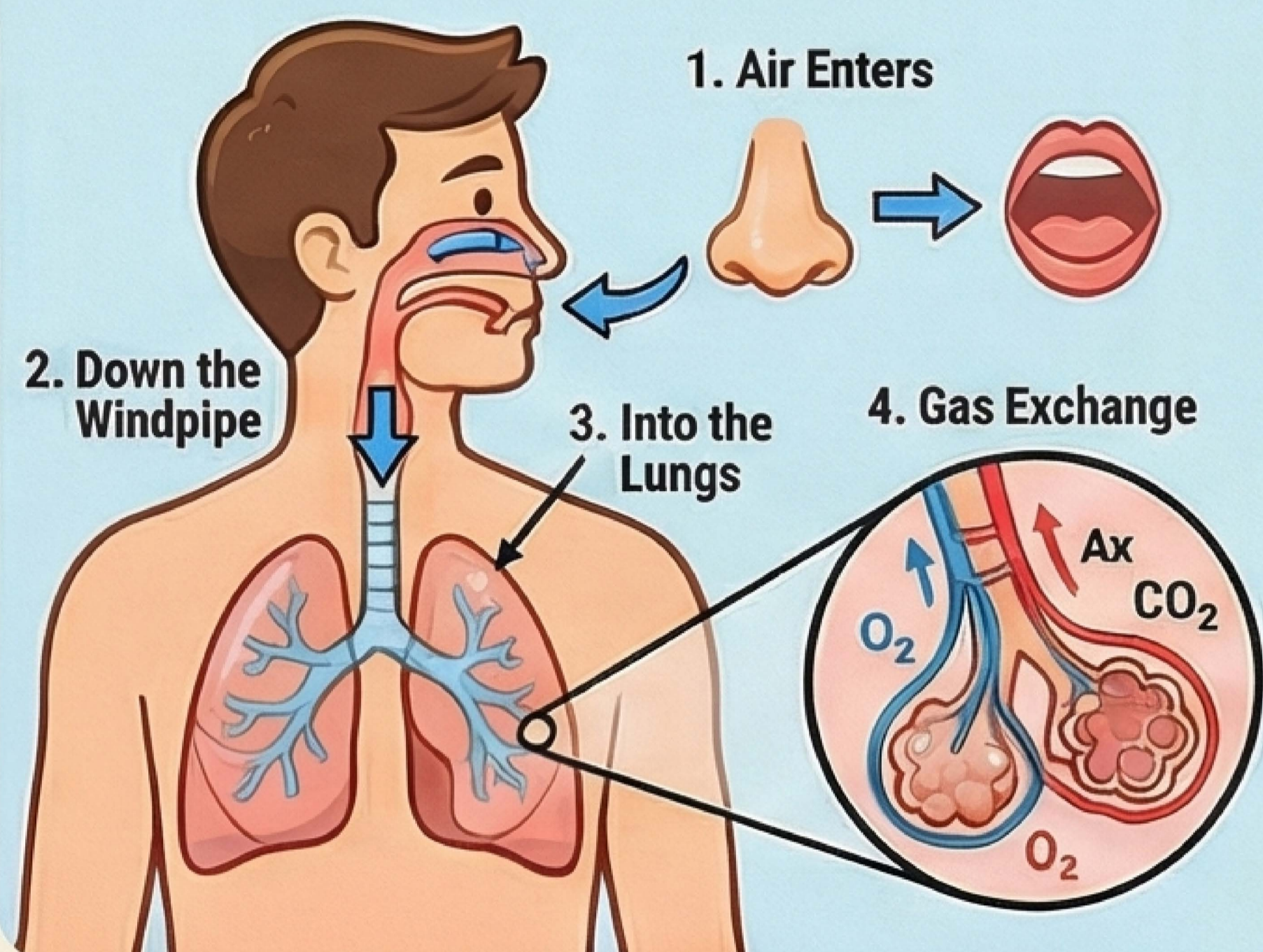


Air and Respiration: How Living Things Breathe

3. The Human Respiratory System

Breathing is the exchange of gases. It involves inhaling to take in oxygen and exhaling to remove carbon dioxide.



4. How Plants "Breathe"

Plants exchange gas through stomata.

Stomata are tiny openings, mainly on the underside of leaves, that allow gases to enter and exit the plant. Each stoma is controlled by a pair of guard cells.

