

## Topic 6 - Water Quality and Management

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1. Name three factors that affect water quality.  
Dissolved substances, different organisms, chemicals, and sediments can affect water quality.
2. Describe three ways that human activities can affect water quality.  
Your answer should include any three of:
  - Urban run-off
  - Treated sewage
  - Agricultural run-off
  - Acid rain
  - Industrial waste
  - Oil spills
  - Garbage from boats
3. How can micro-organisms affect water quality?  
If concentrations of micro-organisms in the water are too high, they can cause health problems for humans.
4. Describe the importance of water monitoring.  
Water monitoring tells us whether the government guidelines for water quality standards are being met.
5. Describe the stages in the treatment of drinking water.  
Your descriptions should include the following steps:
  - Water in a river or lake moves through an intake pipe. A screen keeps out fish and debris.
  - Pumps move water to the treatment plant.
  - Chemicals are added. They stick to suspended materials and most bacteria.
  - The suspended solids settle to the bottom of a huge settling tank.
  - The water is pumped through filter beds of sand and gravel. These trap smaller particles of suspended material, leaving clear, drinkable water.

- Chlorine and ozone may be added to kill remaining germs. Fluoride is added in many communities for teeth protection.
- The clean, safe drinking water is delivered through underground pipes to homes and businesses.

6. **Apply** One of the keys to managing a sustainable resource is "getting more from less." Describe how this could be applied to water management.

It is less expensive to avoid wasting water than to develop methods to obtain more. If people used less water through conservation, then we would not need as much of our water resources.

7. **Thinking Critically** If the water cycle can purify water, why do we still need to protect our water resources and use them carefully?

Precipitation falls into oceans, rivers, streams, and the land, where it is contaminated by pollutants. These pollutants must be removed before water can be used safely. Some pollutants cannot be removed and they make the water unusable. To keep our water resources clean and safe, we must stop pollution.