A level Geography

Creative Fieldwork

Geographical Association

FSC

Foreword

Fieldwork is part of the very fabric of modern school geography. It featured very prominently in the very first issue of *The Geographical Teacher*, published in 1901, although it was not established as an important part of British geographical education until the 1920s. There is something about 'getting out of the classroom' that conjures up notions of exploration and adventure: ideas and motivations that helped to create the discipline of geography. At its best, fieldwork channels our human instinct to investigate the world first-hand and teaches us how to do so using geographical ideas and tools. Fieldwork does so much more than engage children and young people with geography. It helps them on the path to becoming geographers, by developing their powers of careful observation and measurement. It gives them experience of the real world, where they encounter phenomena in context and are invited to begin to make sense of its complexity. And it reminds us all – both teachers and students – that the 'theoretical' world of the textbook is partial and limited.

Creative approaches to fieldwork are an invaluable part of the geography teacher's repertoire. Whilst there will always be a place for traditional 'walk and talk', creative fieldwork seeks to engage students with issues and questions that they think are important and worthwhile. Creativity in fieldwork helps students acquire and retain geographical knowledge because it engages the emotional dimension of learning and provides structured opportunities for students to construct new knowledge and understanding for themselves.

Whilst few geography teachers need encouragement to get outside, we most certainly need support when we get there. This is what the strategic partnership between the Geographical Association and Field Studies Council is all about. This book draws on that partnership, by providing practical examples from FSC centres awarded GA Geography Quality Mark Centre of Excellence status for their innovative use of fieldwork strategies. By using and adapting these approaches in the field, I hope geography teachers will be able to extend both their own creative fieldwork skills and those of their students.

Alan Kinder
Chief Executive, The Geographical Association
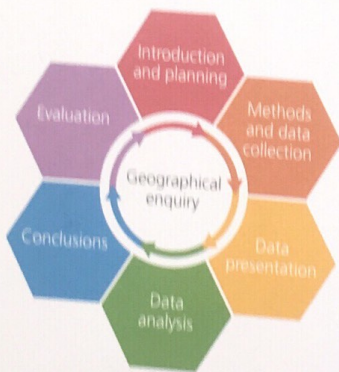
Geographical enquiry cycle: Ofsted reports that many geography lessons contain insufficient opportunities for enquiry-based work[2]

Creative geographical fieldwork[1] usually has three or more of the following characteristics:

- **Relevance.** Involves collecting data about the real world, with data often imperfect and messy.
- **Connections.** Connects two or more data sources together, like photographs and written observations.
- **Experimentatal.** A scaled experiment, model, role play or simulation of an actual event.
- **Visual.** A visual element in the method and/or the data analysis.
- **Value judgment.** Involves using numerical judgments, such as a weighted mean in an audit or cost-benefit analysis.
- **Opportunities for critical linking.** Has some form of linking to help explore associations, patterns and relationships.
- **Demonstrates perceptual awareness.** Opportunity to challenge existing perceptions and expectations of what will be found.
- **Complexity.** Lead researchers from what they can find out directly to making informed guesses about the data.

	Page	Relevance	Connections	Experimental	Visual	Value judgment	Critical linking	Perceptual awareness	Complexity
Systems field sketch	6		✓		✓		✓		
Carbon content of trees	8	✓		✓		✓			✓
Cliff surveys	10	✓				✓			✓
Hudson's equation	12	✓		✓		✓	✓		✓
Sound mapping	14	✓	✓		✓		✓		✓
Smell mapping	16	✓	✓		✓	✓	✓		✓
Mood mapping	18	✓	✓		✓	✓	✓		✓
Observation	20	✓	✓		✓	✓	✓	✓	✓
Visual methods	22	✓	✓		✓	✓	✓	✓	✓
Urban wanderings	28	✓	✓		✓			✓	
Diaries	30	✓	✓				✓	✓	

Evaluation

Be rigorous: Have you considered all sources of error?

Be critical: Why do you think your conclusions are valid?

Be ethical: How successfully have you minimised the damage caused by your enquiry?

Introduction and planning

Be rigorous: Will your enquiry consider every part of the issue?

Be critical: Are you planning to collect evidence from different perspectives, locations or times?

Be ethical: What impact might you have on the environment?

Data collection

Be rigorous: Are your samples representative and unbiased?

Be critical: Is your data collection accurate and precise?

Be ethical: How will you avoid damaging the environment or causing offence?

Conclusions

Be rigorous: Do you describe every trend and pattern?

Be critical: Are all conclusions supported by the evidence?

Be ethical: Is there a statement which details the ethical considerations of your research?

Data analysis

Be rigorous: Can you justify your choice of statistical test?

Be critical: Have you checked all your workings for mistakes?

Be ethical: Have you ensured confidentiality and anonymity in analysing the results?

Data presentation

Be rigorous: Are all graphs accurate and correctly labelled?

Be critical: Are your graphs and GIS techniques valid?

**Be ethical:** Have you acknowledged all the sources of secondary data you have used?

Critical reflection wheel: students should reflect critically on their work at all stages of the enquiry

Generating questions

Posing geographical questions is an area of geographical enquiry that can be challenging to students and teachers alike. Concerns such as 'I don't know where to start?' or 'What is an appropriate question?' can mean that this process is difficult. But by drawing on the iterative nature of enquiry, students can use their conclusions and evaluations of past enquiries to construct new geographical questions. Observation in a physical landscape or human environment is a crucial skill which can empower students to create and develop geographical questions.
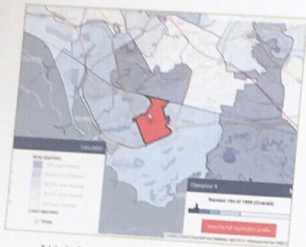
Welsh Index of Multiple Deprivation (WIMD) for Port Talbot (at LSOA scale) 1.1

A. Table of questions

Provide stimulus material such as photographs, concept maps, secondary data (perhaps from GIS) and newspaper articles. Ask students to complete Fig. 1.2 with questions. Then introduce further challenge by asking students which column contains questions suitable for A level enquiry, and why that might be.

Steelworkers tread the boards in a show about their fight to save their jobs tonight

'We're Still Here' will be the first theatrical response to the recent uncertainty over the future of Tata Steelworks

	... is	... did	... was	... could	... if
What...	What *is* the impact of these sources on the perception of this place?		What *was* the impact of the uncertainty of the steel workers on the local population?	What *could* be the benefits of a change in economy in this area?	What would be the impact on the identity of this location *if* there was investment in quaternary industry?
Where...	Where *are* the effects of the potential plant closure impacting local people the most?				
Who...	Who *is* most at risk of the uncertainty in the economy?				
Why...	Why *is* this area at risk of a change in economy?	Why *did* this area rally together and show community spirit?			
How...	How *is* deprivation experienced by the local community?	How *does* Port Talbot showcase its strong identity?		How could the community respond to the changing economy of Port Talbot?	How could the people change the perception of this place, *if* given investment?

1.2 Partially completed table of questions using Port Talbot steelworks stimulus material[1]

B. Ge...

By applying...
emerge tha...
provide the...
personal bi...
about a loc...
comparing...

Taunton...

... prosp...

... sustai...

C. What...

• Re...
• Mar...
• Inter...

At this...
they...
of f...

Ref...

B. Geographical lenses

By applying different lenses to views of a location, details can emerge that are not so obvious at first glance. These lenses provide the opportunity to observe more broadly, away from personal biases and open up wider, synoptic geographical thinking about a location. Students can then share their different photos comparing and contrasting these differing views of the location.

Taunton is a place that is...

... prosperous   ... unequal   ... diverse

... sustainable   ... accessible   ...resilient

1.3 Photographs of Taunton town centre that could be viewed through many geographical lenses
Jo Hannis (CC-BY)

C. What makes a good question?

Knowing what makes a **suitable** geographical question is important. Considerations of suitability should take into account whether the questions are:

- Clear and simple
- Fit for assessment
- Relevant
- Manageable
- Interesting

At this planning stage questions will need to be refined, to ensure they are suitable for investigation, which may involve a narrowing of focus by writing sub-questions and hypotheses.

References

1. Jess Glenn-Batchelor, Lincoln Minster School; Critical thinking about critical thinking, Jon Cannell and John Hopkin, Workshop 23 at Geographical Association Conference 2017. It was developed as part of the Geographical Association work with the British Council. For more information see www.geography.org.uk/critical-thinking

A system is a set of interrelated components that work together as a whole. Numerous examples of a system can be found in geography including the water and carbon cycles, as well as coastal and glacial systems. An appreciation of the different components of a system can be challenging due to the magnitude of the system involved. By focussing on a single view and drawing a 'Systems field sketch', an application of systems thinking can be applied to a location which encourages considerations of the bigger picture.

Methods and data collection

1. When viewing the scene, use cross lines for scale.

2. Sketch the shape of the horizon.

3. Add in detail to be picked out in the sketch. Remember this is a geographical not artistic sketch.

4. Pick out and annotate features and processes visible or inferred from the environment.

5. Code annotations into input, transfer, store and output.

Encouraging meaningful observation in an unfamiliar environment can be supported using a differentiated scaffold sheet (Fig 2.1).

