MAINE COLA LAKE STEWARDSHIP PROGRAM

SHIP'S LOG MELINDA ANN

DATE OF DEPARTURE

TIME OF SAILING

HARBOR

CREW MEMBER

HOME PORT (*school)*

WEATHER CONDITIONS:

Clouds or Sun? _____

Air Temperature_____ Fahrenheit/Celsius

Wind Direction_____

Wind Speed_____

Signature of Passenger/Observer_____

(prior to your voyage find a map of the lake and draw its outline here)

1. USING THE SECCHI DISK READING

- **What was our Secchi Disk reading?**

- **Why do we need an Aquascope to get a Secchi Disk reading?**

- **What may a Secchi Disk reading tell you about a lake?**

- **Draw the Secchi Disk, showing all parts**

2. A ZOOPLANKTON TOW

- **Draw a picture of your favorite zooplankton critter.**

- **How does this critter catch food?**

- **Name two types of macroinvertebrates that you saw today and describe how each gets its food.**

    A plant consumer:

    A predator:

3.TEMPERATURE AND LAKE STRATIFICATION

- **Surface Temperature _____ Fahrenheit/Celsius**
-
- **Bottom Temperature _____ Fahrenheit/Celsius**
-
- **Bottom Depth _____ feet or meters**

Do you have any clue as to whether this lake is temperature stratified?
What is the clue?

Describe what a lake scientist might do to show that a lake is really stratified into 3 different layers?

4. BENTHIC DREDGE: INVERTEBRATES IN THE FOOD WEB

- **Draw a picture of a critter found in the dredge**

- **What is its common name?**

- **Does this creature ever leave the water during its lifetime?**

- **If it does leave the water what does it become?**

- **Sketch what it will look like as an adult?**

5. THE REMOTELY OPERATED VEHICLE (ROV), CRUISING THE DEPTHS

- **How deep did the ROV go? _____ feet/meters**

- **What does the lake bottom looks like in the shallow areas?**
- **(Draw and label plants, mussels, trash, rocks, logs, or what?)**

- **Draw and label what you see in the deeper areas?**

- **Compare the shallow and deep areas. Is this what you expected?**

- **What might account for some of the differences?**

EXTENSION QUESTIONS FOR DEEPER UNDERSTANDING ONCE YOU HAVE RETURNED TO SCHOOL

TEACHER: THE WEB LOCATION BELOW OR THE MAINECOLA.ORG WEBSITE HAS ADDITIONAL RESOURCES THAT YOUR STUDENTS CAN EXPLORE TO ANSWER THESE QUESTIONS:

http://www.earlmorse.org/colaeducation/aboardmelindaann/aboard_the_melinda_ann.htm

OR

http://www.mainecola.org

1. USING THE SECCHI DISK READING:

THE WEB SITE WILL GIVE YOU A FEW SECCHI DISK READINGS FROM OTHER MAINE LAKES TAKEN ABOUT THIS SAME TIME OF YEAR.

PUT AN "X" ON THE LINE BELOW INDICATING WHERE YOU THINK YOUR LAKE'S TRANSPARENCY LIES COMPARED TO THESE OTHER LAKES.

VERY LOW _ _ _ _ _ _ _ _ _ _ MEDIUM _ _ _ _ _ _ _ _ _ _ _ VERY HIGH

WHAT MIGHT THIS INDICATE ABOUT THE LAKE YOU EXPLORED?

SECCHI DISK READINGS CAN CHANGE A LOT FROM SPRING TO FALL. WHAT KINDS OF THINGS MIGHT CAUSE THESE CHANGES?

2. A ZOOPLANKTON TOW:

THE NET USED CAPTURES MAINLY ZOOPLANKTON. HOW DOES IT WORK?

ZOOPLANKTON ARE OFTEN FOUND AT DIFFERENT DEPTHS DEPENDING ON THE TIME OF DAY. WHY MIGHT THIS HAPPEN?

3. TEMPERATURE AND LAKE STRATIFICATION

IF YOUR POND IS STRATIFIED YOU MIGHT SEE A PATTERN THAT SHOWS 2 OR 3 TEMPERATURE LAYERS ON A GRAPH. DESCRIBE WHAT DIFFERENCES YOU MIGHT FIND BETWEEN EACH LAYER'S WATER TEMPERATURE.

THE WATER TEMPERATURES IN THE TOP LAYER ARE:

THE WATER TEMPERATURES IN THE NEXT LAYER DOWN ARE:

THE WATER TEMPERATURES OF THE LOWEST LAYER ARE:

DESCRIBE A COMMON OXYGEN PROBLEM FOUND NEAR THE BOTTOM OF SOME LAYERED LAKES TOWARD THE END OF SUMMER.

HOW MIGHT THESE PROBLEMS AFFECT THE LIVES OF COLD-WATER LOVING FISH?

4. BENTHIC DREDGE: INVERTEBRATES IN THE FOOD WEB

DRAW A PICTURE OF A CREATURE FOUND ON THE DREDGE THAT DOESN'T CHANGE ITS APPEARANCE MUCH DURING IT'S LIFETIME:

WHAT DOES THIS CREATURE DO FOR A LIVING?

IF YOUR FAVORITE CREATURE CHANGES A LOT DURING ITS LIFETIME, DRAW A PICTURE OF WHAT THIS CREATURE LOOKS LIKE LATER IN LIFE:

IF YOUR CREATURE EMERGES FROM THE WATER AS AN ADULT HOW MUCH OF ITS LIFE IS SPENT IN THE WATER VERSUS OUT OF THE WATER?

MANY OF THE CREATURES THAT EMERGE FROM THE WATER DO SO AT THE SAME TIME PRODUCING WHAT FLY FISHERFOLK CALL A "HATCH." WHY DO THESE CREATURES ALL COME OUT OR "HATCH" ABOUT THE SAME TIME?

WERE ANY OF THE CREATURES FOUND IN THE DREDGE INDICATORS OF "GOOD" WATER QUALITY? DRAW A PICTURE OF THAT CREATURE AND DESCRIBE WHY IT INDICATES "GOOD" WATER QUALITY.

WERE ANY OF THE CREATURES FOUND IN THE DREDGE INDICATORS OF "POOR" WATER QUALITY? DRAW A PICTURE OF THAT CREATURE AND DESCRIBE WHY IT INDICATES "POOR" WATER QUALITY.

WERE ANY OF THE CREATURES FOUND IN THE DREDGE EXOTIC, THAT IS NOT NATIVE TO THIS BODY OF WATER. IF YOU FIND ONE DRAW IT HERE:

WHAT KIND OF PROBLEMS MIGHT THIS EXOTIC CREATURE CAUSE IN THIS BODY OF WATER?

DESCRIBE WHY FLY FISHERFOLK STUDY THE LIVES OF BENTHIC CREATURES SO MUCH? HOW DO THEY USE THIS INFORMATION?

5. THE REMOTELY OPERATED VEHICLE (ROV), CRUISING THE DEPTHS

WHAT WAS THE DEEPEST DEPTH THE ROV CRUISED?

WHAT WAS THE TEMPERATURE AT THIS DEPTH?

AT THE DEEPEST, DID THE ROV CRUISE ABOVE OR BELOW THE SECCHI DEPTH (CIRCLE).

NUMBER OF FEET OR METERS ABOVE OR BELOW THE SECCHI DEPTH:

WHAT WAS THE MOST INTERESTING DISCOVERY YOU MADE ABOUT THE LAKE DURING THE ROV CRUISE.

WHERE DO YOU THINK YOUNG FISH ARE MOST LIKELY TO BE FOUND?

WHY MIGHT THEY BE FOUND HERE?