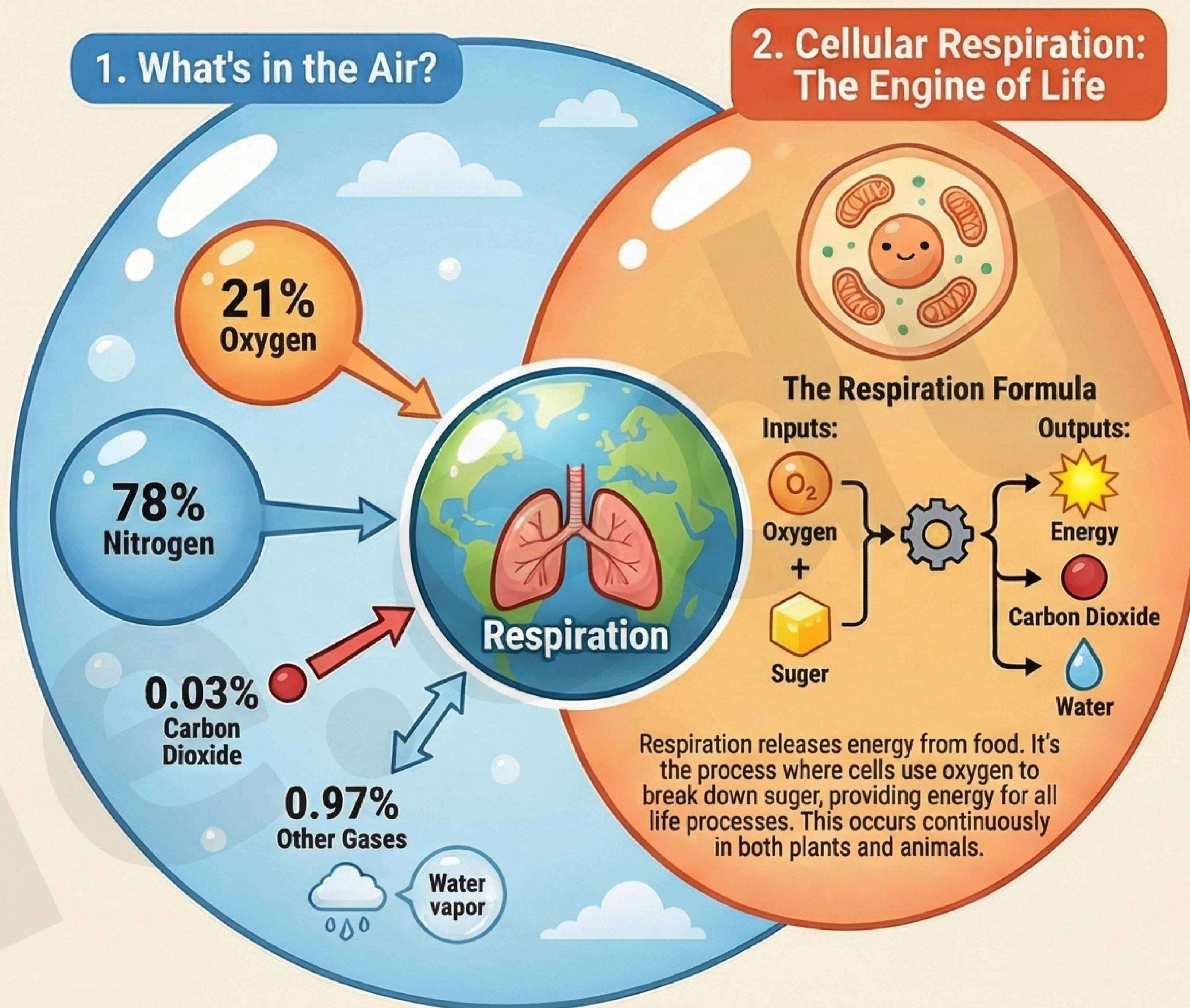


Photosynthesis (Daytime/Light):
Takes in carbon dioxide and releases oxygen to make food.

Respiration (All the Time):
Takes in oxygen and releases carbon dioxide to produce energy.

KEY FINDING: Daytime Dominance
During the day, the rate of photosynthesis in plants is higher than the rate of respiration.

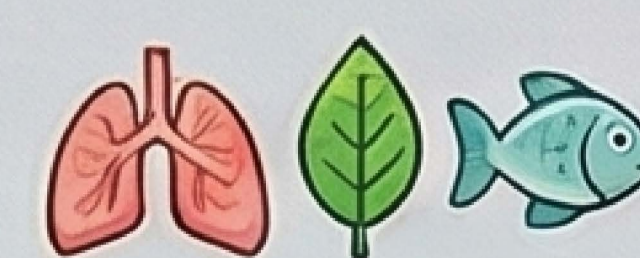
1. What's in the Air?



