

Virtual Lab: Alien Juice Bar

For use with GEMS "Of Cabbages in Chemistry"

1 pt ec printing

GO TO: <http://scienceview.berkeley.edu/showcase/flash/juicebar.html>

Challenge 1: Alien Juice Bar

1. Click on Challenge 1 then "start"
2. Answer the question in the box →
3. Click on the pitcher of cabbage juice and drag towards one of the three drinks.
4. The cabbage juice will pour into a beaker and may or may not change color.
5. Continue until all three drinks have been poured.
6. Place the drinks onto the correct shelf above the alien's head.
7. When done, pull the "check me" lever.
8. If you are wrong, the bottles will come off the shelf – try again until you get them all right!
9. Fill in the data table below to show your results.

What is an indicator?

Drink	Color in Beaker	Acid, Base or Neutral?
Window Cleaner		
Lemon Juice		
Water		

Click on "Test More" to continue.

10. Click on the pitcher of cabbage juice and drag towards one of the nine drinks.
11. You may pour the cabbage juice to indicate if it is an acidic, basic or neutral drink.
12. Continue until all nine drinks have been poured, or you can try to guess the pH of each bottle!
13. Place the drinks onto the correct shelf above the alien's head.
14. When done, pull the "check me" lever.
15. If you are wrong, the bottles will come off the shelf – try again until you get them all right!
16. Fill in the table below to indicate where each drink belongs.

Acid	Neutral	Base

- Click on "Continue" for a surprise!
- Click on "Main Menu" to continue.

Challenge 2: The Flying Cabbage Juice Bar

1. Read the directions on the screen and then hit "Start".
2. Copy the pH diploma →
3. Listen to your customers carefully, if you give them the wrong drink, they can get sick or even die and you will lose your license! Good Luck!
4. You can test the pH of each drink with the pitcher of cabbage juice and you can also restock the shelf if you run low on drinks.
5. Drink choices: lemon juice, water, mouthwash, water, cough medicine, window cleaner, toothpaste juice, coffee, liquid soap, water, soda pop, and orange juice.
6. Record your results into the data table below.

pH Diploma

Pink = _____

Green = _____

Purple = _____

Customer #	They asked for:	You gave:	Sick Customer? Try again	Yummy or dead?
<i>Example</i>	<i>Neutral</i>	<i>Lemon Juice</i>	<i>Water</i>	<i>Yummy!</i>
1				
2				
3				
4				
5				
6				

- Did all your customers survive? Congratulations! Click on “Continue”
- OR: Did you lose your license? Try again and complete the table below.

Customer #	They asked for:	You gave:	Sick Customer? Try again	Yummy or dead?
1				
2				
3				
4				
5				
6				

Challenge 3: Alien Juice Bar Challenge

1. Click on Start.
2. Answer the question in the box →
3. Drag the pitcher of cabbage juice until all the glasses on the tray change color and the pH is indicated.
4. Mentally assign each glass a number, #1-#6.
5. Write down the starting color, pH, and whether the drink is acidic, basic or neutral.
6. Your job is to add different amounts of liquid (click and drag the bottles) to each glass to change the pH to the pH that is being asked for.
7. This is a tough assignment, one hint is that different drinks will make the pH either change in small increments or large increments; it is up to you to figure out the right combinations! Good luck!
8. When you have reached the correct pH for all the glasses on the tray, it will automatically move to the next level. Record your results below.

What is pH?

Drink #	Start			Finish		
	Color	pH	Acidic, Basic, or Neutral?	Color	pH	Acidic, Basic, or Neutral?
1						
2						
3						
4						
5						
6						

In the space below, write 3 facts you learned by completing this virtual lab.