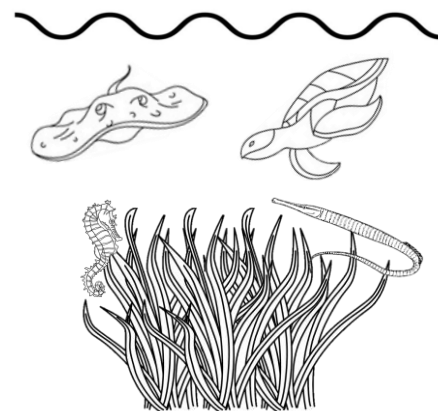


Build Your Own Secchi Disk Activity

A SECCHI DISK is a tool that scientists can use to measure the turbidity of water. TURBIDITY is the cloudiness or haziness of a liquid, and can tell us about the health of an environment.

The Secchi disk you will make is a miniature version and will be constructed using items you have at home!

You will then use your Secchi disk to measure the turbidity of three liquids and record your data!

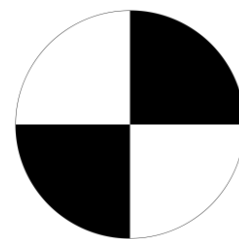


Materials Needed:

- Clear or white bottle cap
- Black Sharpie
- Liquid Whiteout- if your cap is not white
- A penny
- Hot glue or super glue
- White or light-colored string
- Ruler
- Tooth pick
- Scissors
- Pencil
- 3 pieces of blank paper
- 3 glasses that can hold 12 oz of liquid
- Liquid measuring cup
- 24 oz of Pepsi or other dark colored soda
- 12 oz of water
- Calculator

Instructions to Make your Secchi disk:

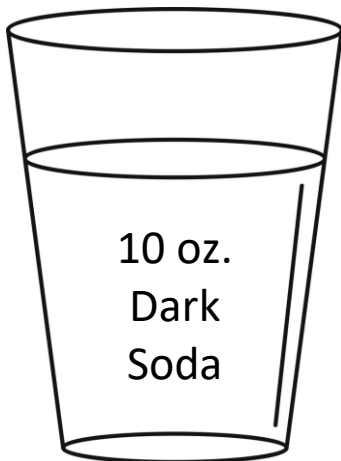
1. Ask an adult in your home to help you with this activity
2. Divide the top surface of the bottle cap into 4 sections, like the picture here and use the black sharpie to color in the black portions of the cap. If your cap is not already white, then use liquid whiteout to color in the sections that should be white.
3. Cut your string so that it is 12 inches long and knot the string at one end. Mark the string with the black sharpie at every CENTIMETER past the knot you made.
4. Use your glue to attach the penny to the underside of the cap to help weigh your Secchi disk down during the experiment.
5. Put a small amount of glue in the middle of the bottle cap and use the toothpick to gently place the knot of the rope onto the glue before it hardens.



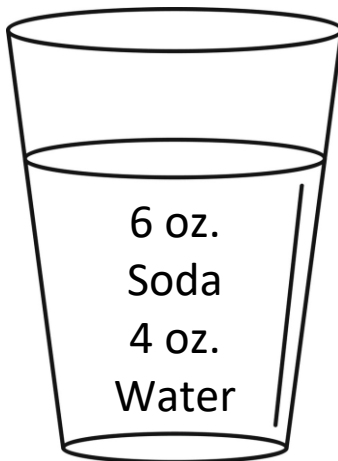
Build Your Own Secchi Disk Activity

Instructions for the Experiment:

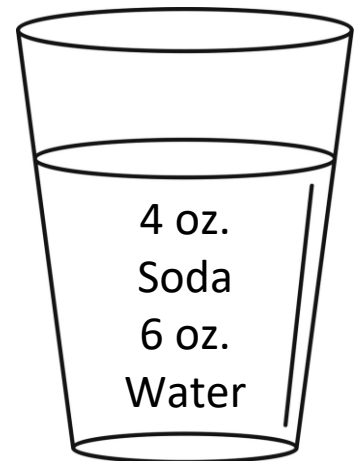
1. Label your blank sheets of paper as “Glass 1”, “Glass 2”, and “Glass 3” then place one glass on each sheet of paper.
2. Use your liquid measuring cup to fill each glass with the following:
 - Glass 1: 10 oz. of coke or other dark colored soda
 - Glass 2: 6 oz. of soda and 4 oz. of water
 - Glass 3: 4 oz. of soda and 6 oz. of water
3. Lower your Secchi disk into Glass 1 while counting how many black marks pass under the water line. As soon as you cannot see the disk any longer, stop lowering the string and record the Depth #1- which is how many black marks are under water including any marks right at the water line.
4. Raise the disk slowly until you can barely see it and record the Depth #2- which is how many black marks are under water now, including any marks right at the water line.
5. Repeat steps 3 and 4 for Glass 2 and then again for Glass 3
6. Use your calculator and data sheet to complete the formulas to determine the Secchi Depth for each glass.
7. Answer the questions on the data sheet.
8. Share your results with us @harborbranch.



Glass 1



Glass 2



Glass 3

Secchi Disk Experiment Data Sheet

Name: _____ Date: _____

Glass 1

Depth #1 _____ + Depth #2 _____ = Total Depth _____

Total Depth _____ $\div$ 2 = **Secchi Depth** _____

Glass 2

Depth #1 _____ + Depth #2 _____ = Total Depth _____

Total Depth _____ $\div$ 2 = **Secchi Depth** _____

Glass 3

Depth #1 _____ + Depth #2 _____ = Total Depth _____

Total Depth _____ $\div$ 2 = **Secchi Depth** _____

1. Which glass was the most turbid?
(had the lowest value for it's Secchi depth) **Glass** _____
2. Which glass was the least turbid?
(had the highest value for it's Secchi depth) **Glass** _____
3. Which glass represents an area of water that you think would be better for underwater plants like seagrass? Why?