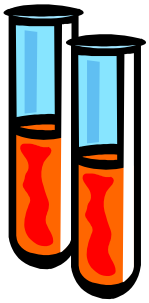
SUCHMAN INQUIRY



Discrepant Event: Colloid vs. Solution

Prepare two test tubes in advance for the activity. Add warm water with red food color to one and gelatin dissolved in warm water to the second tube (keep the gelatin in liquid form). Hold a pin light flashlight up to each tube. In the red water, students will not see a beam; however, in the gelatin, they will see a beam. The solutions look to be the same, and you do not give any information to change this thinking. Why the discrepancy?

Background: Gelatin is a colloid that does not dissolve totally in water. The protein molecules are suspended in the solution. The molecules are large enough to reflect the light, like tiny mirrors, back to the eye of the person watching the demo. As a result, that individual will see a beam. In a true solution, as observed in the red water, a beam is not visible. No light is reflected back to the eye because the beam passes through the solution. The beam is evident in colloids but not in solutions, and this test is actually a test for a true solution. The beam in the colloid is named the Tyndall effect. Other colloids include milk, whipped cream, shaving cream and fog.