Describe any patterns or features you can see in the landscape

What are the current physical and human processes influencing this environment?

Name a secondary data source that could help inform your understanding of this environment

Identify a feature and explain how this feature has formed

How would this environment look...
... a few hours ago?
... a few months ago?
... 100 years ago?
... thousands of years ago?
... in 3 months time?
... in 25 years time?
... in 100 years?

Identify two data collection techniques that could be used in a geographical fieldwork investigation here

Which physical and human processes are having the biggest impact and why?
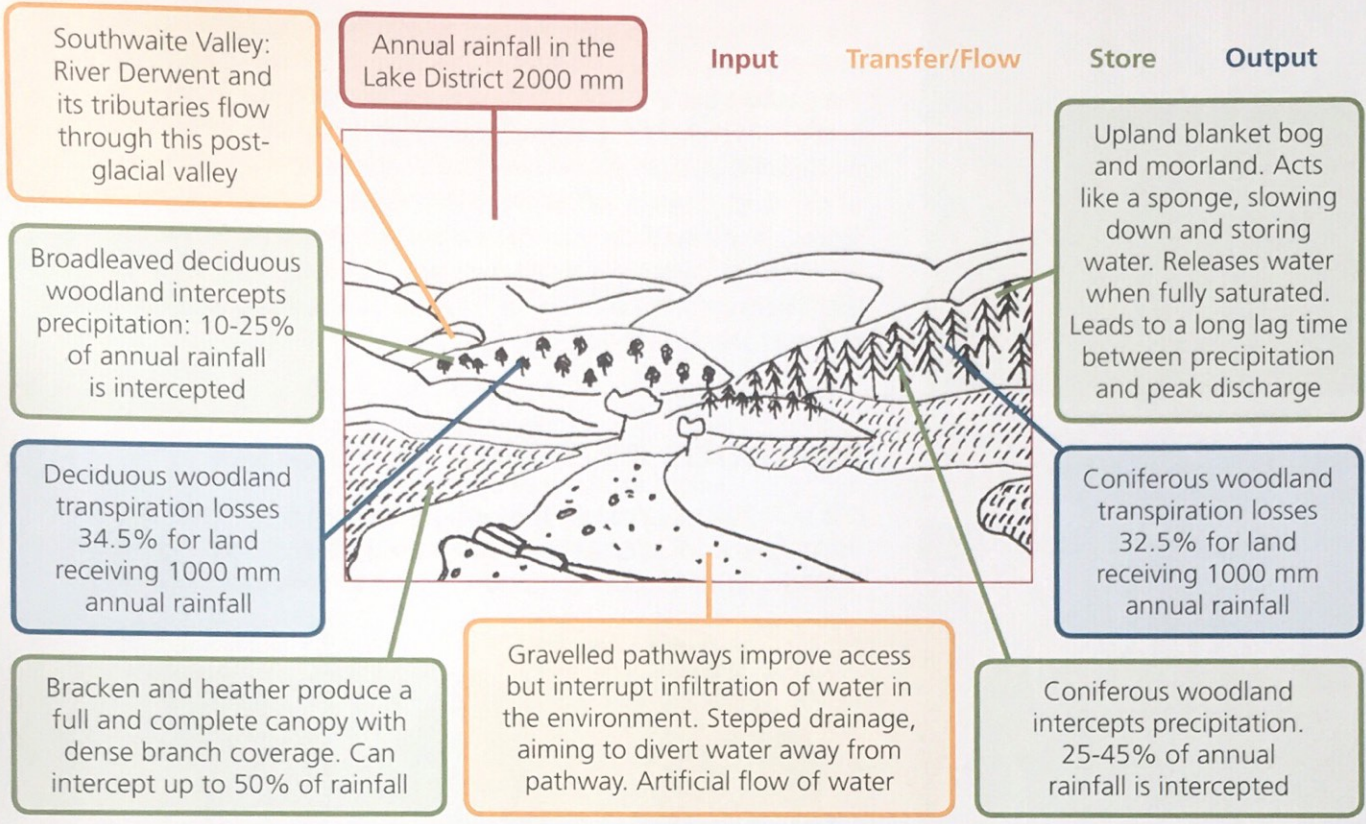
Compare and contrast two sections of this environment
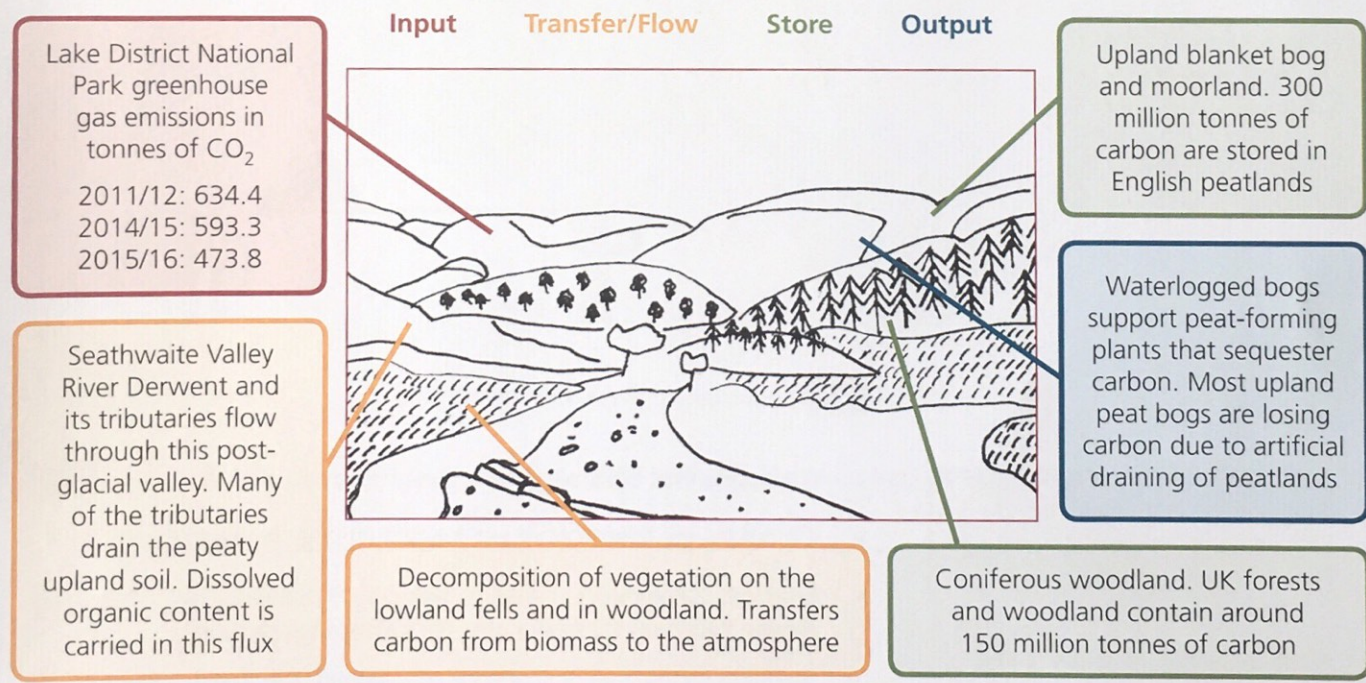
List human impacts on this physical environment

Formulate some questions that you could ask about this environment

Explain the advantages of this site as a location for a fieldwork enquiry

All   Most   Some

2.1 Differentiated scaffold sheet for generating questions

Input   **Transfer/Flow**   **Store**   **Output**

Southwaite Valley: River Derwent and its tributaries flow through this post-glacial valley

Annual rainfall in the Lake District 2000 mm

Broadleaved deciduous woodland intercepts precipitation: 10-25% of annual rainfall is intercepted

Upland blanket bog and moorland. Acts like a sponge, slowing down and storing water. Releases water when fully saturated. Leads to a long lag time between precipitation and peak discharge

Deciduous woodland transpiration losses 34.5% for land receiving 1000 mm annual rainfall

Coniferous woodland transpiration losses 32.5% for land receiving 1000 mm annual rainfall

Bracken and heather produce a full and complete canopy with dense branch coverage. Can intercept up to 50% of rainfall

Gravelled pathways improve access but interrupt infiltration of water in the environment. Stepped drainage, aiming to divert water away from pathway. Artificial flow of water

Coniferous woodland intercepts precipitation. 25-45% of annual rainfall is intercepted

2.2   Systems field sketch: hydrological cycle at Borrowdale

Input   **Transfer/Flow**   **Store**   **Output**

Lake District National Park greenhouse gas emissions in tonnes of CO_2

2011/12: 634.4
2014/15: 593.3
2015/16: 473.8

Upland blanket bog and moorland. 300 million tonnes of carbon are stored in English peatlands

Seathwaite Valley River Derwent and its tributaries flow through this post-glacial valley. Many of the tributaries drain the peaty upland soil. Dissolved organic content is carried in this flux

Waterlogged bogs support peat-forming plants that sequester carbon. Most upland peat bogs are losing carbon due to artificial draining of peatlands

Decomposition of vegetation on the lowland fells and in woodland. Transfers carbon from biomass to the atmosphere

Coniferous woodland. UK forests and woodland contain around 150 million tonnes of carbon

2.3   Systems field sketch: carbon cycle at Borrowdale

The global carbon cycle is a complex physical system, with fast and slow transfers between stores. Understanding more about the carbon cycle is important due to the continued increase in carbon levels and the global impact of this increase.[1,2] Globally woodlands play an important role in sequestrating carbon; 13% of UK land cover is woodland.[3] By focussing on terrestrial carbon stores, investigations into the carbon cycle become much more achievable. These investigations can then lead into discussions into land management and current topics of interest such as housing policy in the Green Belt.

