Data collected during geographical fieldwork often has a spatial element to it - different points along a transect may, for example, display different survey scores, or different sites along a river's course may show measurements in any number of variables. Secondary data equally may be spatial in nature, such as census data that tells us about the average household income for different wards.

Presenting spatial data alongside numerical data is very often best done by using a map and GIS packages such as ArcGIS provide a quick, editable and visually effective means of creating maps. One of the simplest ways of projecting data onto a GIS map is to use numerical data that has been pre-processed in an Excel file.

The nature of the data

In order to create maps with data located on them, the data itself has to have locational references in it. ArcGIS can automatically detect various spatial data formats within a table created in Excel. These formats include:

- Longitudes and Latitudes

- Postal codes

- Place names, including towns, cities and counties

When collecting and processing your data therefore, it is important that you collect the locational data at the same time. For most students in the field, because they are dealing with a fairly small total spatial area (such as the footprint of one town) it is best to deal in latitude and longitude when siting their data. This can be done using simple GPS apps on a smart phone - in Google maps, simply dropping a pin will give you a latitude and longitude as a decimal fraction with west and south coordinates being denoted by a minus symbol.

E.g. Sandown has a latitude and longitude of   50°39'18.36' N   1°09'14.76' W

or a decimal fraction of   50.6551   -1.1541

The format of the data

In general, it is best for students to keep their data in as simple an Excel table as possible. They should start with the locational data in columns and then add additional columns to show the data at those points. If they are using latitude and longitude data, latitude should be written in the first column and longitude in the second. The data should then be saved as a CSV file (with the suffix .csv).

|	Latitude	Longitude	EQS Score	Decibel reading
1	Latitude	Longitude	EQS Score	Decibel reading
2	50.655660	-1.150913	2	68
3	50.655102	-1.152136	1	65
4	50.654545	-1.153552	3	65
5	50.653796	-1.155483	4	63
6	50.656531	-1.151793	2	65
7	50.657007	-1.153595	2	63
8	50.657633	-1.154947	4	59
9	50.657959	-1.156192	4	55
10	50.656912	-1.150312	1	62
11	50.657959	-1.150248	2	60
12	50.659156	-1.150441	3	60
13	50.660448	-1.151192	5	55
14	50.656517	-1.148638	3	58
15	50.657129	-1.146772	4	60
16	50.657809	-1.144926	5	54
17	50.658694	-1.143017	4	45
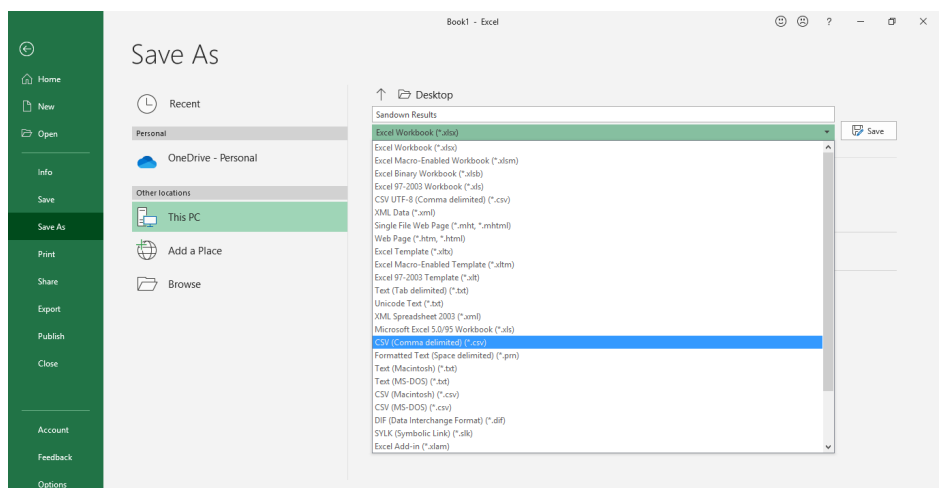
Making the map using ArcGIS

