Fieldwork enquiry question: Does Carding Mill Valley's river follow the Bradshaw Model?

Hypothesis (Based on the Bradshaw Model):

Width: Channel width will increase downstream.
Depth: Channel depth will increase downstream.
Velocity: Average velocity will increase downstream.

Reason location is suitable for physical enquiry:

- Easy to get to from school and accessible via the motorway.
- Managed by the National Trust so able to access different sites.
- You can go into the river and it is safe to measure.
- All data can be collected in one day.

Methods 1: Primary, Quantitative Collection.

1. Width 	**What?** Random sampling. Tape measure extended between two people from bank to bank. Reading recorded. **Advantages?** Easy to use and required little equipment. **Disadvantages?** Only measured the river at one point at each stage, which may give unrepresentative data.
2. Depth 	**What?** Systematic sampling. Used a tape measure &metre stick. Measured the depth every 25cm across the width at each site. **Advantages?** Easy to use and required little training. **Disadvantages?** Only did across one section of the river. May be some human error.
3. Velocity 	**What?** Systematic sampling. Used a stop watch to time how long it took for a cork to travel 10m down the river. Repeated 3 times at each section then took an average. **Advantages?** Easy to complete & required little training.. **Disadvantages?** Cork kept getting stuck which could have made data inaccurate.
4. Pebble Size 	**What?** Measured the width of 3 random samples of rocks from each section of the river course with a ruler. Also assessed how angular on a scale of 1-6. **Advantages?** Easy to do. No training needed. **Disadvantages?** Random and about our opinion.

Methods 2: Qualitative Data Collection

1. Field Sketch 	**What?** Primary data. Drew a sketch of the river valley at the middle course. **Advantages?** Easy and quick to complete. Required little training. **Disadvantages?** Rain on the day made it difficult to draw. Only completed for one section so not representative of the whole river.
2. Annotated Photographs	**What?** Secondary data. Random sampling. Annotated photos of the river from each section. **Advantages?** Easy to use and annotate. **Disadvantages?** Photos may not be representative of when we visited.

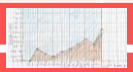
Paper 3
Physical Fieldwork- Carding Mill Valley

AQA

Risk assessment

Slips, Trips and Falls.	Low Risk	Students to stay in groups. Students to weak suitable footwear like wellies or walking boots.
Wildlife	Low Risk	To keep a distance from the animals (e.g. sheep).
Cars	Low Risk	Students to stay in groups. Teacher will do a headcount. Stick to the footpath wear possible.

Presentation Methods



River Cross-Section	Shows the relationship between the width and depth of the river in the upper, middle and lower course.
Scatter Graphs	Positive correlation: As one variable increases so does the other. Negative Correlation: As one decreases, the other increases. No correlation: No relationship between the variables.
Annotated field sketch	Copied field sketch we drew on site into our write up booklet and annotated with key river features we could see e.g. river channel…

Data Analysis

As shown by the Bradshaw Model, I expected the river depth and width to increase downstream. My river cross-sections illustrated that there was a positive relationship between width and distance downstream, with it being narrow in the upper course and widest in the lower course. However, results were not as expected for depth, with it being deepest in the upper course and shallow in the lower course. Overall, my data for width supported the Bradshaw Model but this was not the same for depth.

Fieldwork Key Terms

Primary Data: Data collected first hand.
Secondary Data: Data that has been collected by someone else.
Qualitative Data: Descriptive data.
Quantitative Data: Usually numerical data.
Random sampling: Chosen entirely at random.
Systematic sampling: Sampling at a fixed interval.
Stratified Sampling: Sampling different groups.

The Connecting Piece

Site 4 illustrated that part of the river had undergone channel straightening to reduce flood risk as there were homes close by. Bi-polar surveys (subjective) & annotated photos used to collect data.

Evaluation (What went well? Specific problems? Improvements? Limitations?)

Velocity	We managed to collect velocity measurements at all 3 sites. However, one issue we encountered was the cork kept getting stuck between the bedload. This meant that our velocity data was not reliable. An improvement I would make is to use a flow metre, which would make out results more reliable.
Width	We managed to easily collect data on the width of the river for each site. However, we only measured the width once for each site, leaving data vulnerable to human error and therefore not fully reliable. An improvement we could make is measuring width at least 3 times at each site and taking an average, which would make it more reliable.
General Limitations.	It rained while we were there. Some equipment was faulty. We were only there for one day.
General Improvement	We could go at a different time of year. We could go to more sites. We could go to another location and compare. We could take other measurements e.g. gradient

Conclusions

From the data I collected at Carding Mill Valley on depth, the main conclusion I can draw is that as we went downstream, depth decreased. This therefore demonstrates that Carding Mill Valley's river does not follow the Bradshaw Model in relation to depth.

