



50 minutes total

Lesson Plan 03

Introduction to Drinking Water Quality Testing



Overview of Activities

1. Introduction
2. Why Test
3. Introduction to Drinking Water Quality Testing (DWQT)
4. Testing Option Selection (Optional)
5. Review

Learning Outcomes

At the end of this session participants will be able to:

1. Explain the purpose of DWQT
2. Examine different testing options
3. Select testing options

Materials & Preparation

- Activity: Introduction
- Unsealed water bottle with no label (obviously used) filled with clear water
- Activity: Group discussion
- Activity: Pair share
- Prepare: Flip chart paper with the following titles: “Why Test Water Quality,” “Alternatives for Testing Water Quality (optional)”
- PowerPoint: Introduction to Drinking Water Quality Testing
- Workbook Reference: Testing Options
- Workbook Review: Scenario and Choose a Testing Alternative

Recommended Reading

- Technical Brief: Sanitary Inspections

5 minutes

Introduction



1. Hold up an unsealed bottle of water, without a label and clearly not a new bottle but the water appears clean/clear.
2. Ask for a volunteer to taste the water.
3. Hopefully no one will volunteer. Act surprised if this happens. Adapt the lesson if someone does volunteer.
4. Ask: “Why should you **not** drink this water?”
 - The bottle is not sealed
 - You don’t know where the water came from
 - Although the water looks clean we don’t know that for sure
5. Ask: “How can we ensure that our water is safe to drink?”
6. Present the learning outcomes or an overview of the lesson.

10 minutes

Why Test



1. Explain to the group that ensuring our drinking water is safe is one reason to test our water.
2. Ask: “What additional reasons are there for testing the quality of our drinking water?”
3. Record the responses on a flip chart.
Answers may include:
 - Identify problems
 - Adopt precautionary measures
 - Raise awareness
 - Determine the effectiveness of community or household water treatment technologies
 - Select an appropriate water source
 - Influence government to supply safe water

15 minutes

Introduction to Drinking Water Quality Testing



Use PowerPoint: Introduction to Drinking Water Quality Testing for this presentation.

1. Facilitator holds up a glass of water and asks, “What are some ways to determine if this drinking water is OK to drink?”

2. Ask partners to discuss the question for two minutes and share some of their ideas with the large group.
3. Explain that there are numerous alternatives for determining the quality of drinking water.
4. Use the PowerPoint presentation to examine some of the alternatives or list and discuss alternatives on a flip chart.
 - Observation
 - Portable test kits
 - Project laboratory
 - Commercial laboratory
 - Mobile laboratory
 - Sanitary Inspections

10 minutes

Testing Option Selection (Optional)



1. Explain there are many factors to consider when planning to assess drinking water quality.
2. Ask: “What are some factors that could affect your choice of testing options identified in the last lesson?”
For example: budget
3. Working in pairs, have participants discuss possible factors.
4. Ask participants to share some of the factors they identified with the group.

For example:

- Objectives
- Range of concentration
- Required accuracy and precision
- Time period between sampling and analysis
- Technical skills and equipment required
- Familiarity with the method
- Availability of resources

Trainer Tips

This lesson is an opportunity to introduce project planning for DWQT.

Factors identified here can be used in future DWQT project planning activities.

5. Explain that project planning is an important step in the process of DWQT but is outside of the scope of this workshop.

Key Points

- This is a discussion of general strategies for planning to assess drinking water quality
- Explain that specific test methods will be discussed in more detail later in the workshop



Review

1. Read the following scenario to the group:

You are a project manager, you have come to an isolated, rural community where there is an ongoing household water treatment project. You would like to introduce water quality testing to the HWTS project.

You therefore, need to demonstrate the improvement in water quality by testing the drinking water for microbial contamination before and after filtration.

You have a modest budget and some water testing skills.

2. Ask: "What testing alternative could you use? Why?"
3. Remind participants that they can refer to the testing alternatives in their workbooks.
4. Allow five minutes to discuss the scenario with their partner.
5. Ask for volunteers to share their answers with the group. Responses will vary.

Possible answers:

- Portable test kits for microbiological testing would be a good choice because the area is isolated and it would be difficult to transport samples to a lab. It would be expensive to bring in a mobile lab.
- There is a modest budget for buying supplies and equipment and you have some training in water quality testing. The technician could test the water before and after filtration on numerous filters and show how filtration decreases bacterial counts.

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