreb's Cycle
10. Many of the sun's rays may be blocked by dust or clouds formed by volcanic eruptions or pollution. What are some possible short-term effects of this on photosynthesis?

11. Construct a flowchart that illustrates the steps of photosynthesis. Begin with the energy of sunlight and end with the production of glucose. Include as much detail as possible in the numerous steps.

² The questions above are adapted from http://www.phschool.com/science/biology_place/labbench/lab4/quiz1.html