

Teach a parent: Today's concept :

Teach your parents about the differences between: acids, bases, salts and indicators. Help your parent become an expert ! Be sure they write what they have learned from your teaching

Parent Response

1. _____ I'm not sure my child really understands, therefore, I don't either.
Please work with him/her and let's try again.
2. _____ The concept was explained thoroughly with effective examples he/she created.
"By golly, I think they've got it!"
3. _____ WOW! My child did an exceptional job! It was logically explained, therefore I caught on immediately and feel confident about teaching it to others.

Parent Signature: _____ Date: _____

Mom or Dad Comments: Please explain how your student taught you this concept and * what you learned in 3-5 sentences! * This is critical for them to receive full points

I will have this link on the web page, OR your can go on line . WATCH the Video!
http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/acids_bases_metals/activity/

Acids and bases and metals - Test

1. Which of these acids is most likely to be dangerous? citric carbonic hydrochloric
2. Which statement about bases is true?
they are all alkalis they can neutralize acids they are all soluble
3. Which statement about alkalis is true?
they are all bases they cannot neutralise acids they are all insoluble
4. What happens to litmus paper in acidic solutions?
red litmus turns blue blue litmus turns red yellow litmus turns green
5. Universal indicator solution is usually green to begin with. What does this mean? It is:
acidic alkaline neutral
6. A liquid has a pH of 7.5 - what does this mean? It is: weakly acidic weakly alkaline neutral
7. A liquid has a pH of 1 - what does this mean?
it must be sodium hydroxide solution it is strongly acidic it is weakly acidic
8. What products are formed when a metal oxide reacts with an acid?
a salt only a salt and water a salt, water and carbon dioxide
9. What products are formed when a metal carbonate reacts with an acid?
a salt only a salt and water a salt, water and carbon dioxide
10. Farmers use lime to neutralize their soils. What sort of substance is lime?
a base an acid a sharp tasting drink
11. Which acid could be used to make ammonium nitrate (a type of fertilizer)?
hydrochloric sulfuric nitric
12. Which salt is made when copper oxide and sulfuric acid react together?
Copper: sulfate sulfuroxide sulfide
13. Which gas is produced when magnesium reacts with hydrochloric acid?
carbon dioxide oxygen hydrogen

Chp16

Science number

Chemical Compounds

Acids, Bases & Neutrals

Draw, color and label a pH scale

Write examples of what are found in the main sections

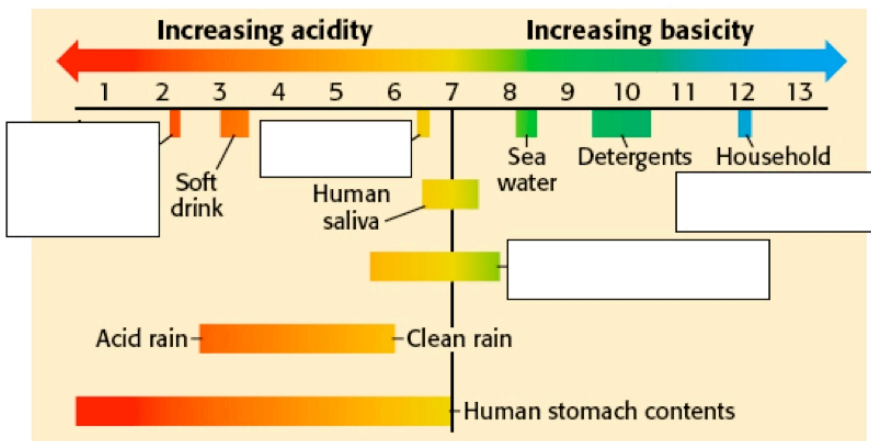
pH	color	What is it?	examples
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

Name: _____ pd _____

Parent Signature: _____

	Acids (page 401 & 402)	Bases (page 403 & 404)
Definition	1.	2.
Properties (#3 & 4)	3. <ul style="list-style-type: none"> Taste _____ Corrosive React with some metals to produce _____ gas Increase the # of hydrogen ions, _____, in a solution. In a water solution, the hydrogen ions strongly attract water molecules. Each hydrogen ion attaches to a water molecule to form a _____ ion, _____. 	4. <ul style="list-style-type: none"> Taste _____ Feel _____ Corrosive Increase the # of hydroxide ions, _____, in a solution. A hydroxide ion is actually a hydrogen atom & an oxygen atom bonded together. An extra _____ gives the ion a negative charge.
Indicators	5. Turns blue litmus paper _____	6. Turns red litmus paper _____
Uses (#7 & 8)	1. 2. 3.	1. 2. 3.
Strong (#9 & 10)	1. 2. 3.	1. 2. 3.
Weak (#11 & 12)	1. 2. 3.	1. 2. 3.

Color the pH scale with red, yellow green blue (using pg 404) and fill in the boxes



A salt is an ionic compound formed from the positive ion of a _____
& the negative ion of an _____.



