

Measuring Conductivity using the Phywe Conductivity Sensor

PHYWE
excellence in science



Difficulty Level



Easy

Group Size



2

Preparation Time



10 minutes

Completion Time



10 minutes

Inspire young scientists and get them excited about their next discovery.

What is Datalogging?

Datalogging is the process of collecting and storing data over time, looking at data sets, data points and logging intervals. This seamless collaboration between science, technology and data analysis is becoming a vital tool in education, for teachers and students alike.

What are the educational benefits of datalogging?

- Develops higher-order thinking skills
- Encourages scientific reasoning skills
- Supports inquiry-based learning
- Improves and develops numeracy skills
- Works very well with EAL students
- Links the computing and science curriculum

National Curriculum

- ✓ Key Stage 4 Chemistry, Chemical Changes
Electrolysis of molten ionic liquids and aqueous ionic solutions

Experiment:

Measuring the conductivity of different water samples using the Phywe Conductivity Sensor.



We can use the Phywe conductivity sensor to demonstrate the purity water by analysing its conductivity.

The higher the level of impurities dissolved in the water, the higher the ion concentration and therefore the higher the conductivity of the water (pure water being closer to zero).

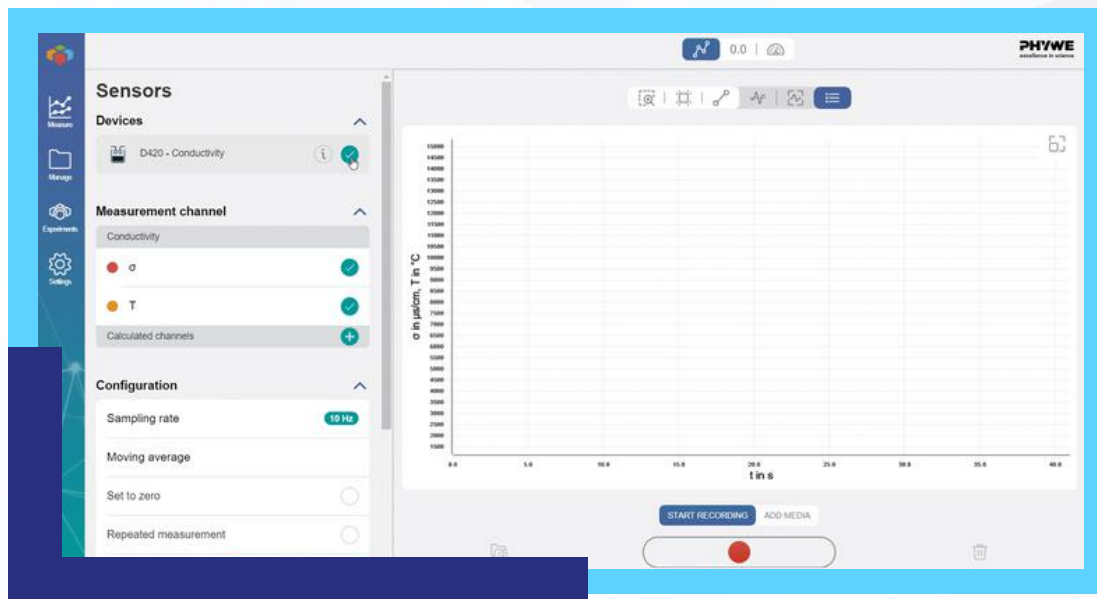
What you need to get started:

- 1 x Phywe conductivity sensor (DA220080)
- 4 x 250 mL beakers labelled A, B, C, D
- 4 x water samples from different geographic areas
- 1 x wash bottle for rinsing between samples



Set up the conductivity sensor with the MeasureApp:

1. Open the MeasureApp on your chosen device.
2. Connect the sensor to the MeasureApp: simply press the centre button for 3 seconds and the Bluetooth light will flash red, once connected to the MeasureApp, the light will turn green.
3. On the software the sensor will appear in "devices", click on this, and it's ready to go.
4. In the software choose "measurement type - Point". Press start and use the secondary button to take point values.



What you need to do:

1. Using the conductivity sensor, take a measurement of the conductivity of water sample A.
2. Rinse the probe in distilled/deionised or pure water
3. Repeat step 1 and 2 with the other water samples
4. When you have finished, wash the electrode thoroughly and place it back into the storage solution.



Other information:

Conductivity is a measure of the ability of water to pass an electrical current due to dissolved salts and other inorganic chemicals. Conductivity increases as salinity increases.

Conductivity is useful as a general measure of water quality. Significant changes in this can be an indicator to water companies that a discharge or some other source of pollution has entered their water.

This experiment could be repeated with water samples from different areas of the country to see geographically, where has the hardest/softest drinking water.



Why not compare this with different brands of bottled water?



To get more information on datalogging, our range of Phywe Bluetooth sensors, and for more useful resources, visit our website.

Free software is provided with our range of sensors. Compatible with the majority of devices, datalogging is simple to understand and cost-effective.

Explore the range...