Height of stem $(h) = d (\tan \theta) + a$

Radius $(r) = \dfrac{c}{2\pi}$

Volume $= \pi r^2 \left(\dfrac{h}{3}\right)$

h = height of stem (m)

d = distance from the stem to the observer (m)
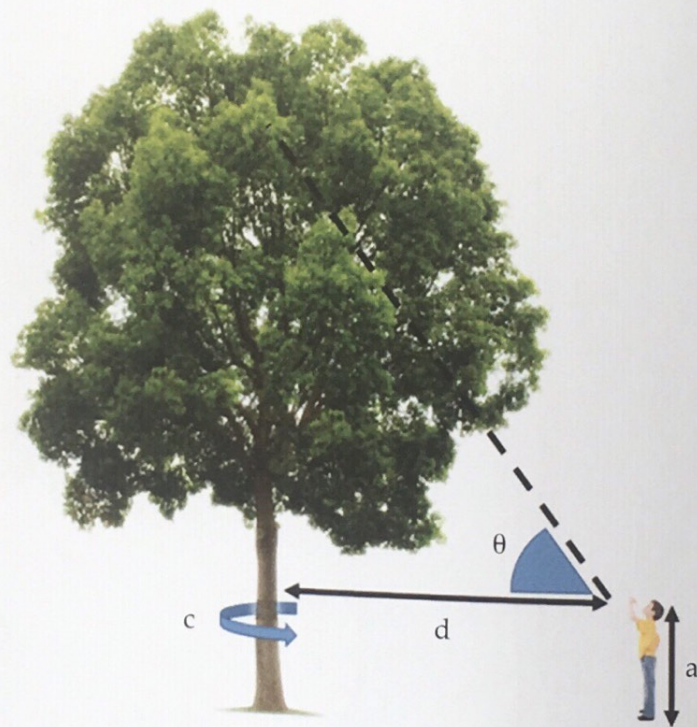
a = distance from ground to observer's eye (m)

θ = angle of elevation to top of the stem (°)

c = circumference of the stem at chest height (m)

3.1

Methods and data collection

It is possible to calculate the carbon content of an individual tree using fieldwork measurements. Around 50% of the tree's biomass is made up of carbon compounds such as cellulose and lignin. [4]

3.2 Estimating the height of the stem

- Calculate the volume of the stem (m³)
- Calculate diameter at chest height (twice the radius) (m)
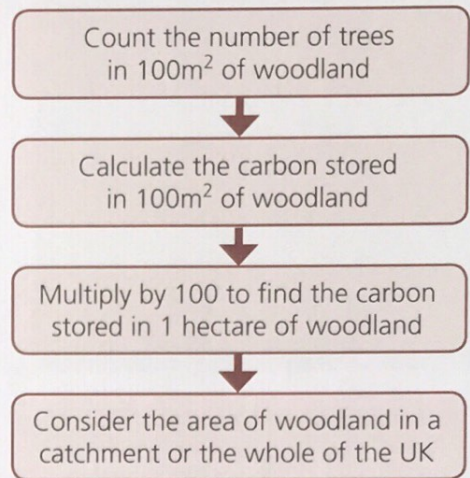- Use the conversion charts to find stem biomass (tonnes)

Conversion charts for stem biomass, crown biomass and root biomass can be found at the website
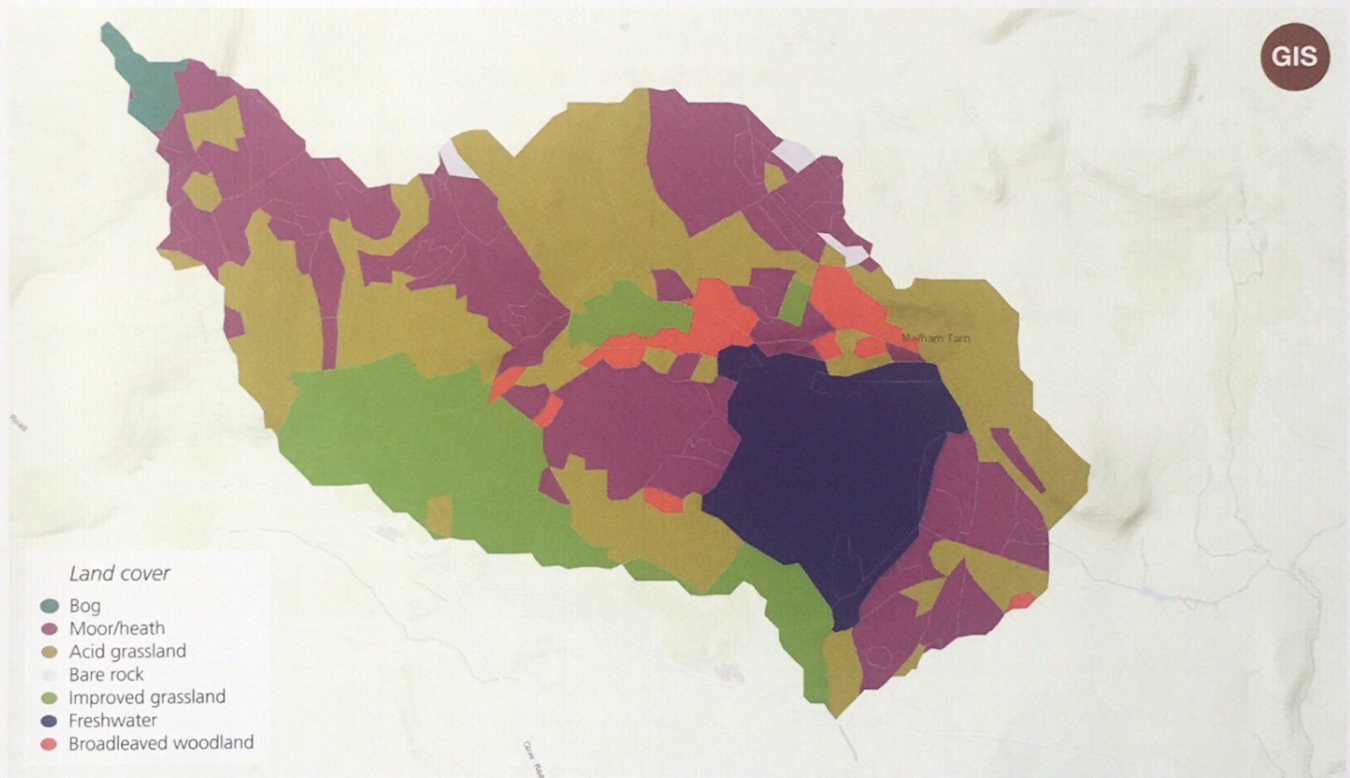
Data presentation and analysis

- Inferential statistics (e.g. Mann-Whitney U test) to calculate if there is a difference in carbon content in two different woodlands (species / age / management)

$$Carbon\ sequestration\ rate = \frac{total\ carbon\ content}{age\ of\ tree}$$

- Calculate carbon sequestration rates

- Scale up – carbon stores at a regional, UK or global scale can be calculated if the average carbon content per tree in a woodland is known (see Fig. 3.3)

Count the number of trees in 100m^2 of woodland

↓

Calculate the carbon stored in 100m^2 of woodland

↓

Multiply by 100 to find the carbon stored in 1 hectare of woodland

↓

Consider the area of woodland in a catchment or the whole of the UK

3.3 Options for scaling up

Land cover
- Bog
- Moor/heath
- Acid grassland
- Bare rock
- Improved grassland
- Freshwater
- Broadleaved woodland

3.4 Using GIS analysis of Landcover Data 2007 to scale up tree carbon primary data © Esri UK 2017

References

1. Scripps Institute of Oceanography (2017)
   scrippsco2.ucsd.edu/history_legacy/keeling_curve_lessons

2. NASA (2017)
   climate.nasa.gov/climate_resources/24

3. Forestry Commission (2010) Sustainable forest management indicators. Search Forest Research website at www.forestry.gov.uk

4. Matthew, G. (1993) The carbon content of trees *Forestry Commision Technical Paper* **4**. Search Forest Research website at www.forestry.gov.uk

Cliff surveys
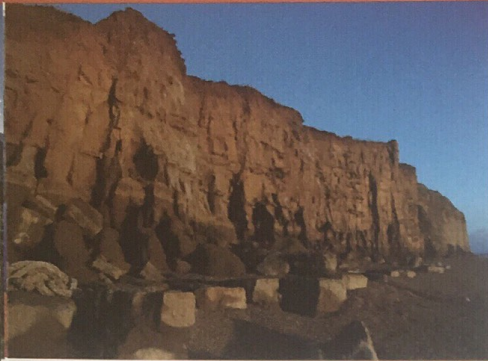
Cliffs are dynamic features. They are an important long term store of sediment in the coastal system, but can also provide a source of sediment through mass wasting events and cliff recession. The size of this input varies over different timescales, and depends on weathering and erosion rates, rock type and rock structure. Despite their importance cliffs have generally been avoided in fieldwork, since they can be inaccessible and hazardous. The survey method outlined here happens from below the cliffs, staying at a safe distance at all times. Note that the minimum safe distance from the base of cliff is the same as the height of the cliff.

