

Google PhET Acid Base html5

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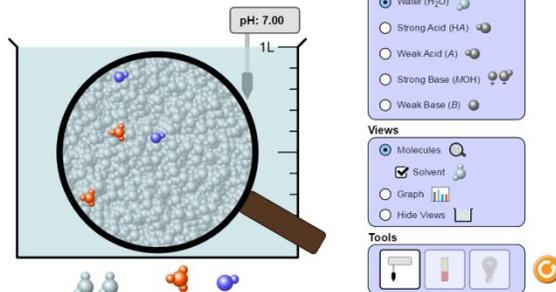
Acid-Base Solutions 1.2.4 - PhET
<https://phet.colorado.edu/.../acid-base.../acid...> University of Colorado Boulder
 m. Acid-Base Solutions Introduction My Solution . Acid-Base Solutions Introduction My Solution.



Part 1 Directions: Choose "Introduction"

Drag the pH meter in the solution.

Click "solvent" Solvent



1. Circle the species that has the most copies in the magnifying glass.

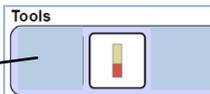


Solvent

2. Uncheck the solvent box. Fill in the magnifying glasses, reaction equations and pH's, ions for each box with the given radio buttons clicked:

<input checked="" type="radio"/> Strong Acid (HA)	<p>pH: _____</p> <p>Draw most abundant species:</p> <p>Reaction Equation here:</p>	<input checked="" type="radio"/> Weak Acid (A)	<p>pH: _____</p> <p>Draw most abundant species:</p> <p>Reaction Equation here:</p>
<input checked="" type="radio"/> Strong Base (MOH)	<p>pH: _____</p> <p>Draw most abundant species:</p> <p>Reaction Equation here:</p>	<input checked="" type="radio"/> Weak Base (B)	<p>pH: _____</p> <p>Draw most abundant species:</p> <p>Reaction Equation here:</p>

Put the litmus paper in solution:



Use the litmus to put water, strong acid, weak acid, strong base and weak base in the appropriate boxes, below: For example, Dove soap is a weak acid (pH6) and Ivory soap is a weak base (pH10).

What is the color key for litmus? (fill in last 2 boxes)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
											Orange to yellow	Yellow to blue-green		

pH Color Key

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

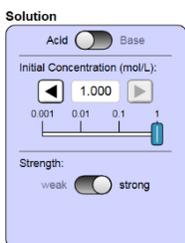
Dove

Ivory

pH Color Key

Part 2 – Select “My Solution”

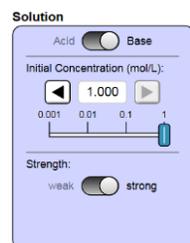
Set solution to a strong acid. Put the pH meter in the solution. Move the



slider to each concentration in the table. Record the pH in the table.

Concentration	pH meter
0.001	
0.01	
0.1	
1.0	

Set solution to a strong base. Put the pH meter in the solution. Move the slider to each concentration in the table. Record the pH in the table.



Concentration	pH meter
0.001	
0.01	
0.1	
1.0	

Describe in one or two sentences what happens to the pH meter readings as concentration changes tenfold (like in the left-hand columns, above):

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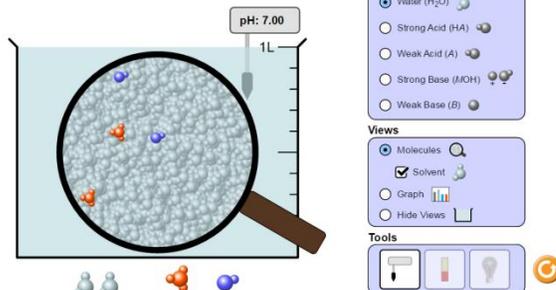
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 m. Acid-Base Solutions Introduction My Solution : Acid-Base Solutions Introduction My Solution.



Part 1 Directions: Choose "Introduction"

Drag the pH meter in the solution.

Click "solvent" Solvent



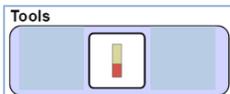
1. Circle the species that has the most copies in the magnifying glass.



2. Fill in the magnifying glasses, reaction equations and pH's, ions for each box with the given radio buttons clicked:

<p><input checked="" type="radio"/> Strong Acid (HA)</p> <p>Draw most abundant species:</p> <p>H_3O^+</p> <p>Reaction Equation: $HA + H_2O \rightarrow A^- + H_3O^+$</p>	<p><input checked="" type="radio"/> Weak Acid (A)</p> <p>Draw most abundant species:</p> <p>H_3O^+</p> <p>Reaction Equation: $HA + H_2O \rightleftharpoons A^- + H_3O^+$</p>
<p><input checked="" type="radio"/> Strong Base (MOH)</p> <p>Draw most abundant species:</p> <p>OH^-</p> <p>Reaction Equation: $MOH \rightarrow M^+ + OH^-$</p>	<p><input checked="" type="radio"/> Weak Base (B)</p> <p>Draw most abundant species:</p> <p>OH^-</p> <p>Reaction Equation: $B + H_2O \rightleftharpoons BH^+ + OH^-$</p>

Select the litmus paper tool:



Put: water, strong acid, weak acid, strong base and weak base in the appropriate boxes, below: For example, Dove soap is a weak acid (pH6) and Ivory soap is a weak base (pH10).

What is the color key for litmus? (fill in last 2 boxes)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

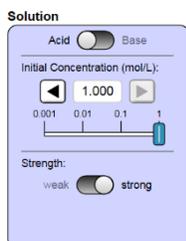
pH Color Key

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Strong acid		Weak acid		Dove				Weak base	Ivory		Strong base	

pH Color Key

Part 2 – Select “My Solution”

Set solution to a strong acid. Put the pH meter in the solution. Move the

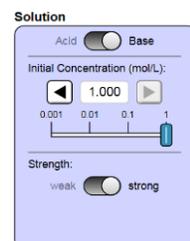


slider to each concentration in the table. Record the pH in the table.

Concentration	pH meter
0.001	3
0.01	2
0.1	1
1.0	0



Set solution to a strong base. Put the pH meter in the solution. Move the slider to each concentration in the table. Record the pH in the table.



Concentration	pH meter
0.001	11
0.01	12
0.1	13
1.0	14

Describe in one or two sentences what happens to the pH meter readings as concentration changes tenfold: **The value changes by 1.**