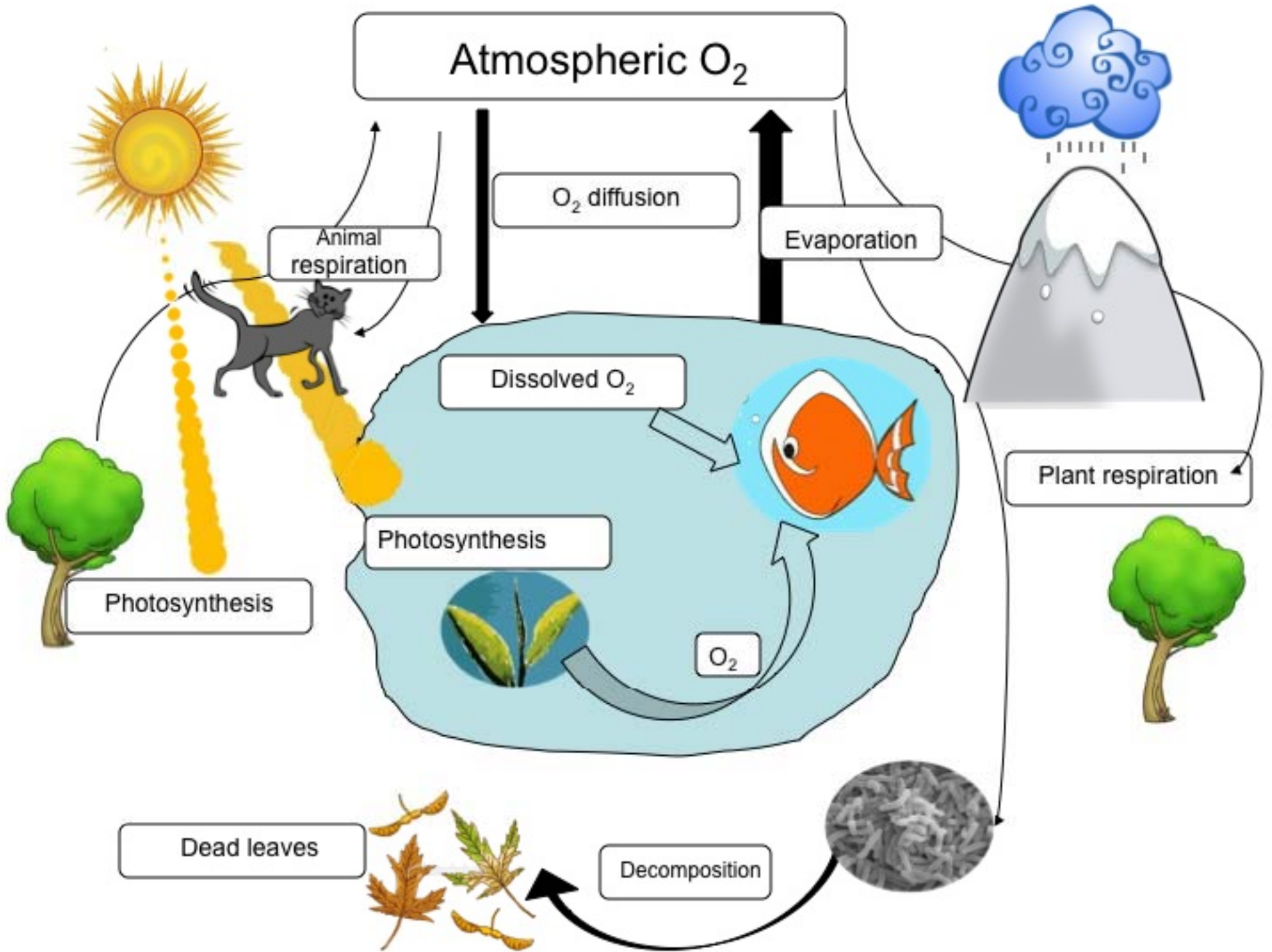
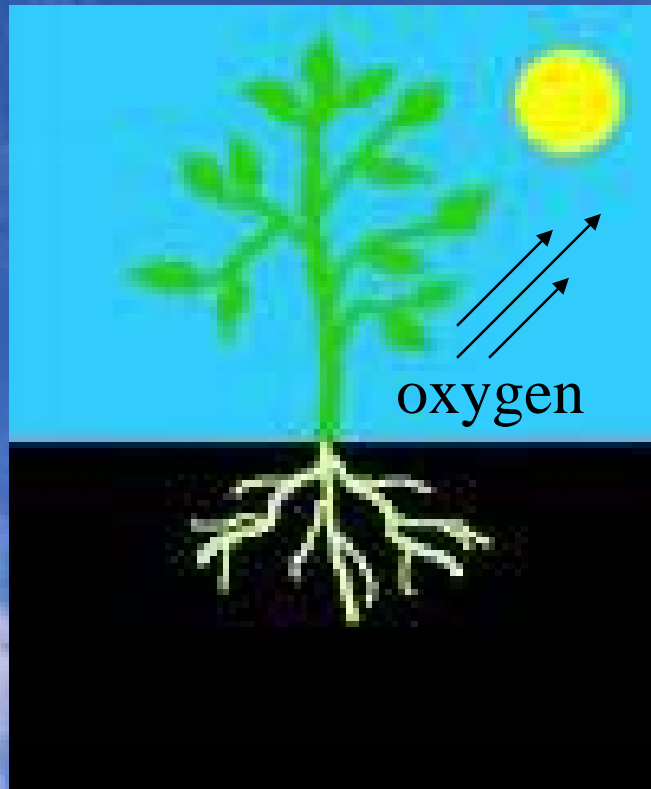