CISA score	Classification
< 15	Completely unstable
15 – 30	Unstable
31 – 45	Partially stable
46 – 60	Stable
61 – 70	Completely stable

4.1

Methods and data collection
A. Cliff instability

Cliffs can differ in their stability. This method is adapted and simplified from the Cliff Instability Susceptibility Assessment[1]. For each parameter give the section of cliff a score from 1-5. The total CISA score indicates the cliff's stability (see table 4.1).

Parameters	1 Very bad	2 Bad	3 Normal	4 Good	5 Very good
Geomechanical: Joints					
Number of joints	Crushed rock	> 3	2 + random fractures	1 + random fractures	Occasional random fractures
Spacing	< 6cm	6cm – 29cm	30cm – 59cm	70cm – 2m	> 2m
Aperture	> 1m	1m – 1.1cm	1cm – 2mm	1.9mm – 0.5mm	< 0.5mm
Water condition	Spring water	Wet	Very damp	Damp	Dry
Weathering	Extreme	Extensive	Some	A little	None
Morphological: Cliffs					
Cliff height	> 30m	30m – 15m	14m – 5m	4m – 2m	< 2m
Cliff slope	Overhanging	90° – 75°	74° – 50°	49° – 30°	< 30°
Sea caves	Widespread	Widespread at sea level	Widespread above sea level	Slight	Absent
Natural breakwater	Absent	Very small	Small	Wide	Very wide
Mass movement: fallen material	Widespread	Widespread around sea level	Only material at the foot of cliff	Slight	Absent
Abrasive action	Very intense	Intense	Moderate	Little	Absent
Meteo-marine: sea waves					
Effective fetch	> 250km	250km - 200km	199km - 150km	149km - 100km	< 100km
Exposure to storm wave fronts	90° – 80°	79° – 60°	59° – 40°	39° – 10°	< 10°
Anthropogenic: engineering structures					
Reinforcement	Absent	Poor	Localised	Widespread	Very widespread

4.2

Height above survey level (m)

B. Cliff profiles

While standing a safe distance from the base of the cliff:

- Sketch and identify key points on the profile of the cliff

- Mark two points (A and B) in front of the cliff a fixed distance apart (e.g. 10m) and the same height

- From a fixed height on a ranging pole at point A, use a clinometer to record the angle to each point on the cliffs

- Now from point B, record the angles to the same points on the cliff

B   A

10 metres
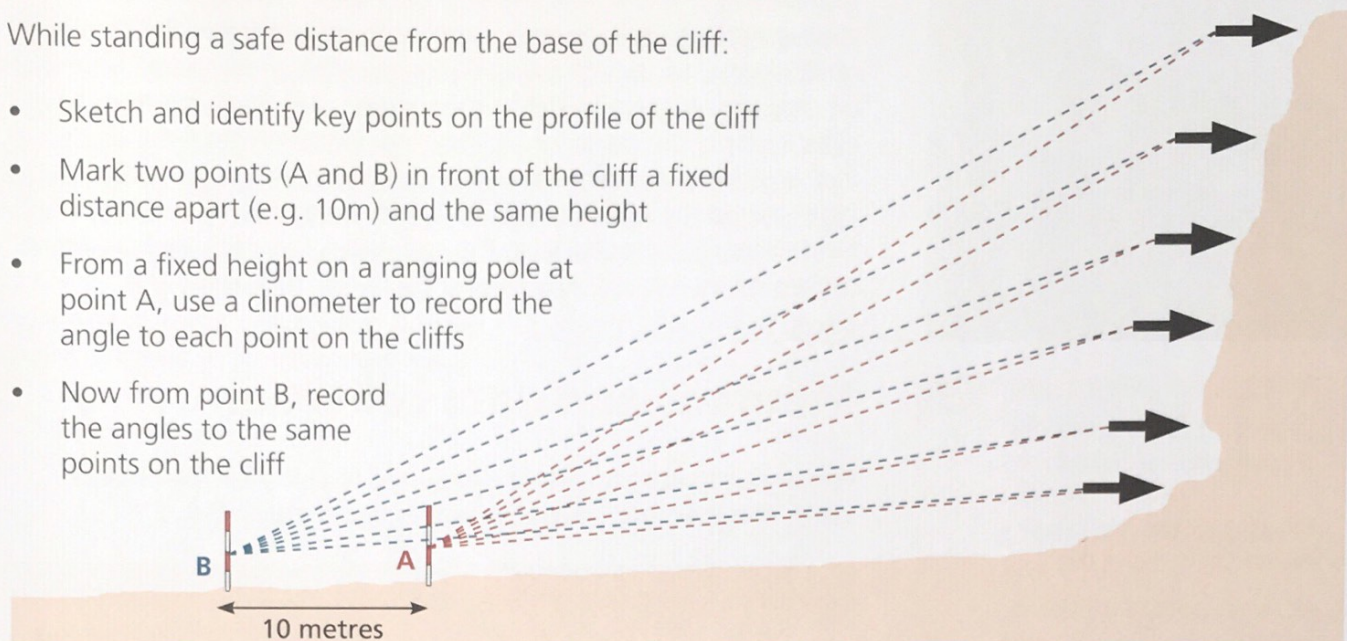
4.3   Collecting cliff profile data from a safe distance at the base of the cliff

Data presentation and analysis
Cliff profiles

Height above survey level (m)

B   A

Distance (m)

4.4
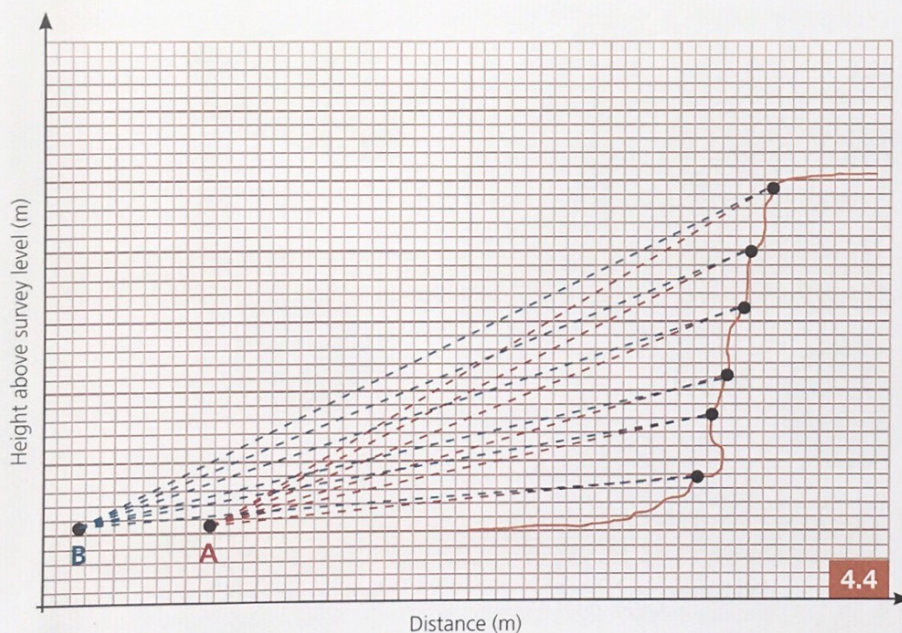
How to draw a cliff profile

1. Mark points A and B on graph paper. The distance apart will set the scale of the profile (e.g. 1cm = 1m)

2. Using a protractor from points A and B, draw in all of the angles you recorded

3. Where the lines intersect shows the location of each break of slope on the cliff

4. Annotate the cliff profile with any notes you have taken in the field

References

1. Andriani, G. & Pellegrini, V. (2014). A suggested method for assessing cliff instability susceptibility at a given scale (CISA) *International Journal of Geology* **8**: 73-80

   Free download at
   www.naun.org/main/NAUN/geology/2014/a042004-090.pdf

Investigating coastal management often takes the form of evaluations into the effectiveness of coastal management strategies. Data collection is usually carried out using the semi-qualitative approach of a bi-polar assessment, sometimes based on snapshot subjective field observations. Actual evaluations of effectiveness can be more challenging. Hudson's equation is an industry standard technique used by coastal engineers today. It helps assess the effectiveness of riprap, a commonly used form of hard defence, by calculating the maximum size rock that could be moved by the waves. Any smaller rocks are vulnerable.

$$W = \frac{W_r H^3}{K_D (S_R - 1)^3 \cot \theta}$$

W = maximum mass that waves could move (kg)

W_r = unit weight of riprap (kg/m³)

H = mean wave height

K_D = stability coefficient of the riprap material (calculated in lab conditions)
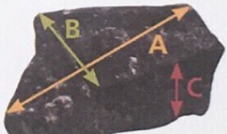
S_R = Specific gravity of riprap material

θ = slope angle from the horizontal (°)
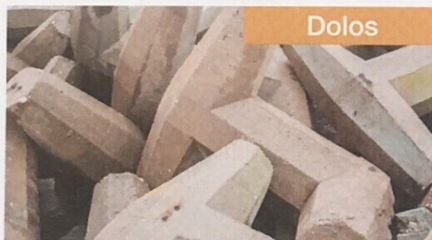
$\cot = 1 \div \text{tangent}$

5.1

Methods and data collection

Primary and secondary data is required to calculate the Hudson value, the maximum mass the waves could move (Fig. 5.1).

