

Additional Solutions and Tests for Experiments

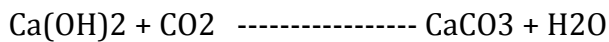
RESPIRATION experiments : for testing for the presence / production of carbon dioxide

1) **Limewater** – used to test for the presence of carbon dioxide (therefore, to show respiration in living organisms)

This is calcium hydroxide solution.

Lime – because it contains calcium. Water because it is transparent.

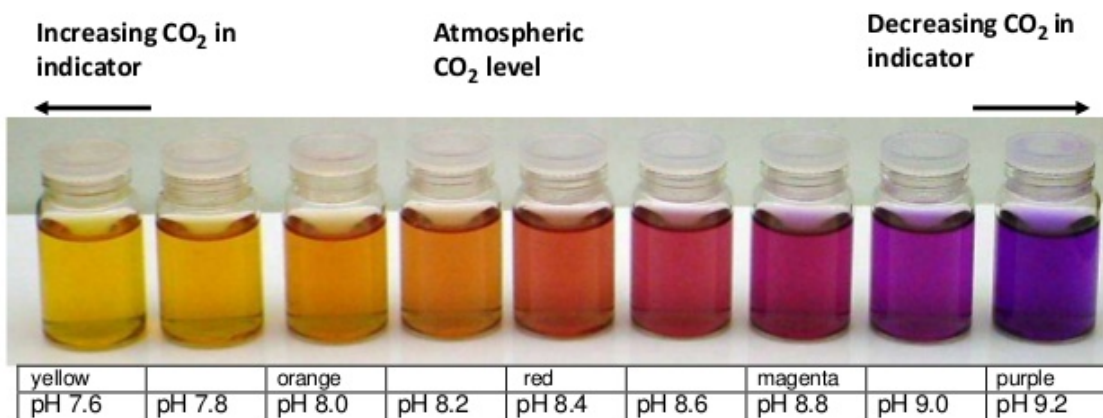
In the presence of carbon dioxide it turns cloudy, because the gas dissolves to form a white precipitate (calcium carbonate).



RESPIRATION / PHOTOSYNTHESIS experiments

2) testing for the presence (production) or absence (elimination) of Carbon dioxide:

Hydrogencarbonate Indicator



Hydrogencarbonate indicator is used to measure carbon dioxide levels.

It is red in equilibrium with atmospheric air.

It becomes more orange/yellow with increased carbon dioxide levels.

It changes from red through magenta to deep purple as carbon dioxide is removed.

PHOTOSYNTHESIS experiments:

3) **Sodalime** – used to absorb and therefore eliminate carbon dioxide (for experiments on photosynthesis)

This is a solid. It is a complex of different substances including both sodium and calcium, hence its name. One of the reactions is the same as for limewater (calcium hydroxide and carbon dioxide), therefore eliminating CO₂ from the air.

4) **Sodium Hydrogen Carbonate** (also known as sodium bicarbonate) – added to water to release carbon dioxide gas (useful for experiments on photosynthesis).