# Thermohaline Circulation Lab Report

**We will be using this experiment to better understand and model the thermohaline circulation indicative of the global ocean.**

**Question:** How do differences in salinity and temperature affect the interaction of two water samples?

**Experimental Setup:** You will be comparing the interaction between water with different salinity, temperature and density.

**Part A. Salinity:** Fresh vs. Salt

Create a **hypothesis** for how you think the fresh and salt water will interact in this trial.

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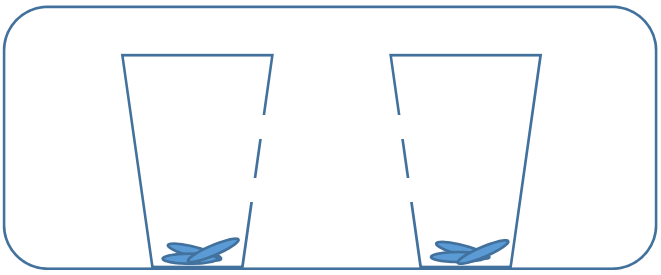
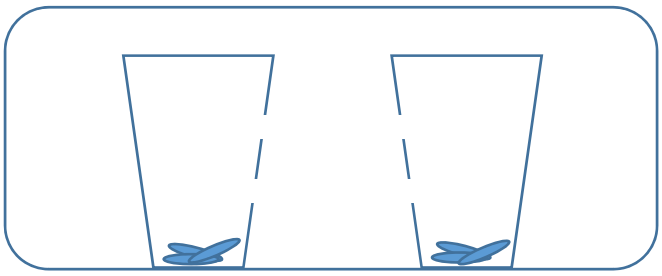
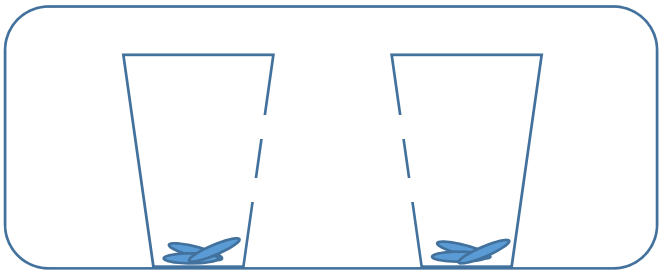
Using the templates below, record the pattern of any flow of water for this trial.



Initial



After 1 minute



After 5 minutes

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**Part B. Temperature:** Hot vs. Cold

Create a **hypothesis** for how you think the hot and cold water will interact in this trial.

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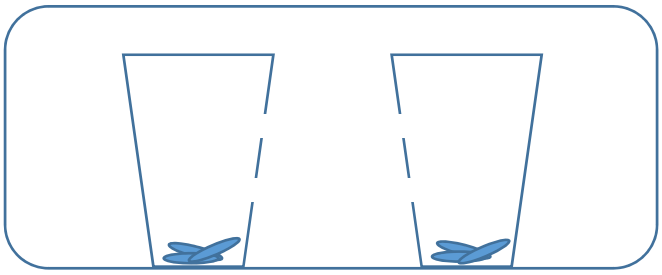
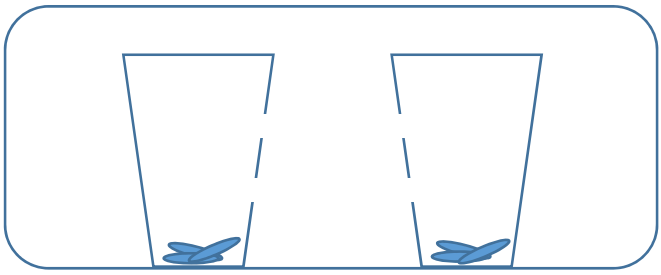
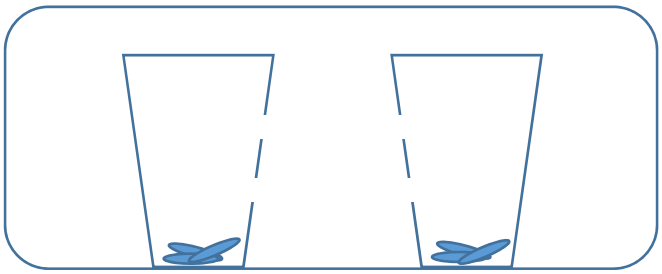
Using the templates below, record the pattern of any flow of water for this trial.



Initial



After 1 minute



After 5 minutes

**Part C. Density:** Hot/Fresh vs. Cold/Salt

Create a **hypothesis** for how you think the hot fresh and cold salt water will interact in this trial.

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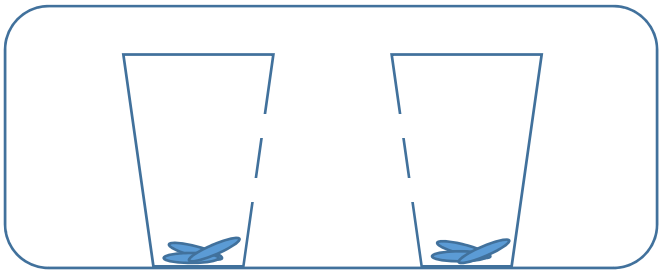
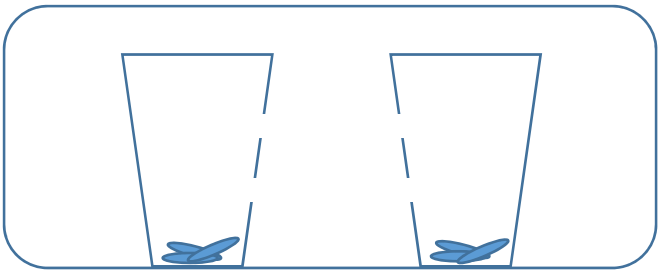
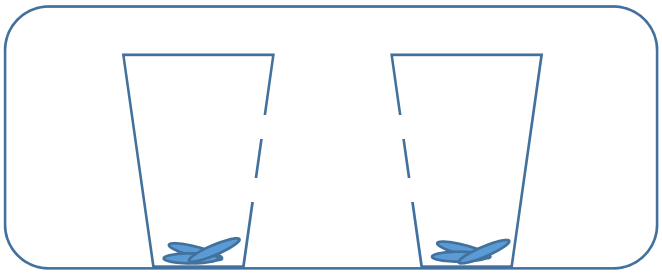
Using the templates below, record the pattern of any flow of water for this trial.



Initial



After 1 minute



After 5 minutes

**Conclusion**:

1. Explain how differences in salinity can cause the movement of water.

2. Explain how differences in temperature can cause the movement of water.

3. Explain how salinity interacts with temperature to cause the movement of water.

4. What do you think would happen if you left the experiment overnight in:

    a. Part A: same-temperature salt water vs fresh water

    b. Part B: hot and cold fresh water