Primary data collection		Secondary data required
Rock type		S_R = Specific gravity of riprap material
		W_r = unit weight of riprap (kg/m³)
Riprap shape		K_D = stability coefficient of the riprap material (calculated in lab conditions)
θ = slope angle from the horizontal (°)		H = mean wave height for region
Length of axis **A**	Volume of the material	
Length of axis **B**		
Length of axis **C**		

5.2

The table below shows secondary data for S_R, W_r and K_D.

Source	Rock type	S_R (units)
Keller (2005)[1]	Sandstone	2.1 – 2.4
	Granite	2.5 – 3.1 (typically 2.65)
	Limestone	2.6
	Basalt	2.7 – 3.2
	Rock type	**W_r (kg/m³)**
CERC (1984)[2]	Granite	2691
	Limestone	2611
	Concrete	2403
	For two layers of...	**K_D (units)**
	Rough angular quarry stone	1.9

Dolos

Tetrapods

Quarry stone

Assessing the effectiveness of riprap

Use an appropriate sampling strategy to select a sample of rocks from the riprap. For each rock, measure the length of axes A, B and C (m), then calculate the volume (m³) and mass (kg). Measure the slope angle (°) of the riprap using a clinometer. The measured mass of each riprap rock can be compared to the Hudson's value. Any rock with a mass above below this value will be effective, but anything below will be ineffective, in average wave conditions. Alternatively replace H in Fig. 5.1 with the storm threshold (the wave height that is exceeded 4 times in a year) to find if the riprap will be moved in storm conditions.
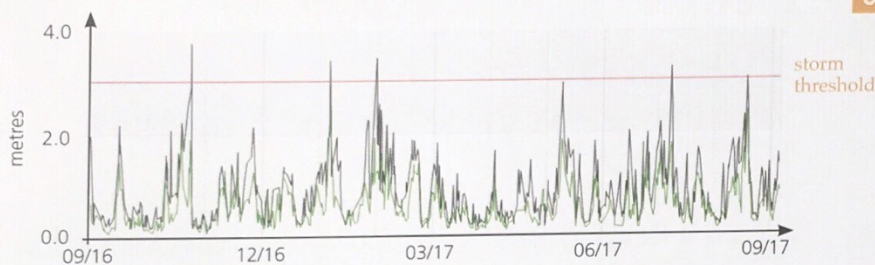
5.6 2016-2017 wave heights at the Milford Wave Buoy [4]
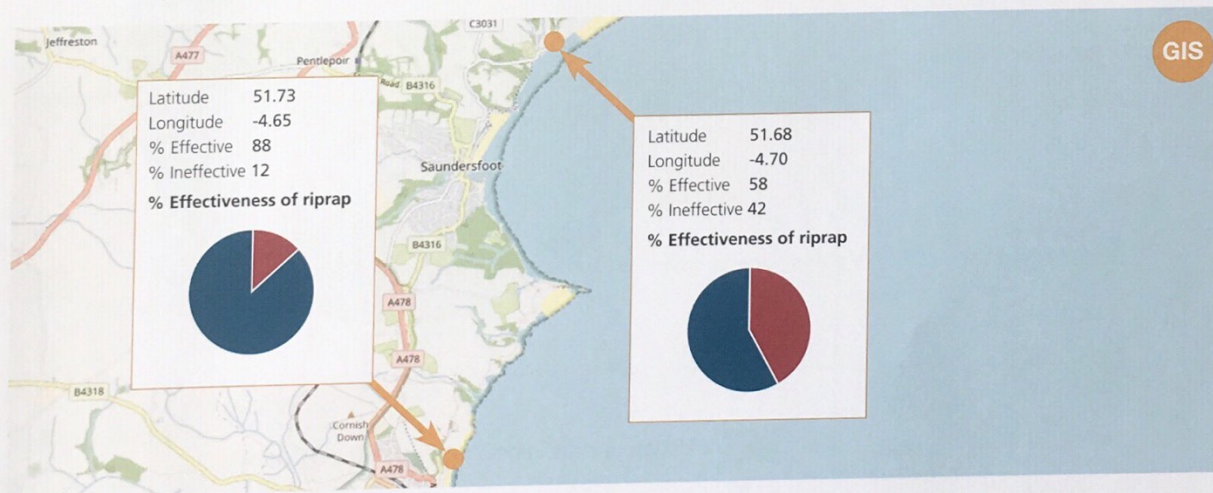
Mean annual wave height = 0.65m

Orange line shows storm threshold (= 2.9m)

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Data presentation and analysis

For worked examples see www.geography-fieldwork.org

- Descriptive statistics, e.g. what percentage is effective
- Located pie charts with percentage effective and ineffective

Latitude	51.73
Longitude	-4.65
% Effective	88
% Ineffective	12

% Effectiveness of riprap

Latitude	51.68
Longitude	-4.70
% Effective	58
% Ineffective	42

% Effectiveness of riprap

5.7 Located pie charts showing riprap effectiveness at two sites near Tenby © Esri UK 2017

References

1. Keller, R.J. (2005) Online at toolkit.ewater.org.au/Tools/RIPRAP

2. US Army Coastal Engineering Research Center (1984) Shore Protection Manual Volume 2. Free online.

3. Walker, R. (2016) Online at www.simetric.co.uk/si_materials.htm

4. Channel Coastal Observatory. Online at www.channelcoast.org

Sound mapping

Sound is one of the components that makes up a s
noise' and its impact on sleeplessness, stress and ot
complaints have been documented[1] and form part
on everyday noise such as limits on aircraft noise, w
and concert curfews. Guidelines on night noise leve
from the World Health Organisation.[3] There are stu
noise' and the responses and behaviours of people
the soundscape.[4] Apps such as Decibel Meter dB ca
sound levels, which can be mapped spatially on pa
GIS (e.g. Collector or Survey 123 apps).

Methods and data collection

A. Classifying sound

Sound can be classified by its source (Figs 6.1 & 6.
interpretation (Fig 6.2).

Classification of sounds by source[5]	
Geophony	Physical sounds (e.g. wind blowing)
Biophony	Ecological sounds (e.g. bird song)
Anthrophony	Human-made sounds (e.g. traffic)

6.1

Classification of sounds by interpretation		
Sound	Desirable	Audible treasure
Noise	Undesirable	Audible litter

6.2

6.3   Urban Sound Wheel (source: Chatty Maps[6])

Example of method C: 6.4
a visual sound map at
Flatford Mill

B. Emotional responses to sound

Further drawing on the work of the Chatty Map:
sound's impact on the listener can be recorded u
assessment of emotions related to that sound (F

C. Visual sound mapping

Choose a fixed reference point, then record the
and description of the sounds you hear in a sho
(such as 10 minutes). Figure 6.4 shows what yo

Data presentation and analysis

6.5 Located rose diagrams mapping emotional response to sounds in Colchester town centre © Esri UK 2017

6.6 Using analysis functions in ArcGIS Online to interpolate sound levels in Colchester town centre © Esri UK 2017

References

1. Basner M. *et al.* (2014) Auditory and non-auditory effects of noise on health. The *Lancet* **9925**: 1325-1332

2. Environmental Noise (2009) Pariliamentary Office of Science and Technology. Online at www.parliament.uk/documents/post/postpn338.pdf

3. World Health Organisation (2009) Night Noise Guidelines for Europe. Online.

4. Davies, W.J. *et al.* (2012) Perception of soundscapes : an interdisciplinary approach. *Applied Acoustics* **74**: 224-231

5. Pijanowski, B.C. *et al.* (2011) *Soundscape Ecology: The Science of Sound in the Landscape.* University of California Press.

6. Aeillo, L.M. *et al.* (2016) Chatty Maps: constructing sound maps of urban areas from social media data. *Royal Society of Open Science*. Online.

Smell mapping

Smells evoke emotion. Despite the importance of smell in how we perceive a place, smell is rarely recorded in fieldwork. But each place has a unique smellscape, and interesting relationships can be explored such as the links between the socio-economic identity of a place and its smell.[1] Smells can either be recorded at the same time as an area is explored ('smell catching') or deliberately sampled ('smell hunting'). Systematic strategies include sampling smell at regular intervals along a transect or within a grid. Stratified strategies include active smelling of contrasting areas, or recording where changes of smell occur.

