

# Acids & Bases

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*They are everywhere..*

*In your food*

*In your house*

***EVEN IN YOU!!!!***

# Acids and Bases

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- **WALT: Describe some properties of acids and bases and identify some common acids and bases**
- I must be able to state at least one property of an acid and one property of a base
- I should be able to use the pH scale to identify some acids and bases

# What is an acid?

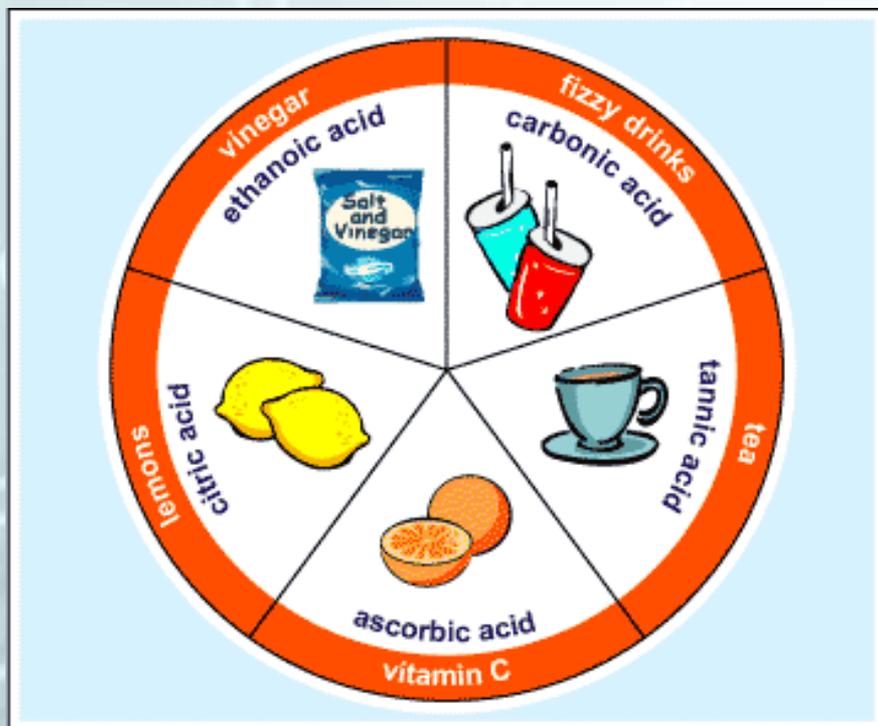
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- An acid is a solution that has an excess of  $H^+$  ions. It comes from the Latin word *acidus* that means "sharp" or "sour".
- The more  $H^+$  ions, the more acidic the solution.



# Properties of an Acid

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- Tastes Sour
- Conduct Electricity
- Corrosive, which means they break down certain substances. Many acids can corrode fabric, skin, and paper
- Some acids react strongly with metals
- Turns blue litmus paper red

Picture from BBC Revision Bites

[http://www.bbc.co.uk/schools/ks3bitesize/science/chemistry/acids\\_bases\\_1.shtml](http://www.bbc.co.uk/schools/ks3bitesize/science/chemistry/acids_bases_1.shtml)

# Uses of Acids

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Acids

- Acetic Acid = Vinegar
- Citric Acid = lemons, limes, & oranges. It is in many sour candies such as lemonhead & sour patch.
- Ascorbic acid = Vitamin C which your body needs to function.
- Sulfuric acid is used in the production of fertilizers, steel, paints, and plastics.
- Car batteries

# What is a base?

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- A base is a solution that has an excess of  $\text{OH}^-$  ions.
- Another word for base is alkali.
- **Bases** are substances that can accept hydrogen ions

# The difference between an alkali and a base

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- Bases are called alkalis if they are soluble (can dissolve)
- All alkalis are bases

# Properties of a Base

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**Bases**

- Feel Slippery
  - Taste Bitter
  - Corrosive
  - Can conduct electricity.
- Think about alkaline batteries
- Do not react with metals.
  - Turns red litmus paper blue.

# Uses of Bases

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- Bases give soaps, ammonia, and many other cleaning products some of their useful properties.
- The  $\text{OH}^-$  ions interact strongly with certain substances, such as dirt and grease.
- Chalk and oven cleaner are examples of familiar products that contain bases.
- Your blood is a basic solution.



# pH Scale

- **pH** is a measure of how acidic or basic a solution is.
- The pH scale ranges from 0 to 14.
- Acidic solutions have pH values below 7
- A solution with a pH of 0 is very acidic.
- A solution with a pH of 7 is neutral.
- Pure water has a pH of 7.
- Basic solutions have pH values above 7.

# Now you are going to test some common substances using **UNIVERSAL INDICATOR**

1. Turn to page 179.
  1. Put some of each liquid you will test into a test tube
  2. Add 3-5 drops of universal indicator
  3. Shake, and compare the colour to the pH scale
2. Write up your results in a table: what will your columns be?

# Plenary

- Think, pair and share.....
  - Write down 3 facts you've learnt today.
  - Share these with your neighbour and add their ideas to your list
  - Share these with one other person and add more to your list