Before one can 'see' the data on the map, one must add the data as a file to the Content folder in ArcGIS.
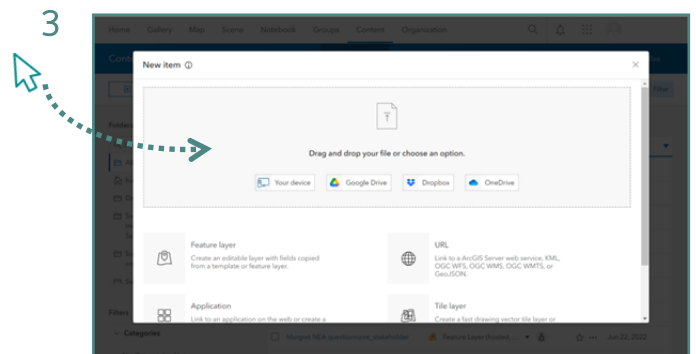
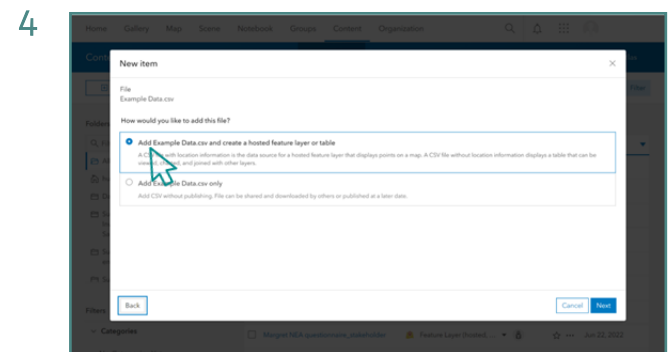1. From your or your organisation's HOME page, select CONTENT.
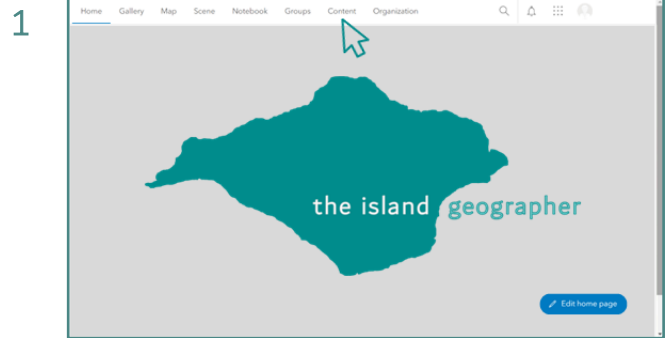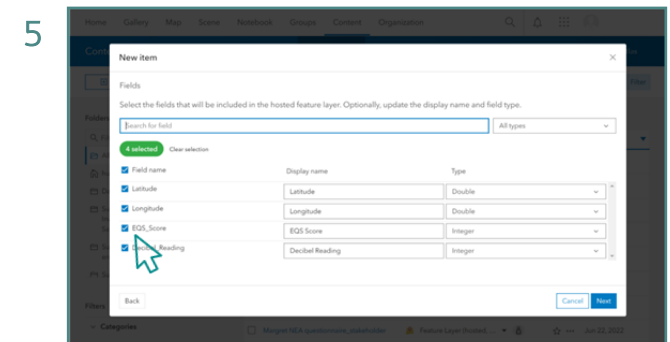

2. Select NEW ITEM.
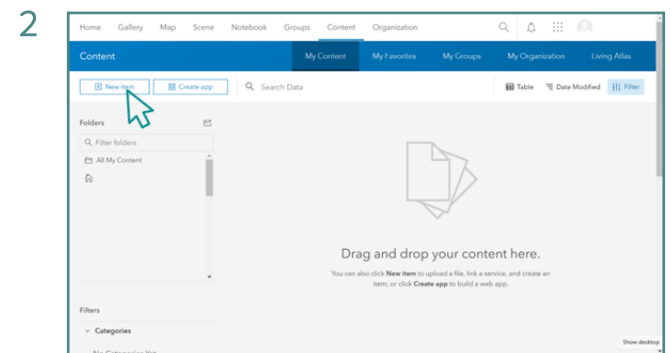
3. Find your CSV file in your file explorer on your device and drag it into the upload box.
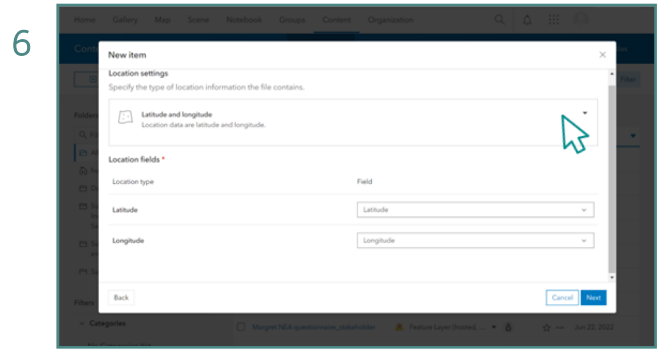

4. Select 'ADD [FILENAME].CSV AND CREATE A HOSTED FEATURE LAYER OR TABLE' then select NEXT.
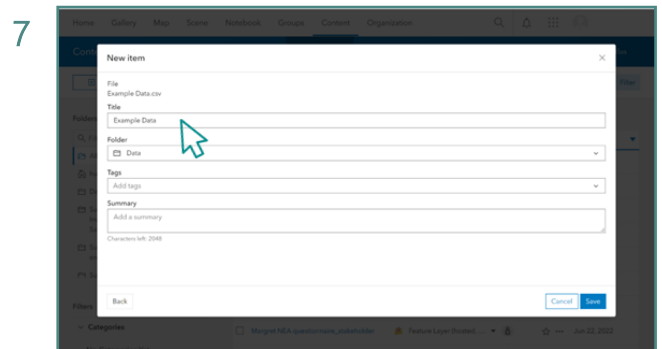

5. Ensure that all the fields you wish to be displayed on the map are selected. Select NEXT.

6. Select the form of locational data you have used in your csv file. Select NEXT.

7. Give your data file a title (this will also become the name of your layer) and select where you would like the data file to be saved within your ArcGIS area. Select SAVE.

8. Select the map itself through OPEN IN MAP VIEWER. The data will automatically be detected and in most cases, a map will open with the location of data points displayed. From here, you can start to manipulate the way the data is presented (see the island geographer guide 26) and print or save their map when you are ready.