Classification of smells by occurrence[2]

Curious or unexpected	Short-lived individual smells
Episodic	Localised pockets of smell
Background	Constant smell within a place

7.1

Tips for recording smells

- Drink water as you smell: smelling needs moisture
- Limit smell mapping to 45 minutes: sniffing is tiring
- Satisfy your own need for relief if your nose tires

7.2

Methods and data collection

A. Classifying smell

Smell can be classified by its occurrence (Fig 7.1), its source (Fig 7.3) or its impact (Fig 7.4)

7.3 Smellscape Wheel (source: Smelly Maps) [1]

B. Impact of smell

Smell number	Name of smell	Smell intensity					Smell duration					Smell like/dislike					Expected smell?					Association and thoughts on this smell?
		-2	-1	0	1	2	-2	-1	0	1	2	-2	-1	0	1	2	-2	-1	0	1	2	
		weak				strong	short				long	dislike				like	yes				no	
1	Bins		-1								2	-2						-1				Rats
2	Exhaust			0						1		-2					-2					Busy road

4 Recording impact of smell (adapted from McLean's Smellfie Kit[2]) – see Fig. 7.6 for an example

Data presentation and analysis

- Spatial mapping of smell types (Fig 7.5)

- Impact of smells (Fig 7.6)

- Inferential statistics e.g. Spearman's Rank of environmental quality score and number of positive responses to smells

7.5 Spatial mapping of smell types © Esri UK 2017

7.6 Located bar charts for impact of smells © Esri UK 2017

Smell number	Name of smell	Smell intensity					Smell duration					Smell like/ dislike					Expected smell?					Association and thoughts on this smell?
		-2	-1	0	1	2	-2	-1	0	1	2	-2	-1	0	1	2	-2	-1	0	1	2	
		weak				strong	short				long	dislike				like	yes				no	
1	Food - baked					2				1						2		-1				Fried doughnuts found at the seaside. Happy.
2	Food - fried					2				1					1			-2				Greasy predictable smell. Traditional.
3	Cleaning		-1				-2								1						1	Well maintained High Street. Cared for.
4	Nature - floral					2					2					2					2	Lavender in maintained gardens. Unusual at seaside.
5	Traffic - diesel					2				1	-2										1	Very busy High St. Buses. Shame no pedestrianisation.

7.6 Results of bi-polar analysis: Smell and its impact on Llandudno
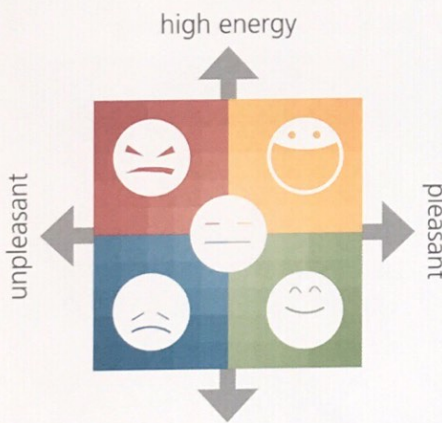
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1. Quercia, D., Schifanella, R., Aiellow, L.M., McLean, K. (2015) Smelly Maps: The digital life of urban smellscapes
Online at researchswinger.org/publications/icwsm15_smell.pdf

2. McLean, K. (2014) Sensory Maps
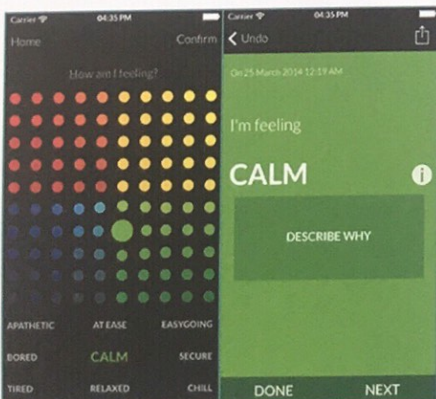Online at www.sensorymaps.com

Questionnaires and environmental quality surveys are well established techniques for collecting data on a place's physical setting and on the activities that happen there. Gathering meaningful data on how a place is perceived is more complex. It is well known that the built environment has an impact on how people feel[1,2] and this is beginning to be considered in urban planning.[3,4,5] Inspired by the work of Daniele Quercia's *Happy Maps*[6], LSE's *Mappiness*[7] and using the Yale Centre's of Emotional Intelligence[8] mood categories, we have put together a method for students to collect data on their emotional response to places.

Methods and data collection

A. Mood categories

RED	YELLOW
emotions are unpleasant and high in energy, like anger, frustration and anxiety	emotions are pleasant and high in energy, like excitement, joy and elation
BLUE	GREEN
emotions are unpleasant and low in energy, like boredom, sadness and despair	emotions are pleasant and low in energy, like tranquility, serenity and satisfaction

Mood categories 8.1

high energy

unpleasant — pleasant

low energy

Mood categories 8.2

By assessing mood on its level of energy (low or high) and level of positivity (low or high), four distinct mood categories emerge (Figs 8.1 & 8.2). Collect data using paper or digital maps of the sample area, and adding in annotations which add some descriptive detail to the moods experienced (Fig 8.4).
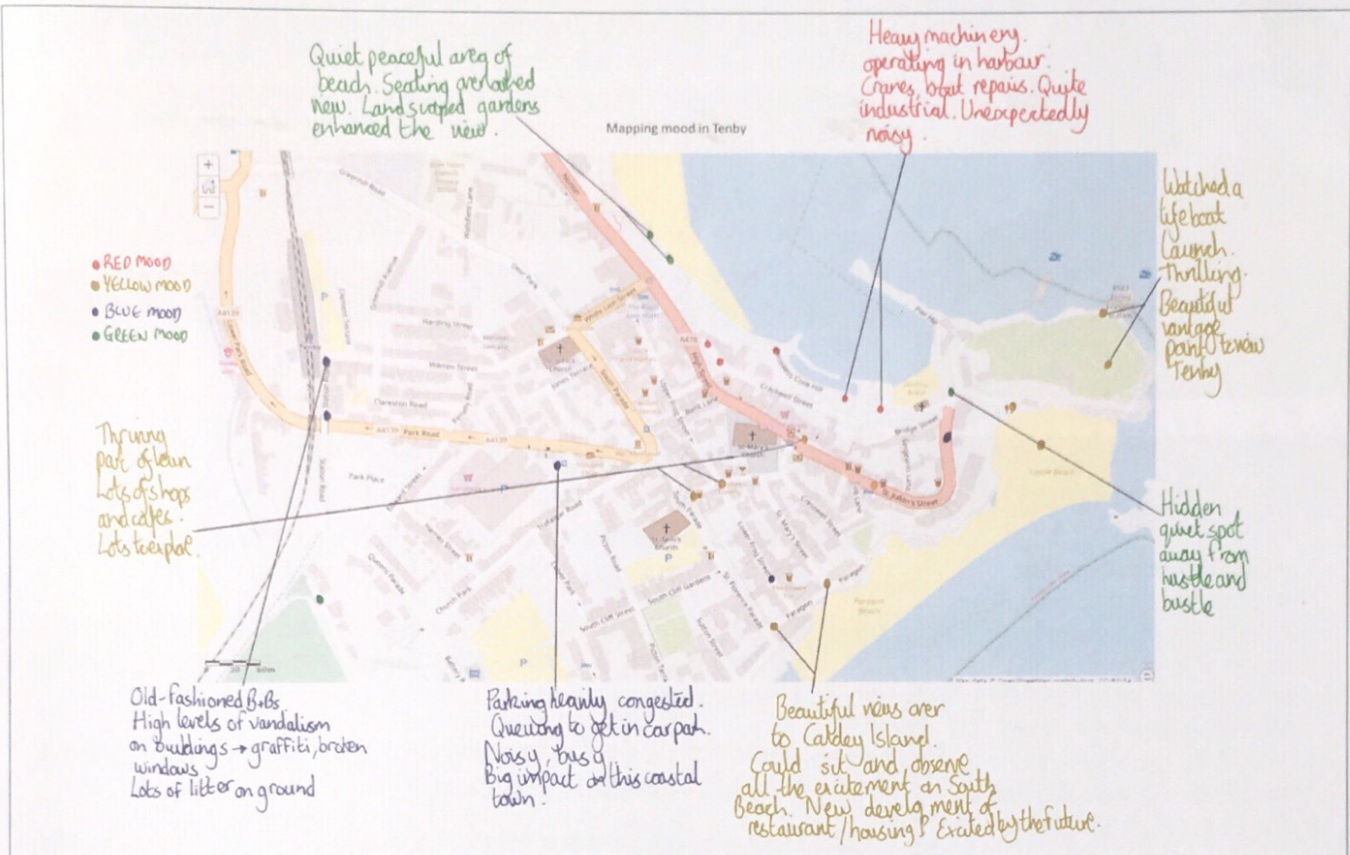
B. Mood Meter app

Mood categories simplify all moods into four mood categories. The Mood Meter app captures more detail.

