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Acid and Bases Lab

## *Acid and Bases*

### **Introduction:**

Acids and bases are both compounds, acids contain hydrogen and bases can “accept” positive hydrogen ions. Both are usually at room temperature. Acids are solid and taste sour, while bases are usually liquid and sometimes solid. Bases also have a bitter taste to them. These compounds are measured by the PH scale. Acidic solutions contain high concentrations of  $H^+$ , while bases contain low concentrations. Acids have a 7 or less on the PH scale, bases have a 7 or higher

### **Research Questions:**

Do all indicators work in the same way? Are indicators infinitely precise?

### **Supplies:**

- Vinegar
- Bleach
- Ammonia
- Orange Juice
- Lemon Juice
- Milk Of Magnesium
- Litmus paper
- PH Strip
- Gold Rod Paper
- Phenolphthalein
- Bogen Universal

## Observations:



DATA/OBSERVATIONS FOR DISTINGUISHING BETWEEN ACIDS & BASES  
VIA VARIOUS INDICATORS

Substance	Litmus Paper (R or B)	PH Strip- Indicate Color & #	Golden Rod Paper (Y or N for color change)	Phenolphthalein (Y or N for color change)	Bogen Universal Indicator Color	Acid or Base
Vinegar	Red	Orange 4	NO	NO	Cherry Red	Acid
Bleach	Blue	Yellow 5	YES	YES	Pinky Yellow	Base
Ammonia	Blue	Green 7	YES	YES	Green Yellow	Base
Orange Juice	Red	Yellow 5	NO	NO	Blood Red	Acid
Lemon Juice	Red	Orange 4	NO	NO	Dark Red	Acid
MOM	Blue	Green 7	YES	YES	Army Green	Base



## Conclusion:

Every single indicator does not work the same way. Some indicators vary in the way their colors change. Either the color changes or it will experience one or two color changes. Now, these indicators will not be precise, they are estimates.

## Vocabulary:

- Acid - A chemical that gives off hydrogen ions in water and forms salts by combining with certain metals.
- Base - A substance that can “accept” hydrogen ions in water and neutralize acid.
- Indicator - Any substance that gives a visible sign, usually by a color change, of the presence or absence of a threshold concentration of a chemical species, such as an acid or an alkali in a solution.
- PH - A measure of how acidic or basic a substance or solution is.