The Oxygen Cycle





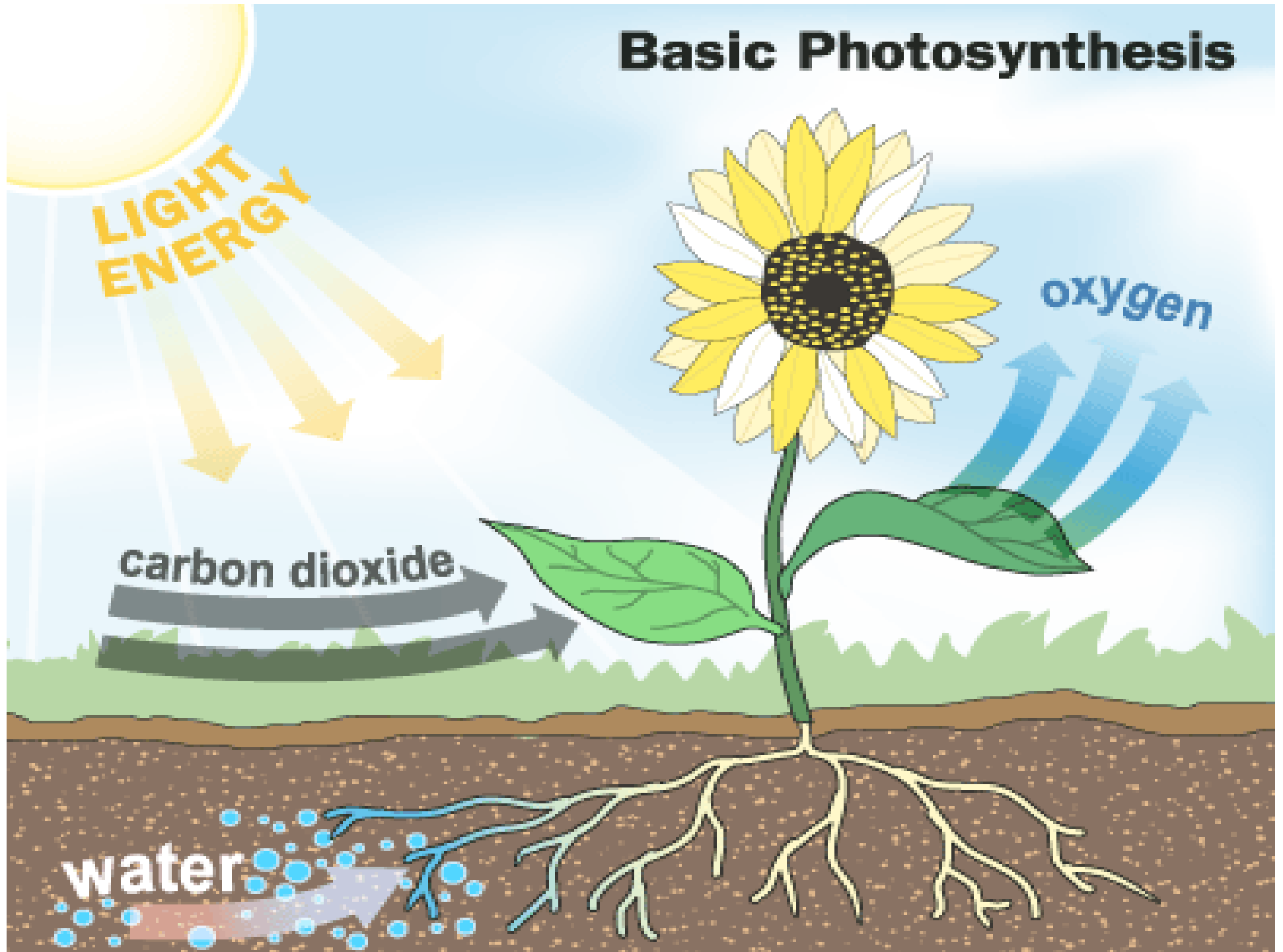




Plant release oxygen into the atmosphere as a by-product of photosynthesis.