Mood Meter app process:

1. Choice of mood colour quadrant (red, yellow, green, blue).

2. Choice of 25 moods within that colour quadrant.

3. Description of reasons why that mood is being experienced.

4. Data stored within app, so can search by date for summary of moods experienced and explanations.

Mood Meter app website 8.3

References

1. Kennedy, D.P. and Adolphs, R. (2011) Stress and the city. *Nature* **474** (23 Jun 2011)

2. Abbott, A. (2011) City living marks the brain. *Nature* **474** (22 Jun 2011)

3. Ellard, C. (2015) *Places of the heart*. Bellevue Literary Press

4. Turner, C. (2017) Bring me sunshine: the designers being briefed to create a happier planet *The Guardian* 23 June 2017

5. Burdett R. & Taylor M. (2011) Can cities be good for you? Online at lsecities.net/media/objects/articles/can-cities-be-good-for-you/en-gb

6. Quercia, D. *Happy Maps* (his TED talk is available online)

7. LSE Mappiness project www.mappiness.org.uk

8. Brackett, M. *et al.* (2014) Mood Meter App ei.yale.edu/mood-meter-app

Mapping mood in Tenby

Quiet peaceful area of beach. Seating areas look new. Landscaped gardens enhanced the view.

Heavy machinery operating in harbour. Cranes, boat repairs. Quite industrial. Unexpectedly noisy.

Watched a lifeboat launch. Thrilling. Beautiful vantage point to view Tenby.

- RED MOOD
- YELLOW MOOD
- BLUE MOOD
- GREEN MOOD

Thriving part of town. Lots of shops and cafes. Lots to explore.

Hidden quiet spot away from hustle and bustle.

Old-fashioned B+Bs. High levels of vandalism on buildings → graffiti, broken windows. Lots of litter on ground.

Parking heavily congested. Queuing to get in car park. Noisy, busy. Big impact on this coastal town.

Beautiful views over to Caldey Island. Could sit and observe all the excitement on South Beach. New development of restaurant/housing? Excited by the future.

8.4 Mood map of Tenby with descriptive annotations

Data presentation and analysis

- Coding by categorising or theming (Figs 8.5 & 8.6)

- Descriptive statistics e.g. 85% of moods experienced in Tenby were categorised as Yellow; modal mood is Yellow

- Inferential statistics e.g. Spearman's Rank of extent of green space and number of positive moods (Yellow and Green); or Chi^2 test of association between location and mood type

Red	• Couldn't find a picnic bench • Seagulls gathered round while eating, felt intimidated • Cost of car parking was extremely high: £12 for the day
Yellow	• Sense of adventure when Caldey Island was spotted • Sitting on North Beach, watching the RNLI practice drills • Excited to taste fish and chips by the sea • Interesting independent shops, excited to explore these • So many activities: boat trips, fishing, art gallery, shops • Watching swimming and running race on North Beach
Blue	• Lots of dereliction in this area • Some shops were expensive, couldn't afford these • Ground was covered in litter, bins overflowing • Pouring rain and strong winds, no shelter anywhere
Green	• Views from the Esplanade walk were breathtaking • Pedestrianised centre made walking easy and relaxing • Walked on the beach • Drinking hot chocolate, gazing at the wild sea • Daffodils along Esplanade with view of sea and beach

8.5 Mood descriptions and other notes recorded in the field

Coding: Categorising		
Environ-mental	Social	Economic
9	4	6

Coding: Theming		
Themes	Concepts	Counts
Scenery	Exposed	3
	Natural	3
	Coastal	6
Activities	Exclusive	3
	Sports	3
	Traditional	2
	Shopping	3
Decay	Overuse	4
	Dereliction	1

8.6 Categorising and theming of data in Fig 8.5

The sheer volume of 'things going on' in a place makes collecting data on people's movements and interactions challenging, especially in familiar places. Despite this, observation provides an opportunity to collect valuable qualitative and quantitative data that would be difficult to gain through other techniques such as questionnaires and interviews. Observation allows for comparison and quantification of the presence, movement, features and interactions of individuals and groups of people. Observation data can help to describe and explain both the ordinary and extraordinary features of life in places[1].

Types of observation

Participant observation: Watching the events while taking part; either **overt** (the researcher tells the participants they are being observed) or **covert** (the researcher tries to blend in, e.g. observing other people's shopping habits while doing own shopping)

Non-participant observation: Watching the situations passively from a distance without participating.

9.1

Methods and data collection

1. **Choose an area** to explore and observe. Make sure it is an area with enough going on to be interesting!

2. **Explore and interact** with your chosen area. Walk around it, visit shops, buy a coffee, start conversations, read the notices in shop windows and information boards for example

3. **Decide on a focus**. Will you record everything that happens, or select individuals or groups to write about in depth?

4. **Find a suitable spot** to stop and draw a sketch map or a field sketch. Label things such as the age and use of buildings and points of interest, and information about the people you see. You can also record your reaction to the scene

5. **Record your observations and impressions.** Remember to record the mundane as well as the unusual! (See Fig 9.3)

Interactions

Observe and categorise the interactions between people.

Instance	Interactions: can you categorise the interactions between people that happen?			
	Conviviality	Indifference	Animosity	Familiarity
Type and detail of interaction	Friendly events e.g. smiling, nodding, holding doors open	Lack of interest e.g. no eye contact, avoiding social interaction	Hostile situations e.g. confrontation, anger, rudeness	Close acquaintance e.g. lengthy conversations, physical contact
Place 1				

Instance	Spatial delineations: can you record whereabouts the interactions happen?				
	Paths	Boundaries	Nodes	Thresholds	Play-space encounters
Type and detail of interaction	e.g. running loops or footpaths	e.g. edge of grass, edge of play park	e.g. intersections and cross-roads	e.g. between public and private	e.g. play parks
Place 1					

9.2

Data presentation and analysis

Fig. 9.3 shows categorising coding of information recorded during observation. It has been coded for whether observations agree or disagree with the three Morecambe Bay brand guidelines: Big views, landscape and nature; Cultural heritage; and Outdoor recreation.

What to record?		Notes		
Facts	Date and time, location, weather	Sat 5 Aug 2017, 11.30-13.00 Sunny, warm and dry Eric Morecambe statue, Marine Road Central, Morecambe seafront		
Physical environment	What is the layout?	Views over Morecambe Bay and Lake District, steps up to statue of Eric Morecambe, benches with back to statue face out to sea, landscaped beds with colourful flowers, access to the promenade and beach, views over to the mountains		
	How is the enviroment being used by people?	People sitting on benches looking out to sea		
Social environment	How many people?	32 sat on bench	34 queuing for selfie with statue	52 on promenade
	Social characteristics Demographics	Families with children under 10: 17 Older than 60: 15 Gender: 20F, 12M	18-60 year olds: 34 Gender: 20F, 14M	Families with children under 10: 23 18-60 year olds: 17 Older than 60: 12 Gender: 18F, 34M
	How are people arranged in this environment?	Sat facing the sea, in family/friend groups, few solo sitters	In ordered line	Spaced out family / friends groups, solo runners and dog walkers
	What are people doing?	Eating picnics, eating fish and chips, looking at views over Morecambe Bay and the hills and mountains of the South Lakes	Focused activity of taking a selfie, different family / friend groups talking to one another in the queue	Leisure activities (dog walking, cycling, running, walking), 75% of people moving NE to SW, no interaction between groups
Feelings, hunches and impressions		Very distinct activities e.g. no-one who took a selfie also walked along the promenade. This is not what I expected. Those that queued for a selfie with Eric Morecambe came from the road, sole purpose of visit. More likely to be tourists, who are en route to somewhere else. Minimal time spent in Morecambe. Those walking along the promenade likely to be more more local. Familiar with the area as didn't tend to look at the view over the Bay and to the hills. Very activity organised, e.g. dog walking, running, cycling. The running and cycling were all individual, perhaps area would benefit from an organised walking and cycling group. Convivial interaction from people in the 'selfie queue', shared purpose meant they had something to talk about together. Some groups even took photos of other groups and vice versa. Little or no interaction with the 'What's On in Morecambe' board nor the 'History of Morecambe' board. Limited interaction between groups on benches, sometimes a 'Do you mind if I sit here?' and 'Could you take a photo of us?' Some solo sitters passed the time by checking their phones, 'body glossing'. No interaction between groups of people on the promenade. Very few instances of face-to-face engagement. Very few looked at the geographical and biological interpretation boards (5 instances). People don't value the importance of Morecambe Bay as landscape.		

| Big views, landscape and nature		Cultural heritage		Outdoor recreation	
Agree	Disagree	Agree	Disagree	Agree	Disagree
3	3	2	5	2	1