Air Composition:
Mixture of Nitrogen, Oxygen, CO₂, and other gases.

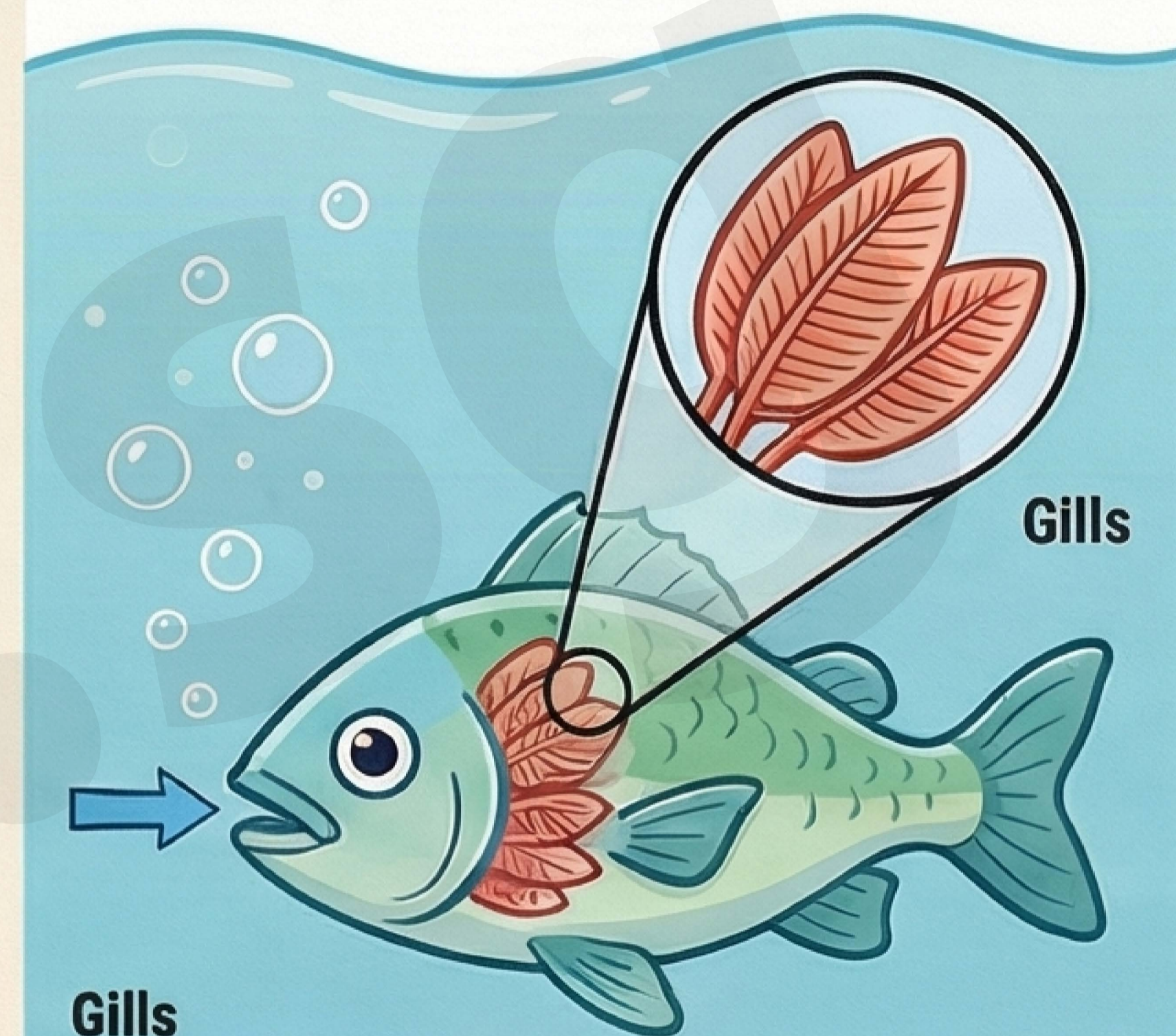


Cellular Respiration:
Continuous process releasing energy from food using oxygen.



Diverse Systems:
Humans use lungs, plants use stomata, and fish use gills for gas exchange.

5. How Fish Breathe



Gills

Fish use gills to breathe in water. Gills are feather-like structures with a rich supply of blood vessels that extract dissolved oxygen directly from the water.

The Flow of Water

One-way current of water across the gills.

