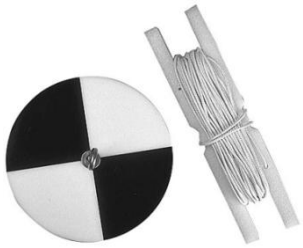
ANSWER **ANSWER** **ANSWER**

Round: 4A



1. Name the oceanographic instrument pictured above.
   Secchi disk (2 pts)

2. How long has this instrument been used by oceanographers?
   Secchi disks were first introduced in 1865, and have been in use for almost 150 years. (125 – 175 years acceptable) (2 pts)

3. Describe the procedure for using this instrument.
   A Secchi disk is lowered into the water until the pattern on the disk disappears from view (1 pt); this depth is recorded and the disk lowered a bit further (1 pt). The disk is then raised back up and the distance at which the pattern reappears is recorded (1 pt). If the two recorded measurements differ, the average is determined as the Secchi depth (1pt).

4. What does this measurement tell us?
   Describes water transparency OR clarity OR light transmission/penetration of the body of water (3pts)

5. The depth (as measured in meters) divided by 1.7 yields a coefficient described as what?
   Attenuation coefficient OR extinction coefficient (3 pts)

6. Give three (3) reasons depth measurements obtained using this piece of equipment might get shallower during the summer season.
   Any three (3) of the following (2 pts each; 6 points total):
   - *Increased abundance of algae OR algal blooms*
   - *Erosion of shoreline OR input of inorganic material*
   - *Resuspension of bottom sediment from boat motors*
   - *Heavy rain/storm events OR increased river discharge/runoff*
   - *Reduced zooplankton populations*

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Photo: http://www.geoscientific.com/Graphics/Secchi%20Disk.jpgGeo Scientific Ltd.
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