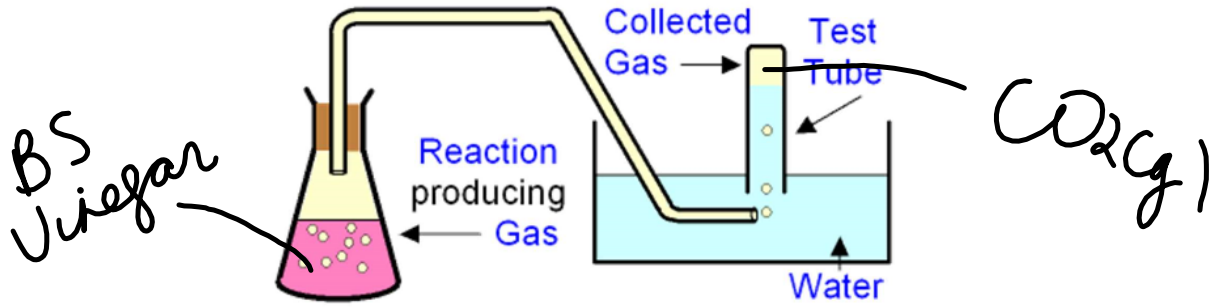
Welcome to Chemistry!

Collecting a Gas Over Water

Purpose: i) to produce a gas from a chemical reaction

ii) to test a gas for properties

Set up:



1. Mix baking soda and vinegar in an Erlenmeyer flask.
2. Collect the gas.
3. Test the gas using a) limewater
   b) a lit splint

Observations:

Chemical	Chemical Name	Description
Baking Soda (BS)	sodium hydrogen carbonate $NaHCO_3$	white solid
Vinegar	5% acetic acid	C & C
Water	water H_2O	C & C
Gas	carbon dioxide CO_2	C & C
Limewater	$Ca(OH)_2$ calcium hydroxide	C & C

CH_3COOH

Signs of Chemical Change:

i) bubbling ii) LWT = cloudy. colour change

Balanced Chemical Equation: BCE

$$NaHCO_{3(s)} + CH_3COOH_{(aq)} \rightarrow CO_{2(g)} + H_2O_{(l)} + NaCH_3COO_{(aq)}$$

Results of the 2 Tests:

Test	Result
Limewater	C + C → cloudy / milky
Lit Splint	went out

Fire Triangle:

Conclusion: The gas that was produced was CO_2 because the LWT → cloudy & let splint went out