Fieldwork enquiry question: How sustainable is Birmingham's regeneration plan?

Introduction-Birmingham's Big City Plan

A 20-year city centre masterplan. A vision to encourage and support Birmingham's continuing transformation into a world class city centre. Covers every aspect of the built environment including: Creating over 50,000 new jobs, creating a well-connected walkable city centre, integrating sustainable development and addressing the issue of climate change…

Reason location is suitable for physical enquiry (Birmingham):

Good example of an urban area (visited 4 sites: Birmingham Markets, Centenary Square, Mailbox/The Cube and Park Central).
Easy to get to from school (less than 30 minutes).
All sites easily accessible as it is a public space.

Methods looking at the Environment and Sustainability

Environmental Quality Survey

What?
Primary data (quantitative). Used a stratified sampling techniques (random samples taken within a specific site). Ranked different aspects of each site with 2+ being very high and -2 being very poor.

Advantage?
This method was very easy to do and we could rate an area based on a series of different aspects. It also did no9t require any specialised equipment.

Disadvantages?
This method was subjective and therefore based on personal opinion. People would not always agree with each other.

A Sustainability Index

What?
Primary data (quantitative). Used a stratified random sampling technique. We rated different aspects of a site on a scale from 1-4, with 1 being little evidence of sustainability and 4 being high.

Advantages?
This was an easy method to use, with no equipment needed.

Disadvantages?
This method was also very subjective, based on our own personal opinion. Different people got different results and did not always agree.

Method: Questionnaires

What?
Primary data (qualitative). Used a stratified random sampling techniques. We randomly asked people who were within the site 7 questions about their background, whether they thought Birmingham had changed and if the regeneration had been positive or negative.
Advantages?
This was an easy method to use. It required no additional equipment and little training.

Disadvantages?
Answers were subjective and based on the interviewees opinion. There was nobody present at site 4 so we collected no data here for this method. Some interviewees may not have understood what the questions were asking (e.g. what is meant by regeneration).

Method: Old and New Photo Analysis

What?
Mix of primary (new photos) and secondary (old photos) data (qualitative). We looked and annotated a series of photos from different sites in Birmingham and annotated with any geographical features. This allowed us to see how the city has changed over time.

Advantages?
This allowed us to see different perceptions of an area and how it changed over time.

Disadvantages?
It was difficult to find old photos of the specific sites we visited.

Paper 3
Human Fieldwork- Birmingham

AQA

Presentation Methods

Positive Negative Bar Chart	Demonstrates the data for the environmental quality survey. Can easily see what scored well (+value) and what scored poorly (-value).
Pictograms	Used to illustrate data for the sustainability index. One symbol was equal to a score of 1. Made the scores for each site easy to see.
Annotated Photos	Showed the results of the pedestrian count for each of the 4 sites. Allowed us to easily compare all sites.

Data Analysis

My data from the sustainability index, illustrated by pictograms, showed that the least sustainable site was the Bullring markets (site 1) with a total of 17 and an average of 2.8. The most sustainable site was Centenary Square (site 2) with a total of 20, and an average of 3.3. This is because they had regenerated the old site adding features of urban greening, making it more sustainable.

Risk assessment

Traffic and Vehicles	Low risk	Only crossed at suitable locations like crossings. Avoided walking in places with high traffic. Stay with the rest of the class and teacher.
Weather 	Low risk	We took suitable clothing such as a raincoat in case of rain. We also Ensured we had plenty of water in case of hot weather.
Strangers and getting lost	Low risk	Avoid talking to people you don't know. We stayed with our class group and everyone was in their school uniform. Teachers did a head count at each site to ensure we all stayed together.

Evaluation (What went well? Specific problems? Improvements? Limitations?)

Questionnaires	We managed to collect data from a number of people from most sites illustrating the publics opinion on the regeneration of Birmingham. However, there were more people present at some sites than others, with no data collected at site 4, limiting the reliability. An improvement I could make would be to carry out online surveys where more people are likely to respond and answer truthfully, which would make results more reliable.
Environmental Survey	We managed to easily collect data on the environmental quality of an area for each site. However, this data was subjective and was therefore dependent on personal opinion, which made results unreliable. An improvement we could have made was to take the average/most common result in our group, which could have made results more reliable.
General Limitations.	We were only there for one day. We went in the middle of a working day. We only visited 4 sites.
General Improvements	We could go on multiple days. We could collect data at different times of the year. Take an average of all data collected to improve reliability.

Conclusion

The data for site 4 shows that the regeneration of Birmingham via the Big City Plan was sustainable which supports my hypothesis that regeneration can make an area more sustainable. Data that supports this is my sustainability index that demonstrated that the area has made good use of a brownfield sites, providing urban greening and open green spaces. My conclusions would be more valid if I had included statistics to show if there had been a decrease in factors such as crime.