

## Measuring pH

### Introduction

Welcome to the Measuring pH learning module. This section contains a short video that provides information on the following topics:

- How to calibrate a pH pen
- How to collect a water sample
- How to measure the pH of a water sample using a pH pen

After completing this module you should be able to perform the following:

- Identify a pH pen and its parts
- Calibrate a pH pen
- Collect a water sample
- Use a pH pen to measure the pH of a water sample

To begin the module, click the **Next** button at the bottom right of the screen.

## Measuring pH

### Identifying a pH pen and its parts

SCORE volunteers measure pH using a pH pen, like the one shown on your screen. Before learning how to measure pH, take a moment to identify the different parts of a pH pen.

## Measuring pH

### Procedures

To begin, move the pH pen switch to the "on" position and remove the electrode's protective cap.

#### Try it yourself!

Turn on the pH pen by moving the switch to the "on" position. Click on the **Next** button when you are ready to proceed.

#### Good job!

Now, remove the cap of the pH pen by clicking on it.

#### Excellent!

Please click on the **Continue** button.

Before measuring the pH of a water sample, the pH pen must be calibrated for accuracy using buffer solutions of known pH values. Buffer solutions are liquids designed to resist changes in pH when acids or bases are added.

Start the calibration process by immersing only the tip of the electrode in a sample of pH 7 buffer solution. Stir gently and allow the digital reading to stabilize.

Use a small screwdriver to adjust the pH 7 trimmer until the digital display reads 7.00.

**Try it yourself!**

Turn the pH 7 trimmer until the digital readout reads 7.00.

**Excellent!**

Please click on the **Continue** button.

Continue the calibration process by using a buffer solution of pH 10. Before doing so, be sure to rinse the electrode with distilled water.

Immerse only the tip of the electrode in a sample of pH 10 buffer solution. Stir gently and allow the digital reading to stabilize.

Use a small screwdriver to adjust the pH 4/10 trimmer until the digital display reads 10.00.

**Try it yourself!**

Turn the pH 7 trimmer until the digital readout reads 7.00.

**Excellent!**

Please click on the **Continue** button.

Calibration of the pH pen is now complete. Before measuring the pH of a water sample, be sure to rinse the electrode with distilled water.

To start the measurement process, collect a water sample by gently submerging a sampling beaker into the creek or river. Once it is full, remove the beaker and set it down.

Take the pH pen and immerse only the tip of the electrode into your sample. Stir gently and allow the digital reading to stabilize.

Determine the pH and record your sample measurement.

**Try it yourself!**

Using the digital readout, find the current pH of the water sample. Enter and check your answer below.

**Excellent!**

Please click on the **Continue** button.

When finished, be sure to rinse the electrode with distilled water and move the pH pen switch to the "off" position. To keep the electrode from drying out, add a few drops of pH 7 buffer solution to the protective cap. Replace the cap and store the pen.

## Measuring pH Review

Congratulations! You have completed the Measuring pH learning module. In this section you learned about the following topics:

- How to calibrate a pH pen
- How to collect a water sample
- How to measure the pH of a water sample using a pH pen

You should now be able to perform the following:

- Identify a pH pen and its parts
- Calibrate a pH pen
- Collect a water sample
- Use a pH pen to measure the pH of a water sample

To choose another module, click the drop-down menu at the top of the screen.