STEP ONE OF OXYGEN CYCLE

Basic Photosynthesis



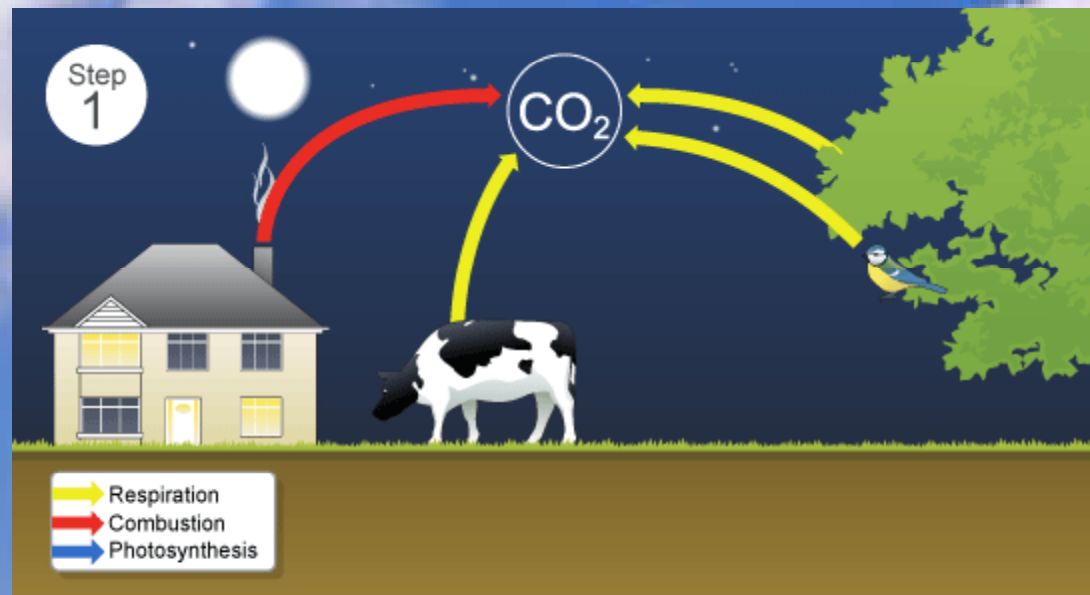


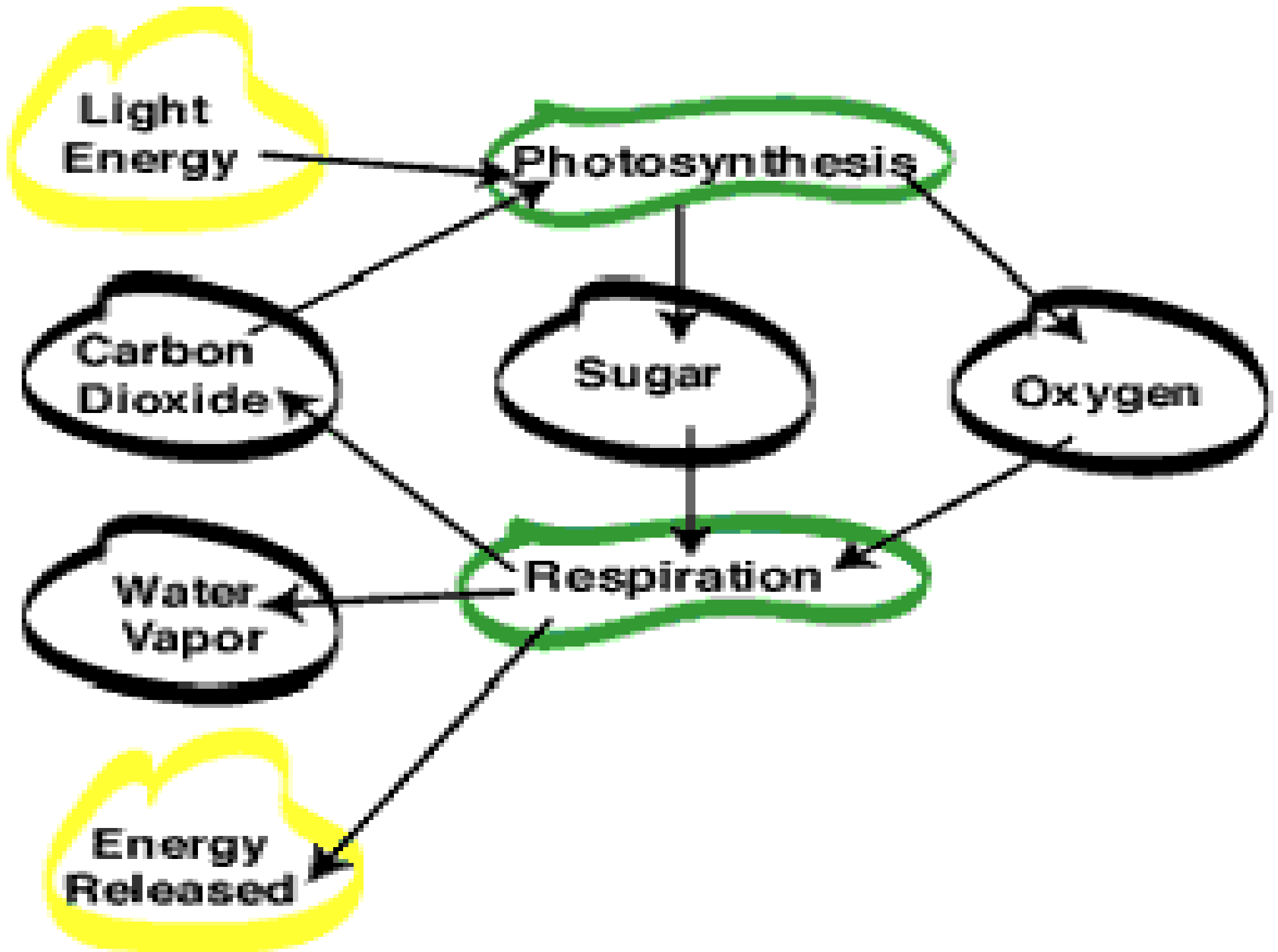
Animals take in oxygen through the process of respiration.
Animals then break down sugars and food.

