Lesson Plan: Water Filtration

Skills: Research steps

Grade Level: Middle School (6-8)

Time : 50-60 minutes

Objective: Students will…
Understand the importance of clean water

Identify sources of water pollution

Explore ways to conserve and protect clean water sources

Materials Needed:

- Large jar or clear container filled with water
- Food coloring (pollution simulation)
- Coffee filters
- Sand, gravel, and activated charcoal (for water filtration activity)
- Small containers or cups
- Pictures or illustrations of water sources and pollution

Duration: Approximately 60 minutes

Introduction (15 minutes):

1. Ask students why water is important for humans, animals, and plants.
2. Brainstorm different sources of water (rivers, lakes, oceans) and discuss where clean water comes from and how it gets polluted.

Activity 1: Water Pollution Simulation (10 minutes):

1. Show a clear jar or container filled with water.
2. Add a few drops of food coloring (representing pollutants) into the water. Discuss how pollutants can enter water sources.
3. Observe how the water changes color and discuss the impact of dirty water.

Student Activity: Water Filtration Experiment (25 minutes):

1. Divide students into small groups.
2. Provide each group with a set of materials (coffee filters, sand, gravel, activated charcoal).
3. Challenge them to create a filtration system to clean a sample of dirty water (you can use muddy water or water with visible contaminants).
4. After constructing their filters, have each group pour their dirty water through their filtration system into a clean container.
5. Discuss which materials worked best for filtration and why. Reflect on how filtration systems mimic natural processes and human-made water treatment plants.

Conclusion (15 minutes):

1. Gather students together to reflect on what they learned about clean water and water pollution. Together, brainstorm actions students can take to conserve and protect clean water sources in their daily lives. Have students make a list of solutions steps.
2. Summarize key points about the importance of clean water and encourage students to share their thoughts or experiences related to the activities.