PH SCALE

1 Which of these substances is acidic?



2 What is the most likely pH of a tube of toothpaste?

- A 3
- B 5
- C 7
- D 9

3 How is a standard hydrogen atom different from a hydrogen ion?

- A A hydrogen ion has an extra electron
- B A hydrogen ion is missing an electron
- C A hydrogen ion has an extra proton
- D A hydrogen ion is missing a proton

4 What might happen if you mixed a strong acid with an equally strong base?

- A You would see an explosive chemical reaction
- B The acid would destroy the base
- C The base would destroy the acid
- D You'd wind up with a pH-neutral substance

5 An extremely strong base would have a pH of:

- A 1
- B 7
- C 9
- D 14

6 What might happen if buffers did not exist within the human body?

- A Our blood and other bodily fluids might become too acidic or basic
- B Our stomach acid would not be able to break down food
- C We would not be able to process glucose within our cells
- D We would not be able to inhale oxygen into our lungs

7 This piece of pH paper has been dipped into:



- A An acid
- B A base
- C A pH-neutral substance
- D A buffer

8 Why do metals dissolve when you dip them in acid?



- A The buffers in the metal are eaten away by the acid
- B The electrons in the metal are stripped away by hydrogen ions
- C The hydrogen ions in the acid react with the hydroxyl ions in metal
- D The acid reacts with the basic metal to form carbon dioxide gas and salt

9 What might happen if acidic chemicals were emitted into the air by factories? Choose the best answer.

- A The acid would destroy metallic elements in the air
- B The acid would be neutralized by bases within clouds
- C Acid rain might destroy ecosystems and farmland
- D Violent chemical reactions would take place within the atmosphere

10 Healthy environments for life have a pH closest to:

- A 1
- B 3
- C 7
- D 10

Additional Notes: _____

ACIDS AND BASES

1 Which of the following substances is acidic?



2 What happens immediately after you dissolve acid in water?

- A Positively charged hydrogen atoms are released
- B Hydronium ions are released
- C Negatively charged hydrogen atoms are released
- D Neutrally charged hydrogen atoms are released

3 Acids are caustic to the touch. In this context, what does "caustic" mean?

- A Stinging or burning
- B Pleasant
- C Sarcastic
- D Gentle

4 A hydronium ion is like a(n) _____ molecule with an extra hydrogen atom.

- A Acid
- B Base
- C Water
- D Vinegar

5 What substance would do the best job of cleaning pots and pans?

- A A substance with a pH of 7
- B A substance with a pH of 2
- C A substance with a pH of 8
- D A substance with a pH of 13

6 What is a property of bases?

- A Slippery touch
- B Sour taste
- C Ability to dissolve metal
- D Ability to form hydronium ions

7 How do acidic solutions taste?

- A Delicious
- B Sweet
- C Bitter
- D Sour

8 Which of the following substances is basic?

- A Apple juice
- B Ginger ale
- C Baking soda
- D Distilled water

9 pH stands for:

- A Potency of hydrogen
- B Plurality of hydrogen
- C Potential of hydrogen
- D Pleurisy of hydrogen

10 What do acids and bases have in common?

- A They both eat away at metal
- B They can both conduct electricity
- C They both have a sour taste
- D They both form positively charged ions when dissolved in water

A Simple Solution

Complete this worksheet after you finish reading Chapter 16, Section 2.

Libby Lidmis has been busy gathering information on acids, bases, and salts. Unfortunately, someone mixed up the information on her chart. Each of the pieces of information given below describes an acid, a base, or a salt. Help Libby straighten out her chart by matching each piece of information with the correct categories, and writing it in the appropriate box on the next page. Be careful—some of the pieces of information belong in more than one category. Write the letters in the box.

- | | |
|---|---|
| A taste bitter | L form from a neutralization reaction |
| B may be corrosive | M change red litmus to blue |
| C used to de-ice roads | N sodium chloride |
| D excess hydroxide ions | O found in vinegar |
| E found in drain cleaner | P taste sour |
| F found in plasterboard | Q neutralize lakes with low pH |
| G react with baking soda to produce carbon dioxide gas | R OH ⁻ |
| H change blue litmus to red | S excess hydronium ions |
| I pH less than 7 | T pH greater than 7 |
| J used to make soap | U slippery |
| K H ⁺ | V found in orange juice |
| | W form from the reaction of a metal and a nonmetal |

Write the correct letters into the "acids/bases or salts boxes. DO NOT scratch out the letters or info above, as you are going to need this info!

ACIDS	
BASES	
SALTS	

Additional Notes: _____

Section 2: Acids, Bases & Salts

- An _____ is any compound that _____ the number of _____ ions when dissolved in water, and whose solution tastes _____ and can change the _____ of certain compounds.
- Why should you never use taste to identify an unknown chemical?

- Solutions of acids conduct an electric current because acids break apart to form ions in water. Acids increase the number of _____ in a solution.
- What is an indicator? _____

- True or False:** Acids turns blue litmus paper blue.
- True or False:** A base turns red litmus paper blue.
- Choose the acid in Column B that best matches each use in Column A.

Column A	Column B
___ treating heartburn	a. ammonia
___ unclogging drains & making soap	b. calcium hydroxide
___ making cement	c. sodium hydroxide
___ household cleaning	d. magnesium hydroxide

- Which of the following are weak acids? Circle your answers
sulfuric acid carbonic acid phosphoric acid citric acid
nitric acid hydrochloric acid
- A _____ is any compound that _____ the number of _____ ions when dissolved in water, and whose solution tastes _____, feels _____, and can change the color of certain compounds.
- Why do people take antacid tablets if they have heartburn?

- Acids & bases _____ one another because the H^+ of the acid and OH^- of a base react to form _____. Other ions from the acid and base are also dissolved in the water. If the water is evaporated, these ions join to form a compound called a _____.
- What is the pH scale?

- Copy figure 13, the pH scale, in the space below.
- Name one way to measure pH.

Salts can be produced by 3 types of reactions. List the 3 reactions shown in Fig 16.

- _____
- _____
- _____

Additional Notes Space