

# Freshwater Monitoring – Periscope Viewer

Aim: To investigate how clear the water is.

Equipment	Method	Things to discuss:
<ul style="list-style-type: none"> <li>• periscope viewer</li> <li>• black disc</li> <li>• tape measure</li> <li>• Stream Health Monitoring Data Recording Sheet</li> </ul>	<p>Use this method if the equipment is available and if visibility is more than 0.5m.</p> <ol style="list-style-type: none"> <li>1. One person holds the black disc just below the water's surface either upstream or across the stream from the viewer.</li> <li>2. Attach the tape measure to the black disc. Pull the tape to the viewer and wait for any disturbed sediment to settle.</li> <li>3. Place the periscope just below the water's surface. Look into the viewer box, with the top snug against your face. Allow time for your eyes to adjust until you see the black disc.</li> <li>4. Carefully walk downstream, or across the stream, until you can no longer see the black disc.</li> <li>5. Measure the distance between the viewer box and the disc.</li> <li>6. Record the number as y1 on the recording sheet.</li> <li>7. Slowly walk toward the disc until it just reappears and measure this distance as y2. Record the number as y2 on the recording sheet.</li> </ol> $\text{Visual clarity} = \frac{y1+y2}{2}$ <ol style="list-style-type: none"> <li>8. Visual clarity is the average of these two distances. Record the result on the recording sheet.</li> </ol>	<p><b>Things to discuss:</b></p> <ol style="list-style-type: none"> <li>1. Ask students to think about what the clarity tube might be used for.</li> <li>2. Standing in the stream, disturb some sediment and discuss how this might happen in a stream.</li> <li>3. Discuss why the sample needs to be taken from up stream.</li> <li>4. Discuss what might make the water dirty and who would be affected by it. <i>Animals living in the stream such as the insect larvae need clean, clear running water. Clear water allows us to see the bottom of the stream if we want to go swimming.</i></li> </ol> <p><b>Reflect</b></p> <p>What was the difference between the two samples?          Who or what do you think would be affected by water that has low clarity?          What do you think might be causing a high or low clarity reading in your stream? What does this tell us about the water quality?          Is there anything that could change to improve the water clarity?</p>

**Action**  
 Can students identify areas of the stream that could be improved through fencing or riparian planting?  
 Students could develop an action plan for the management of the stream.

