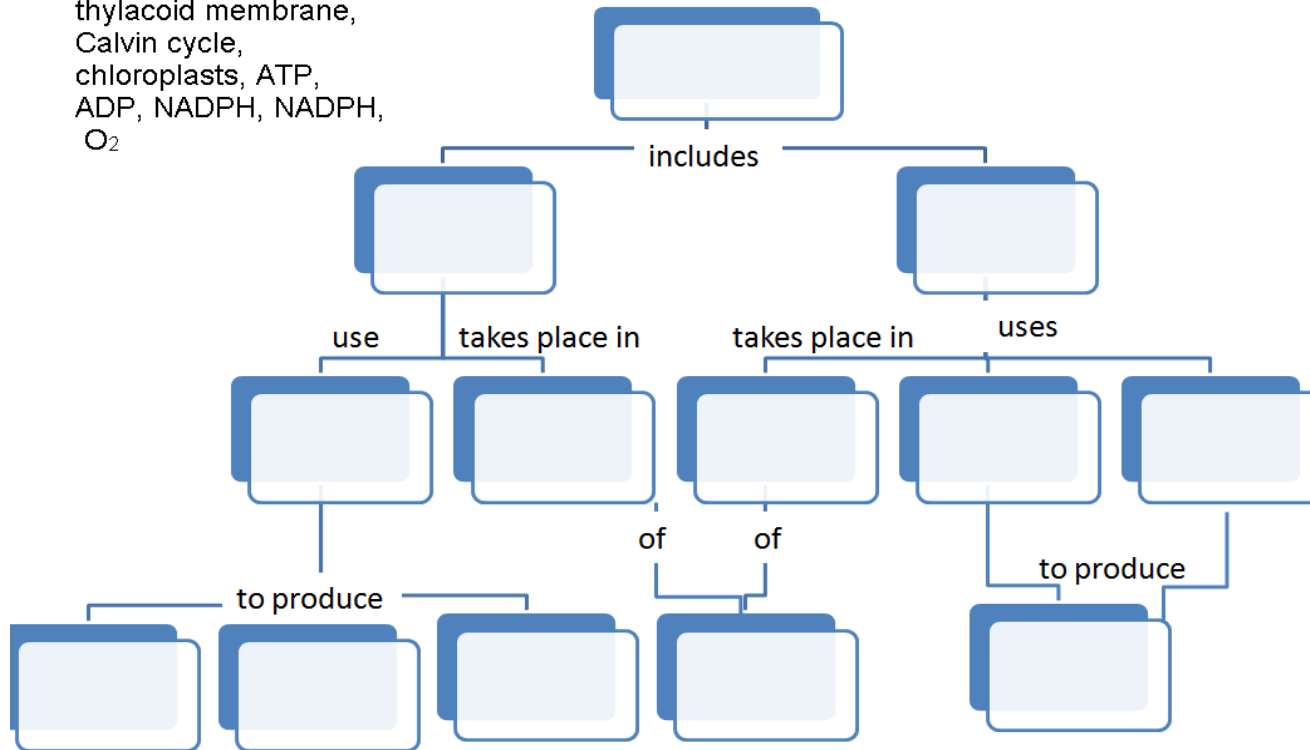


**Activity 4. The processes of light-dependent and light-independent reactions**

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,  
 O<sub>2</sub>





1. The organic molecule produced directly by photosynthesis is:  
a) lipids; b) sugar; c) amino acids; d) DNA<sup>2</sup>
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?

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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.

<sup>2</sup> The questions above are adapted from [http://www.phschool.com/science/biology\\_place/labbench/lab4/quiz1.html](http://www.phschool.com/science/biology_place/labbench/lab4/quiz1.html)