

## Salty Water!

This lab is designed to demonstrate the formation of the world's oceans and why the oceans are salty.

You will need:

- Salt
- Potting soil
- Coffee filter
- Paper cup
- Metric ruler
- Black paper

Procedure:

1. Make a mixture of half salt and half soil by mixing a quarter cup of salt with a quarter cup of potting soil.
2. Take a paper cup and using a pencil, punch five small holes through the bottom of the cup.
3. Place a coffee filter inside a paper cup and put a couple of tablespoons of the salt soil mixture inside the coffee filter.
4. Hold the cup 2 cm above a sheet of black paper, add one cup of water and allow the water to drip onto the paper.
5. When all the water has dripped out onto the paper, allow the paper to sit in the sun to dry.

Data & Observations:

Record qualitative and quantitative observations during your experiment.

Describe how the water fell from the cup. Include descriptions of color and smell.

Using the drawing tools, draw a picture of the black paper during and after the experiment.

Analysis & Conclusions:

1. What was your hypothesis?
2. What was your independent variable?
3. What was your dependent variable?
4. Was this experiment a controlled experiment?
5. Why did you use black paper as opposed to white paper?
6. Explain the results. What does the dried paper suggest?
7. How can this experiment be used as a model for the formation of the world ocean?
8. The salinity of ocean water is measured in parts per thousand. Therefore, if the salinity of 500g of saltwater is 30ppt, there are 15g of dissolved salts in the seawater ( $1/2$  of 30ppt = 15g). If the average salinity of seawater is 35ppt, how many grams of dissolved salts will 500g of seawater contain?
9. If the average salinity of seawater is 29ppt, how many grams of dissolved salts will 500g of seawater contain?

10. If the average salinity of seawater is 30ppt, how many grams of dissolved salts will 1000g of seawater contain?
11. Was your hypothesis supported or refuted?
12. If you had to perform this experiment again, what might you do differently?
13. How might this lab provide useful information for the study of oceanography?