

Name: _____ Date: _____

Exercise– Observations of Reactions Involving Acids and Bases

- 1 It is important for science students to learn to record **observations** correctly so that the scientific community has a common language and understanding.
- 2 For reactions involving acids and bases, the 4 main types of observations involve:
- (a) production of a gas
- (b) production of a solid (precipitate)
- (c) dissolving of a solid to form a solution
- (d) colour change of pH indicator
- 3 The following table gives examples of the correct observations.

Reaction	Equation	Observations
dilute hydrochloric acid + zinc carbonate	2HCl (aq) + ZnCO ₃ (s) → ZnCl ₂ (aq) + CO ₂ (g) + H ₂ O (I)	Effervescence. The solid dissolves to form a colourless solution.
dilute sulfuric acid + magnesium	H₂SO₄ (aq) + Mg (s) → MgSO₄ (aq) + H₂ (g)	Effervescence. The solid dissolves to form a colourless solution.
dilute sodium hydroxide + calcium chloride solution	2NaOH (aq) + CaCl₂ (aq) → Ca(OH)₂ (s) + 2NaCl (aq)	A white ppt is formed
dilute sodium hydroxide + iron(II) sulfate solution	2NaOH (aq) + FeSO ₄ (aq) → Fe(OH) ₂ (s) + Na ₂ SO ₄ (aq)	A green ppt is formed

Note: Students must distinguish between observations and inferences

4 Teacher Demonstration

Reaction	Observations
1. To a few pieces of marble chips (calcium carbonate) add dilute hydrochloric acid.	
2. To a small volume of zinc chloride solution add aqueous sodium hydroxide.	
Divide the mixture into 2 portions.	
(a) To one portion of the mixture add dilute hydrochloric acid.	
(b) To the other portion of the mixture add aqueous sodium hydroxide.	