

# How do we measure pH?

Mr. M. Gonzalez

# HW

## ► Finish Worksheet

How do we measure pH?

# Germination Rate Calculation

- ▶ Today is day 07 from when we began germination. Calculate today's rate.
- ▶ Was your hypothesis supported by the data?

Day	Sprouts	Seed Total	Hyp. Rate %	5% error	Real Rate %	Support Y / N
6						
7						
8						
9						
10						

How do we measure pH?

# Objectives

- ▶ I can measure pH values of different solutions.
- ▶ I can properly use a digital pH meter.
- ▶ I can prepare a table and bar graph to compare the pH values of different solutions.

# Safety

- ▶ Remember none of the equipment was made to be dropped.
- ▶ Wear gloves, aprons, and goggles.
- ▶ Don't rub your eyes or eat if you got chemicals on your bare hands.
- ▶ **WASH HANDS BEFORE LEAVING!**

# Procedures

## ► Setting up

- Listen to instructions.
- Read instructions and procedures if available.
- Take everything off your work area except for lab instructions (if applicable) and make sure area is clean.
- One person at a time from each group should gather materials carrying them safely.
- Put on safety equipment.

# Materials.

- ▶ Sample solutions (filtered water, chlorine, vinegar, ammonia)
- ▶ Hanna Combo Meters x 8
- ▶ Storage solutions x 8
- ▶ Squirt bottles with filtered water x 8
- ▶ Paper towels x various
- ▶ Disposable cups or beakers x 8
- ▶ Apron, gloves, and goggles
- ▶ Non latex gloves
- ▶ Graph paper

# Calibration

- ▶ Prepare meter for reading
- ▶ Add to pH 7 standard
- ▶ If more than 0.4 units away from 7 then calibrate



# pH of Various Solutions

Item	Hyp. pH	Your pH	Other groups' pH	Class pH avg.
Ammonia				
Chlorine				
Vinegar				
Filtered water				
Fountain water				
		How do we measure pH?		

# Come up with your hypothesis

Item	Hyp. pH	Your pH	Other groups' pH	Class pH avg.
Ammonia				
Chlorine				
Vinegar				
Filtered water				
Fountain water				
		How do we measure pH?		

# Example of a final graph

- ▶ graph should include bars for each **AVERAGE** solution value
- ▶ The axis should have labels and an adequate scale.
- ▶ graph should have a title that describes information clearly and concisely at the **bottom**.

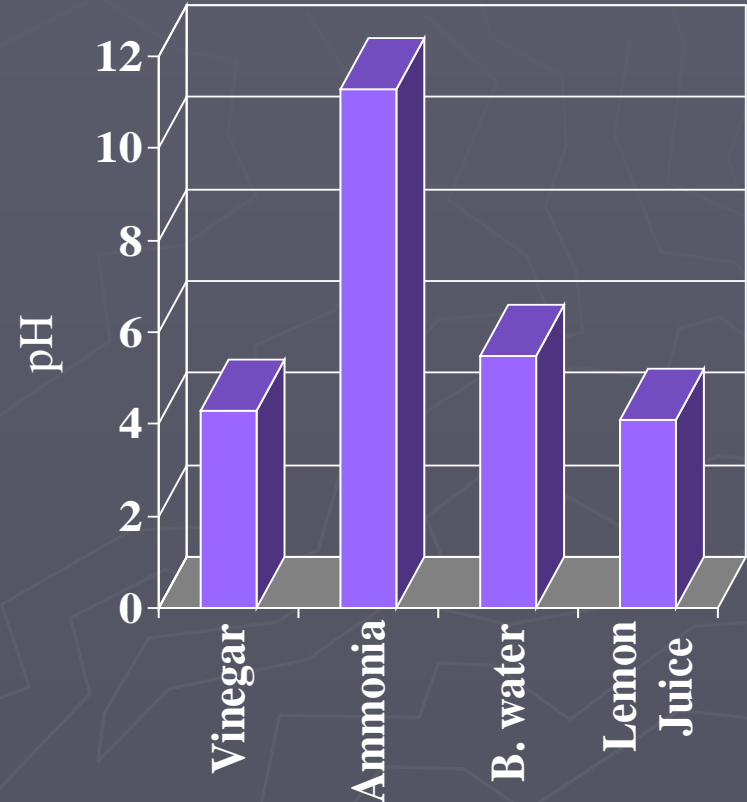


Fig. 01. pH values of ...

# HW

## ► Finish Worksheet

How do we measure pH?