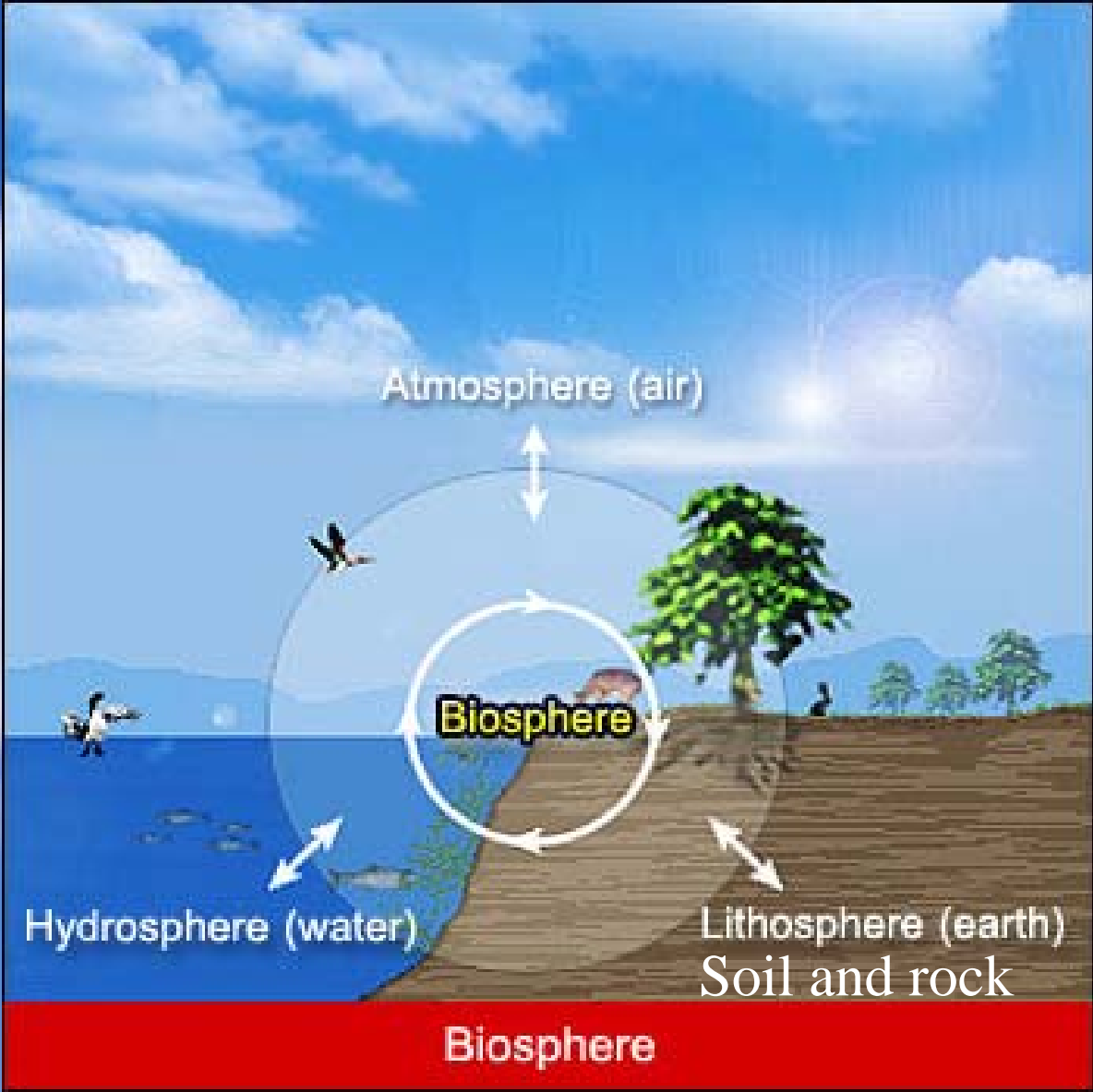
STEP TWO OF OXYGEN CYCLE

Step Three in Oxygen Cycle

- ◇ Carbon dioxide is released by animals and used in plants in photosynthesis.







Today

The Earth's atmosphere consists of:

- ◇ 21% Oxygen

The Earth's lithosphere consists of:

- ◇ 99.5% Oxygen

The Earth's hydrosphere consists of:

- ◇ 46.60% Oxygen

The Earth's biosphere consists of:

