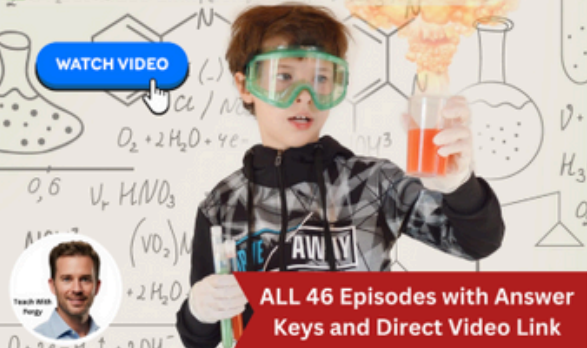


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Crash Course Chemistry #31: Buffers, the Acid Rain Slayer

Name: _____ Date: _____

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1. Acid rain forms when sulfur dioxide reacts with water in the air to form _____.
2. A solution that resists changes in pH when a strong acid or base is added is called a _____.
3. The buffering agent in the Clark Fork River is _____, which dissolves to form carbonate ions.
4. A buffer solution is typically made from a weak acid and its _____ base.
5. Weak acids only _____ dissociate in water, which allows them to function effectively as buffers.
6. In a RICE table, the letter "R" stands for the _____ of the reaction.
7. The symbol K_a refers to the _____ constant for a weak acid.
8. The pH of a solution can be estimated by knowing the concentration of _____ ions.
9. When hydrochloric acid is added to a buffered solution, the hydrogen ions react with _____ ions to form acetic acid.
10. The point at which a buffer can no longer resist changes in pH is called its _____.
11. _____ is the process used in labs to determine the buffering capacity of a solution by gradually adding acid or base.
12. The point at which a pH indicator changes color is called the _____.
13. In the Clark Fork River, calcium carbonate reacts with protons to form calcium and _____ ions.
14. Bicarbonate ions can gain a proton to form _____ acid.
15. In the lab experiment, the amount of sulfuric acid added was measured using a _____.

Crash Course Chemistry #31: Buffers, the Acid Rain Slayer KEY

1. Acid rain forms when sulfur dioxide reacts with water in the air to form **sulfuric acid**.
2. A solution that resists changes in pH when a strong acid or base is added is called a **buffer**.
3. The buffering agent in the Clark Fork River is **limestone**, which dissolves to form carbonate ions.
4. A buffer solution is typically made from a weak acid and its **conjugate** base.
5. Weak acids only **partially** dissociate in water, which allows them to function effectively as buffers.
6. In a RICE table, the letter "R" stands for the **reaction** of the reaction.
7. The symbol K_a refers to the **dissociation** constant for a weak acid.
8. The pH of a solution can be estimated by knowing the concentration of **hydrogen** ions.
9. When hydrochloric acid is added to a buffered solution, the hydrogen ions react with **acetate** ions to form acetic acid.
10. The point at which a buffer can no longer resist changes in pH is called its **buffering capacity**.
11. **Titration** is the process used in labs to determine the buffering capacity of a solution by gradually adding acid or base.
12. The point at which a pH indicator changes color is called the **end point**.
13. In the Clark Fork River, calcium carbonate reacts with protons to form calcium and **bicarbonate** ions.
14. Bicarbonate ions can gain a proton to form **carbonic** acid.
15. In the lab experiment, the amount of sulfuric acid added was measured using a **burette**.

15 Questions

Answer Key Included

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