

We need your Help! Just recently I was sitting by my homemade pond in my amazingly well landscaped backyard, when I noticed one of my three koi, Mr. Tickles, wasn't looking to good. He was swimming upside down. I found out several days latter that fish don't swim upside down. Five days after that bits and peaces started to fall off of Mr. Tickles. At this point I really needed a professional, so I called my mother. To my horror my mom explained to me that sometimes fish need to go on a long vacation, take a trip to Davy Jones' locker, take the big nap, jump into the big drink, join the puppies at the puppy farm. All I wanted to know is when Mr. Tickles would be back. Apparently I didn't understand what mom was saying, cause she hit me, really hard. She told me Mr. Tickles isn't coming back, because Mr. Tickles is DEAD! Wow, dead.

There were, are, still two more fish, Fish sticks and Ms. Snowflake, in my pond. I needed to find out what, or who, killed Mr. Tickles. The pond has 7000 gallons of water in it. After testing the water I found while there were several things wrong with it the biggest problem seems to be the pH of 3.00. This is probably from to acid rain. Your job is to figure out what a pH of 3.00 means, pick a base that you can use to neutralize it, and tell me how many grams of that base I will need to add to my pond.

Things you will need to do...

- What is the concentration of acid?
- How many moles of acid are in my pond?
- You may chose from the following bases...
NaOH, Ca(OH)₂, KOH, Na₃PO₄, CaCO₃, Na₂CO₃, K₂CO₃
You must explain why you chose the base, and what you think is wrong with the others.
- How much of your base are you going to add to my pond?
- How can I prevent this in the future?

Concepts you will need to understand:

- What is an acid, what is a base?
- What is a neutralization reaction?
- What is pH?
- What is concentration?
- What is a buffer?