Phagehunting Program

Math and Dilutions

Microbiology is full of Math and Dilution Terminology. Luckily, once you become accustomed to using it, you will find that it is not difficult!

Exponents: powers of 10

10^0=1 (All numbers to the zeroth power equal 1)

10^1=10 (Ten to the first)
10^2=100 (Ten to the second)
10^3=1,000 (Ten to the third)
10^4=10,000 (You get the idea now, right?)
10^5=100,000
10^6=1,000,000

10^{-1}=1/10=0.1 (Ten to the minus one or one tenth)
10^{-2}=1/100=0.01 (Ten to the minus two or one hundredth)
10^{-3}=1/1,000=0.001 (Ten to the minus three or one thousandth)
10^{-4}=1/10,000=0.0001 (You see the pattern!)
10^{-5}=1/100,000=0.00001
10^{-6}=1/1,000,000=0.000001

Dilutions

A 10^{-2} ("ten to the minus two") dilution means a "one to one hundredth dilution", so to make this:
Mix 1 in 100 total (1 of your stuff plus 99 of diluent)
or 5 in 500 total (5 of your stuff plus 495 of diluent)
or 10 in 1000 total (10 of your stuff plus 990 of diluent)

You could, also, dilute 10^{-1} and then dilute that 10^{-1} dilution again tenfold to make a serial dilution of 10^{-2} overall.