

2b – A Guide to Data Collection Techniques

The way in which a researcher goes about collecting their data is very much dictated by the focus of their research and their specific research questions that require answering. The data collection methods they employ may also be designed with the particular research site in mind as well as the time and resources they have available to them.

There is no such thing as a definitive way of collecting a particular piece of data: each piece of research is individual and while certain techniques (such as those suggested in this series of guides) are well used by geographers, they should also be adapted to suit the specific conditions and needs of the investigation.

Quantitative Measuring

Many geographical research projects will involve some form of numerical measurement of a phenomenon such as width, depth, velocity, temperature or mass. This is particularly true of studies into elements of physical geography, where measurements in the field at different geographical locations allow the researcher to compare one area with another.

These measurements may be taken at a number of selected single points or along a transect - a line on a map that links two points and along which a researcher takes regular recordings. A researcher may also wish to take measurements at the same point a number of times over the course of a specified time period if they want to see how a phenomenon changes over the space of a day, a week or even a year.

Many school and university departments will have a range of fieldwork equipment which a researcher can utilise for their study. This equipment is designed to make quantitative measuring easier in the field. Some common fieldwork equipment and its uses are listed below.



Image: Flickr CC User Aidan

Anemometer: Used to measure wind speed.



Image: Flickr CC User Tre Briercliffe

pH meter: Used to measure acidity or alkalinity of a water sample.



Image: RGS-IBG

Callipers: Used to measure the dimensions of small objects such as stones and pebbles.



Image: RGS-IBG

Clinometer: Used to measure the angle of a slope.



Image: Alex Segre

Light meter: Used to measure the amount of light or cloud cover.



Image: Flickr CC User Jonny Kriedler

Compass: Used to find out a direction or bearing.



Image: Rebecca Stokes

Flow meter: Used to measure the velocity of moving water.



Image: RGS-IBG

Quadrat: Used to measure species abundance in a set space.



Image: Flickr CC User Tim Ellis

Stop watch: Used to measure periods of time.



Image: Anne Vaughan

Sweep net: Used to collect invertebrates from a water course or a tree canopy.



Image: Alex Segre

Rain gauge: Used to measure precipitation levels.



Image: RGS-IBG

Tape measure / Meter stick / Trundle wheel: Used to measure distance, height, width or depth.



Image: Flickr CC User Toshiyuki IMAI

Thermometer: Used to measure temperature.



Image: Wikicommons

Smartphone Decibel Counter: Used to measure noise levels.

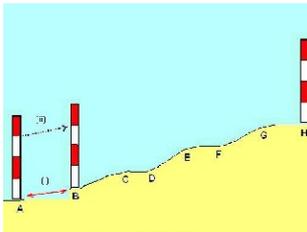


Image: RGS-IBG

Ranging Pole: Used to mark out features that occur in straight lines.

Sometimes the data itself cannot be collected directly in the field and a sample is taken which can be analysed in more detail back in a laboratory or classroom.

Handheld devices such as smartphones or tablets can be of enormous use to the researcher in the field. Quantitative measurements can be recorded directly into spreadsheet which allows the researcher the ability to manipulate and analyse the data more easily at a later date. Their use can also allow the researcher to easily download the data into a GIS package, enabling them to map their results effectively. Further guidance is available at www.rgs.org/dataskills.