

pH Challenge

Name _____

Go to the Science Spot Kid Zone at <http://sciencespot.net/> and click the link for Matter & Atoms to find these sites.

Site #1: BrainPOP pH Scale Lab

1. More acidic substances are found at _____ numbers, while more basic ones are found at _____ numbers.
2. Click the circles to see the pH for common acids. Which one was the strongest? _____
Which one was the weakest? _____
3. . Click the circles to see the pH for common bases. Which one was the strongest? _____
Which one was the weakest? _____
4. Match the colors on the pH paper to the scale. What is the pH of each substance?
Lemon ____ Coffee ____ Water ____ Milk of Magnesia ____
5. C.bot produces neurotoxins called _____ at the right conditions. Canned and jarred food must keep a pH below ____ to prevent this.
6. Out of the ingredients for salsa, which is the strongest acid? _____ What is its pH? _____
8. To make sure the pH meter is reading accurately, scientists _____ it before using it.
9. What is found on the end of the pH meter? _____
10. Follow the directions to get the pH meter ready for testing. Check the box when you are finished.

Site #2: BrainPOP Acidifying Salsa

1. Read through the introduction. to review the information from the previous activity.
2. How do you lower the pH of the salsa? _____
3. Choose an acid and then follow the prompts to complete the testing. Which version will be safe from C. bot? Why? _____

Site #3: Glencoe Virtual pH Lab

1. Read the information provided to answer these questions.

What type of indicator will you use? _____

What happens when it is dipped into a solution? _____

2. Test each substance by following the directions.

Test Tube #	1	2	3	4	5	6
Substance →						
pH Value →						

Site 4: Alien Juice Bar - READ the directions!

Challenge 1 - Click the button for Challenge 1 to learn more about acids and bases.

(1) Click the cup with the purple juice in it and drag it to the different liquids to check the pH. What happens to the color in each one?

Lemon Juice - _____ Window cleaner - _____ Water - _____

(2) Drag each liquid to the correct shelf before clicking the “Check Me” lever.

(3) Click the “Test More” button under the lever. When you are finished checking all of those liquids, click the “Check Me” lever. Once you get them all correct, click the “continue” button to return to the main menu.

Challenge 2 - Click the button for Challenge 2 to use your knowledge of acids and bases.

(1) Read the directions before clicking the “Start” button!

(2) Tips for the Flying Cabbage ... If you are not sure if a liquid is an acid or base, click and drag the cup of cabbage juice to the bottle to test the pH. Click and drag the bottle of liquid to the clear cup in front of the alien to pour a drink.

(3) How did you do? Why? _____

NOTE: If you kept everyone alive, click the “Main Menu” button. If you didn’t keep everyone alive, click the “Try Again” button.

Challenge 3 - Click the button for Challenge 3 to test your knowledge of acids and bases .

(1) Click and drag the cup of cabbage juice to each drink on the tray to check the pH.

(2) To change the pH of a liquid, click a bottle of liquid from the shelf and drag it to a glass. Watch the pH increase or decrease.

(3) If you need a lower/higher reading, keep adding acids/bases until the pH is in the correct range. Once all the drinks are correct, you will see a “Continue” button. Click it to move on to the next set of drinks. Continue adding acids and bases to the drinks until you get the pH at the correct level.

HINT: For this section, neutral equals anything between 6.80 and 7.20!

(4) Which acid and base caused the biggest changes in pH? (Based on one click and drag!)

Acid - _____ Base - _____