- ◇ 0.01% Oxygen



Biological Importance of Oxygen

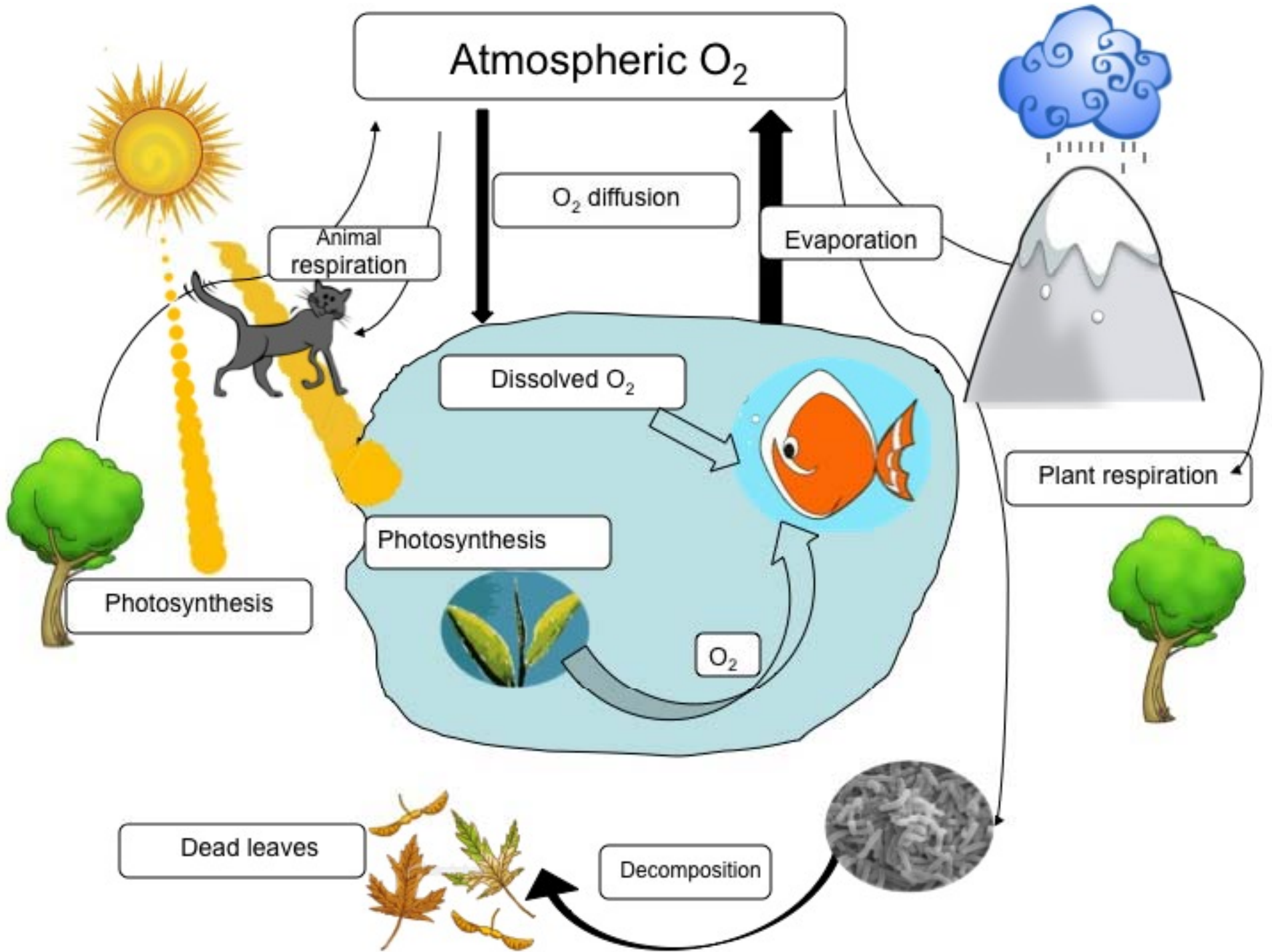
- ◇ Humans need it to breathe
- ◇ Needed for decomposition of organic waste
- ◇ Water can dissolve oxygen and it is this dissolved oxygen that supports aquatic life.

Ecological Importance of Oxygen

- ◊ Without oxygen at the bottom of the water body, anaerobic bacteria (those that live without oxygen) produce acids. These acids not only increase acidity, but also cause a massive release of phosphorus and nitrogen, two major fertilizers, from the organic sediment and into the water column.
- ◊ These same anaerobic bacteria put toxic gases in the water including hydrogen sulfide (that rotten egg smell), ammonia, carbon dioxide and methane. These gases are all toxic to fish, beneficial bacteria and insects.

Ecological Importance of Oxygen Cont.

- ◇ Lack of fish enables disease-hosting mosquitoes to thrive, as mosquitoes are natural food for fish.
- ◇ Without oxygen at the bottom at all times, beneficial bacteria and insects cannot biodegrade the organic sediment. Large accumulations of organic sediment follow.



Take home message

- Portal pond needs lots of oxygen!