******

**PhET pH scale html5**

AA31 Labs

**CLICK!**



***Setting up***: The boxes in the picture, right, are pieces that move and affect the concentration and or amount of solution

Move the concentration sensor into the solution (circle, arrow)

******Review the controls. Try them out, see what they

do. When done exploring them, click the reset button.

***Part 1 Macro***: Add some chicken soup to the beaker. How can you change the pH of the solution? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



***Part 2 Micro***: Click then check



🡨 Choose the substance and fill in the table, below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Substance | pH | Describe the dots | Concentration [H3O+] | Concentration [OH-] | pOH(14 - pH) | ClassifyA – AcidB – BaseN -- Neutral |
| Battery Acid | 1.00 | a. More redb. Equal red and bluec. More blue |  |  | 14 – 1 =13 | A |
| Vomit |  | a. More redb. Equal red and bluec. More blue |  |  |  |  |
| Soda |  | a. More redb. Equal red and bluec. More blue |  |  |  |  |
| Coffee |  | a. More redb. Equal red and bluec. More blue |  |  |  |  |
| Milk |  | a. More redb. Equal red and bluec. More blue |  |  |  |  |
| Water |  | a. More redb. Equal red and bluec. More blue |  |  |  |  |
| Spit |  | a. More redb. Equal red and bluec. More blue |  |  |  |  |
| Blood |  | a. More redb. Equal red and bluec. More blue |  |  |  |  |
| Soap |  | a. More redb. Equal red and bluec. More blue |  |  |  |  |
| Drain Cleaner |  | a. More redb. Equal red and bluec. More blue |  |  |  |  |

***Part 3 pH Scale***: Click then check the box 🡪

Fill in table following example:

example for pH7.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| pH | [H3O+] | [-OH] | Red/blue? | ABN |
|  |  |  | equal | **N**eutral |
|  |  |  |  | **B**ase |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  | **A**cid |
|  |  |  |  |  |
|  |  |  |  |  |

***Post lab Questions***:

In part 2, what relationship is there between pH and the dot color?

In part 2, what relationship is there between pH and the pOH?

In parts 2+3, what relationship is there between [H3O+] and [-OH] (the sliders)?

In part 3, what relationship is there between pH and [H3O+] (there is a cool numerical relationship!)?

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

***Going further***

Using the data in part 3, predict what goes in the boxes:

Using the data from part 2, what would you predict the pOH’s to be for these entries in table 3?

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | **pOH** |
|  |  |  | **pOH** |
|  |  |  | **pOH** |
|  |  |  | **pOH** |

 Rate your understanding of pH

* :/ ☹

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