

How many particles are in Lake Erie?

Name _____

Question: How can you determine the number of water particles present in Lake Erie?

Materials: water, dropper, graduated cylinder, balance, beaker

Procedure: Using the equipment listed above and the following information, determine the number of molecules of water there are in Lake Erie:

- One mole of anything contains 6.02×10^{23} particles.
- One mole of water has a mass of 18.02 grams
- Lake Erie has an average depth of .018 km and spans an area of $2.6 \times 10^4 \text{ km}^2$
- 1 milliliter of water has a mass of 1 gram.

Prepare a data table below and utilize the factor label method in all of your calculations. **Remember: it's all about the labels!**

Summing up (be sure to show your work to receive credit!):

- 1) How many drops of water are in 2.0 L?
- 2) How many drops of water are in Lake Erie?
- 3) How many molecules of water are in Lake Erie?
- 4) How many moles of water are in Lake Erie?
- 5) You are supposed to drink 2.0 L of water per day. How many molecules of water is that?