Key question- **“Does flood risk change over time at Apperley Bridge?”**
You have collected data that measures change over time.
The timescale of this change may be short (different times during the day) or over a much longer period (years – to reflect change on a high street).
We have looked at a google image of Apperley Bridge in November 2012 and compared it to a field sketch present day.
We have proved that the flood risk has reduced in Apperley Bridge.

Located Bar chart
A located bar graph/chart is a bar graph is plotted onto a map (in the location the data is from).
The advantage of doing this rather than a normal bar graph is it helps show the differences between places using visual comparison.
Learn this phrase – **‘Excellent spatial representation of data’**

Shows the location that we collected our data
Easy to compare the data between places

Google street photos are qualitative
Strengths
the students to get a real feel for the area 'walk' through it, making use of the 360° imagery.
Showing how places change over time
Weakness
Subjective
Choice of what you photograph
Can be manipulated by technology
Not up to date

Egan’s Wheel is a tool to evaluate sustainability in an area, which can inform us of levels of inequality (social, economic and environmental).

Secondary data- we used the Google street photos. This clearly shows how places change over time.

The **problem** with our secondary data is that it was out of date. The most recent house sale in Malham was Feb 2021 and the most recent crime data was July 2022.
The **benefit** of secondary data is it is **time saving** and we don’t have to collect the data. Saves money as it is done for us

Egan’s Wheel suggests that sustainable communities must meet ‘the diverse needs of existing and future residents, their children and other users’ by offering choice. In order to be sustainable, communities must:

- Make effective use of natural resources
- Enhance the environment
- Promote social cohesion and inclusion and
- Strengthen economic prosperity.

Quantitative technique collected factual data.
Techniques to collect data
-Census data
-Traffic count
-Pedestrian count

Qualitative techniques means opinion-based.
Techniques to collect data
-Photos
-Questionnaires
-Bipolar surveys
-Likert surveys

How to remember Qualitative?
What is your favorite quality street chocolate?
Qualitative equals Opinion

Bipolar surveys or Likert surveys use opposite adjectives or opposite descriptors.

Strengths
Easy give an area a scale
Can easily compare different areas

Weakness
Relies on students opinion, so it can be bias.
Difficult to come to a conclusion if too many choose a neutral/middle response.

Transects have disadvantages- data can be missed between sampling points if the gaps are too large.

Primary data is carried out and collected by yourselves – this can include field sketches, photographs, carrying out questionnaires

Secondary data is collected using resources from online, newspapers, books, magazines etc. It is resources that you have not found yourself.

Photos are qualitative –
Strengths - They are great for showing inequality
Quick way to capture information about a landscape or feature
Comparing different places easily
Showing how places change over time
Weakness
Subjective
Choice of what you photograph
Can be manipulated by technology

Mitigating risk in geography refers to the idea that danger of things can be reduced e.g. flooding risk in Apperley Bridge.
Flood walls, flood gates and strengthening the bridge.

Sampling techniques: Random sampling

Least biased of all sampling techniques, there is no subjectivity - each member of the total population has an equal chance of being selected

- Can be obtained using random number tables
- Microsoft Excel has a function to produce random number

These can then be used as grid coordinates, metre and centimetre sampling stations along a transect, or in any feasible way.

E.g. Before we go out to survey people used a random number generator to pick 10 numbers out of a 100 people who walk past. so we will interview these people. 13, 19, 37, 56, 63, 66, 71, 84, 89, 95.

Advantages:

- Can be used with large sample populations
- Avoids bias

Disadvantages:

- Can lead to poor representation of the overall parent population or area if large areas are not hit by the random numbers generated. This is made worse if the study area is very large
- There may be practical constraints in terms of time available and access to certain parts of the study area

Sampling techniques: Opportunistic Sampling

Uses people from target population available at the time and willing to take part. It is based on convenience.

An opportunity sample is obtained by asking members of the population of interest if they would take part in your research. An example would be selecting a sample of students from those coming out of the library.

This is a quick way and easy of choosing participants (advantage), but may not provide a representative sample, and could be biased (disadvantage).

This is what we have done for the our fieldwork to identify safe areas to undertake the sampling.

Sampling techniques: Stratified sampling:

The results are proportional and representative of the whole.

A. Stratified systematic sampling

The population can be divided into known groups, and each group sampled using a systematic approach. The number sampled in each group should be in proportion to its known size in the parent population.

E.g. 50% of the population are female so 50% of the people questioned should be female.

30% of population retired so 30% of the people in the sample should be retired.

Advantages:

- More representative of the whole population
- It is very flexible and applicable to many geographical enquiries

Disadvantages:

- The proportions of the sub-sets must be known and accurate if it is to work properly
- It can be hard to stratify questionnaire data collection.

Systematic Sampling

This is where observations are taken at regular intervals.

For example, every 10 metres along a line running from seashore inland across a beach, or recording the age of every fifth person in a shopping centre

Advantages:

1. Simple and convenient:
2. Independent:
3. Little chance of bias: sample is free from any kind of bias.
4. Helps in random selection:

Disadvantages:

1. High chances of sampling error: If there is hidden periodicity pattern in the population there are very high chances of error.
2. Works only for random population: If the population list is on random order then this technique is almost as random sampling and if not then sampling is not reliable.
3. May not be suitable for large population: Because it is very difficult to create a list of all the names.