

ArtiFactsheet: Clinometer

The clinometer, also called an inclinometer (or in surveying, an Abney level) is part of a group of instruments that can be used to measure angles. Some other devices that fulfill a similar role include the sextant and the astrolabe. Both the astrolabe and sextant were mainly used by navigators on ships to measure the angles between stars (in particular the North Star) and the horizon.

In contrast, the clinometer is used mainly to measure angles on land. This information can then be used to determine such things as the incline of slopes and the height of mountains, trees and even clouds. Clinometers have been around for a long time. They initially began as a simple plummet tool (a string with a weight at the end of it), but by the end of the 18th century it was a sophisticated tool that included such things as bubble levels, sights and telescopes. A well-known clinometer is the Abney level. Invented by William Abney before 1880, it consisted of a small telescope, a semicircle divided into degree and a bubble tube.

Many artifacts related to clinometers can be found in the collection of Ingenium – Canada’s Museums of Science and Innovation:

ingeniumcanada.org/ingenium/collection-research/collection.php.

Artifact Details

Clinometer, circa 1951

Manufacturer: DOT Meteorological Div. (Canada)

Artifact no. 1987.0738.001

The clinometer pictured below was designed and used by Meteorology Services of Canada to determine cloud base height from the early 1950s to 1958. It was made out of cast iron and brass parts and was painted black.

Fun Fact

In an 1831 letter to John Henslow, Charles Darwin stated his excitement about his new clinometer and how he was going to use it on his geology trips

