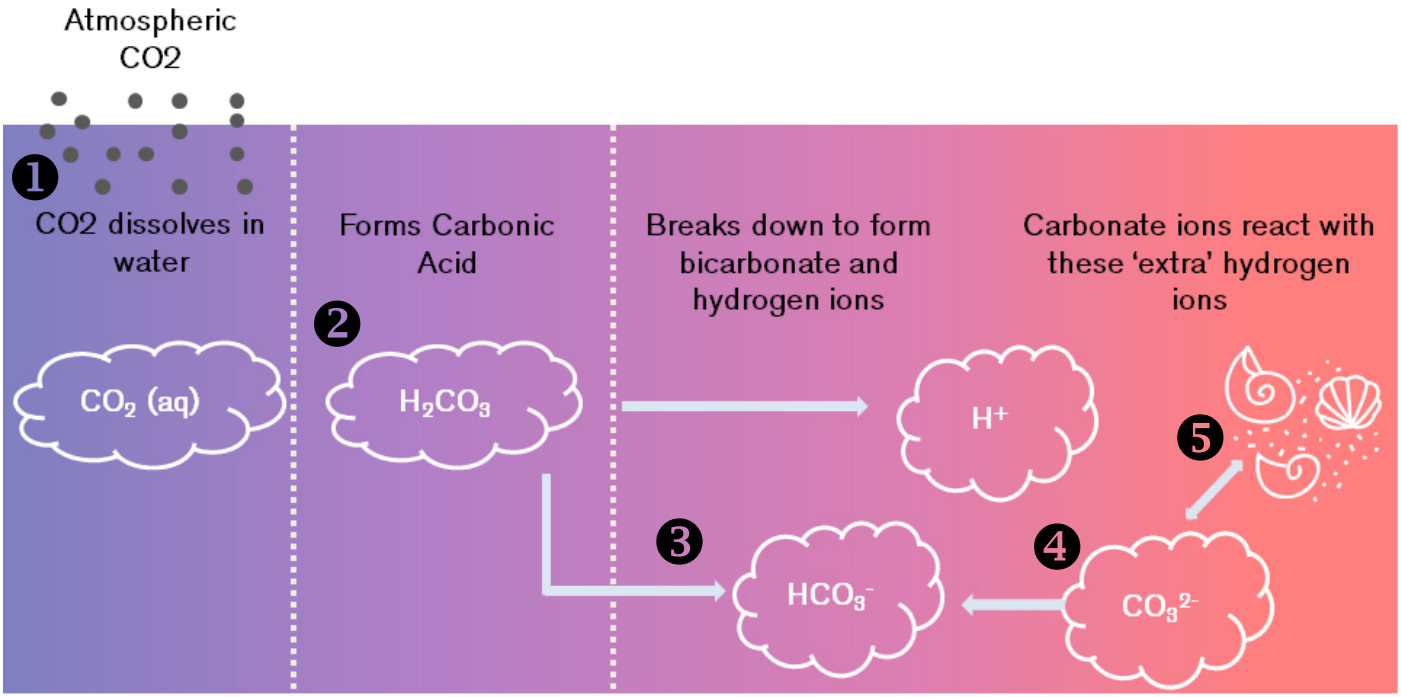
Ocean acidification process



1. Carbon dioxide in the atmosphere dissolves in the oceans.
2. This aqueous carbon dioxide reacts with the water to form carbonic acid.
3. The carbonic acid breaks down to form bicarbonate and hydrogen ions.

   The increase in hydrogen ions makes the oceans more acidic. So the more carbon dioxide that is absorbed by the oceans, the more acidic they become.
4. Carbonate ions 'buffer' this increased number of hydrogen ions by forming more bicarbonate ions.

   Carbonate ions enter the oceans through processes such as the weathering of limestone ($CaCO_3$). This buffering decreases the amount of carbonate and hydrogen ions in the oceans.

   Organisms that form their shells or skeletons from carbonate will be affected because there are fewer carbonate ions in the oceans.
5. The levels of ocean acidification may also reach a 'corrosive' level where these shells or skeletons start to dissolve to 'buffer' the ocean pH.