

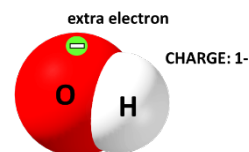
**Shedding Light on Acids and Bases Episode 3: Neutralization** Name: \_\_\_\_\_

Part A  
Part B

- Carbonates, like bi-carb soda, are examples of \_\_\_\_\_.
- Write the chemical formulas of the following bases.

Bases	
Chemical Name	Chemical Formula
sodium hydroxide	
lithium hydroxide	
calcium hydroxide	
sodium hydrogen carbonate	

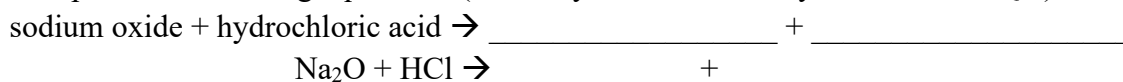
- Write the chemical equation for the reaction between hydrochloric acid and sodium hydroxide.  
in words: \_\_\_\_\_  
in symbols: \_\_\_\_\_
- Write (in words) the general equation for the reaction between any acid and any base.  
\_\_\_\_\_
- Reactions between acids and bases are called neutralization reactions, but if you mix an acid and a base the resulting solution may still be acidic or basic. Why? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- All bases either contain hydroxide ions or they chemical react with \_\_\_\_\_ to produce hydroxide ions.
- What is a hydroxide ion?



- If sodium hydrogen carbonate dissolves in water, small amounts of hydroxide ions are produced. Write the chemical equation (in symbols).  
\_\_\_\_\_
- Hydroxide ions are also produced if a metal oxide dissolves in water. Complete the following equations:  
in words: sodium oxide + water → \_\_\_\_\_  
in symbols: \_\_\_\_\_  
in words: \_\_\_\_\_ + water → lithium hydroxide (Hint: Li and Na react in a similar way)  
in symbols: \_\_\_\_\_ + \_\_\_\_\_ → LiOH

10. APPLICATION QUESTION.

Complete the following equations. (You may want to re-read your answer to Q4.)



Part C

- Litmus paper is an “indicator”. Describe how litmus paper can be used to safely tell the difference between an acid and a base. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- Why is universal indicator a more useful indicator than litmus? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_