**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Reeling in CTD Data**

**Student Data Sheet**

**Part A – Please complete the following questions in your ‘expert groups’. All members of the ‘expert’ group should have the same CTD profile.**

1. What color is used to represent the following measurement:
	1. Temperature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Salinity: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. PAR: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the temperature at the depth of 20m? If your CTD cast does not have a depth of 20m, answer the question using a depth of 5m.
3. Looking at the temperature readings, describe what happens to the temperature as the CTD moves deeper into the water column.
4. A **thermocline** is described as a rapid change in temperature in the water column. Is a thermocline present in the CTD profile? Describe the thermocline below and then mark the thermocline on the CTD cast.
5. What units are used to measure water salinity?
6. Describe the change in salinity as depth increases.
7. Average ocean salt water salinity ranges between 32-36psu. Does the CTD cast appear to be from salt water or from fresh water? Please explain your answer using evidence from the CTD profile.
8. A **mixed layer** is defined as the area of the upper water column where parameters like salinity and temperature do not rapidly change. Is a mixed layer present in this CTD profile? Is the mixed layer shallow or deep? Please explain your answer using information from the profile.



Please return to your ‘home’ groups to complete Part B

**Part B – Please complete the following questions in your ‘home’ groups. All members of the ‘home’ group should have different CTD profiles.**

1. Explain your CTD profile to the members of your group. Be sure to highlight the changes in temperature and salinity.
2. Identify ONE difference between the CTD profiles (this can be a difference between all or just some of the profiles – please be specific in the answer).
3. What is the deepest depth sampled between all four profiles?
4. Typically, salinity increases with depth. Do all the CTD profiles follow this general characteristic?

**Part C – Claim, Evidence and Reasoning. Write a scientific explanation that answers the question below**

**Question**: Typically, temperature data decreases with depth. Do all the CTD profiles follow this general characteristic?

**Claim** (A conclusion that answers the original research question/problem):

**Evidence** (Scientific data that supports the claim):

**Reasoning** (Justification that links the claim to the evidence):