9.3

References

1. Laurier, E. (2016) Participant and non-participant observation, *Key Methods in Geography* 3rd Edition Chapter 11
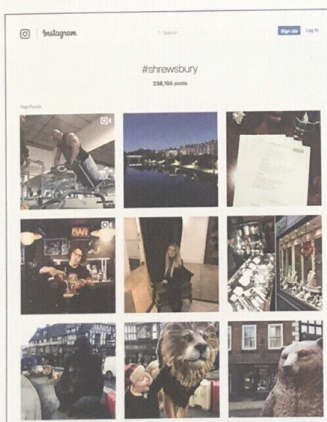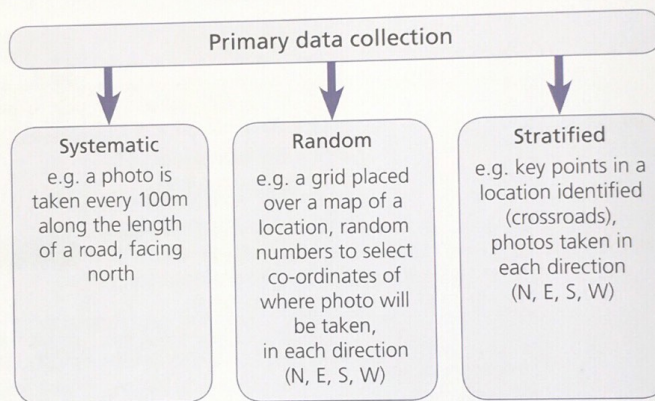
What your eyes can see is often the strongest sensation upon arrival in an unfamiliar place. Which views draw you in? Which views put you off? Visual methods are a way of capturing these sensations. Although the analysis of this qualitative data can seem daunting and difficult, drawing on a variety of analytical skills, it can lead to a deeper understanding of a place: how different people view it, how different people present the place, and how the place may have changed over time. A carefully chosen sampling strategy will need to be considered to collect a wide sample of media from a variety of sources.
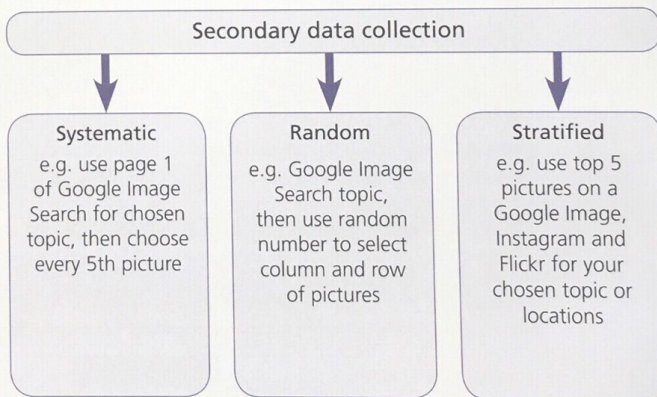
Methods and data collection

A. Finding visual sources
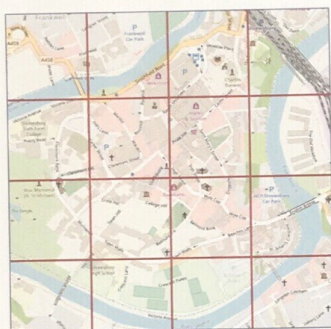
Planning for primary data collection using a base map © OpenStreetMap contributors **10.1**

Primary data collection

Systematic
e.g. a photo is taken every 100m along the length of a road, facing north

Random
e.g. a grid placed over a map of a location, random numbers to select co-ordinates of where photo will be taken, in each direction (N, E, S, W)

Stratified
e.g. key points in a location identified (crossroads), photos taken in each direction (N, E, S, W)

Secondary data collection

Systematic
e.g. use page 1 of Google Image Search for chosen topic, then choose every 5th picture

Random
e.g. Google Image Search topic, then use random number to select column and row of pictures

Stratified
e.g. use top 5 pictures on a Google Image, Instagram and Flickr for your chosen topic or locations

Using an Instagram hashtag as a secondary source **10.2**

B. Picture this

Find quotes from informal sources and do not suppo...

> Shrewsbury i... want to say o... A mix of the... one-off.

'Visit...

Pictures the quote... Cop (a quirky, one...

> Both the Pr... rapidly with r... to want to c... because eve...

Co...

Pictures the quo... Shrewsbury – th...

B. Picture this quote

Find quotes from formal sources (e.g. government reports) and informal sources (e.g. TripAdvisor). Take photographs that support and do not support each quote. Figs 10.3 & 10.4 are an example.

> ' Shrewsbury is full of higgle-piggledy streets with names you want to say out loud. A river that scoops up the town in a loop. A mix of the very old and the very new. The quirky and the one-off. '
>
> 'Visit Shrewsbury' website – www.originalshrewsbury.co.uk

Pictures the quote: Line of independent shops in Wyle Cop (a quirky, one-off street name), Shrewsbury.

Does not picture the quote: New two-storey branch of Primark opened recently in Castle Street, Shrewsbury.

> ' Both the Pride Hill and Darwin Shopping Centres are dying rapidly with numerous empty shops etc. What big names are going to want to come to Shrewsbury when footfall is at rock bottom because everyone shops elsewhere like Telford or Chester? '
>
> Comment by 'The Shadow' on the *Shropshire Star* website

Pictures the quote: Empty shop in Pride Hill, Shrewsbury – this shop has remained empty

Does not picture the quote: Vibrant and thriving Market Hall, with local craft, shops, food and drink.

C. Rephotography

This is the process of photographing a picture from the same view point as a previous photograph after a period of time has passed, providing a then and now snapshot of a location.

Rephotography visually shows how an area may have changed over time, as well how this place may be being used differently. Inferences on how this place is valued or viewed may also be possible from these photographs.

Rephotography: How has
Ironbridge changed? **10.5**

Data presentation and analysis

A. Reflecting on an image

Although photographs are often used simply as a form of data presentation, they can also be analysed more deeply.

1. Camera

- What do you see?
- What are your impressions?
- What is the focus of the image?

2. Maps

- Where are you?
- What is significant / insignificant in surrounding areas?

3. Zoom in

- Is there more than meets the eye?

4. Panorama

- What is the bigger picture?
- Are there wider implications?

5. Instagram

- What filter are you viewing from?
- What would others see?

Data presentation and analysis
B. Content analysis

This is a method for categorising and quantifying all of the information within a visual image. The categories you use are up to you, but should be exhaustive, exclusive and enlightening. Analysis of the images in Fig. 10.6 has been completed using eight categories (A-H) in Fig 10.7, showing how many times each category is recorded from the selection of pictures.

Summary statements can be generated from the content analysis. For example, Flickr represents Queen Elizabeth Park as having good amounts of urban parkland (56% of the images show this).

10.6 Randomised selection of images of Queen Elizabeth Olympic Park from Flickr

Category		Themes			
A	World location	Olympic Park = 9	London	UK	World
B	Gender of people	Female	Male	Mixed = 4	
C	Age of people	<18 = 2	18-40 = 2	>40	Family = 1
D	Urban or rural?	Urban = 5	Urban parkland = 5	Suburban	Rural
E	Sport shown	Games	Athletics = 1	Gymnastics	Outdoor pursuits = 1
F	Landmark shown	Yes = 6	No = 3		
G	Sponsorship or business linked?	Yes = 2	No = 7		
H	Wealth indicators	Yes = 2	No = 7		

10.7

C. Discourse analysis

Unlike content analysis, which only lists what is in an image, discourse analysis considers the image's deeper meaning. Panofsky's method[1] involves three levels of image analysis.

1. Primary, natural analysis (pre-iconographic)

2. Secondary, conventional (iconographic)

3. Intrinsic, symbolic (iconological)

1. Pre-iconographic	2. Iconographic	3. Iconological
Basic elements of the image	Connect the image to the wider context	Deciding what the meaning of the image is
What is the image depicting? Event at the Olympic stadium in London	What impact might the image have on different groups of people? UK resident: may reflect on personal memories of the event UK resident but not London-based: may feel excluded	What ideas are this image creating? Wealth, history, vibrancy, community, international
What are the main features? Union Jack flag Stadium with fireworks in sky. Text: 'Memories are Great' Smaller text 'Britain' Website link	How might people interpret the image? Prosperity of London. Impact of Olympic games on London Great Britain has a wealth of history (recent and more historic)	How does this image compare to other representations? Image is a very zoomed in of one particular event occurring at one building. Not representative of the Olympic Park in 2017 nor Great Britain as a whole
Who is the intended audience? Tourists, international visitors	What does this image represent about the place? Vibrant, sporting, proud of recent history	How is this place represented? Place is represented positively using a famous international platform
Who are the stakeholders? visitbritain.com London Olympics 2012	Is anyone marginalised/excluded from this image? London-centric historic image advertising Great Britain. Other places in the UK could be marginalised. Urban image, the 'Greatness' of more rural locations have not been shared	Is it a fair representation? Zoomed in snapshot of famous historic event. Not fair representation of this place currently
What form is the image in? Marketing used online and on billboards	What is the feel of this area? Regenerated, busy, popular	Does the image reinforce or challenge the pre-conceptions? London 2012 was a global event, Reinforce pre-conceptions that international visitors saw through the media of wealthy global country
When was this image taken/created? Opening or closing ceremony of London 2012 Olympics, subsequently turned into marketing message		What is the deeper meaning of this image or place? Pride in Great Britain

10.7 Discourse analysis of the image shown in Fig 10.8

Visit Britain campaign
www.visitbritain.org

D. Production context

When analysing visual methodologies it is always important to consider the source behind the image, the potential biases involved in the production of the image, and the messages it portrays[2]. A simple table can help focus the analysis of this production context (Fig. 10.9),

Discourse source	Production Context	Key demographic aimed at?	What deeper message is being portrayed?	Any conflicting messages?	How successfully does it convey this?
Visitbritain.com	Marketing	Tourists	Britain hosts vibrant cultural and sporting events	Marketing Great Britain as a whole, but is using a London-centric, historic event	Positive image of the vibrancy of the Olympic Park. But is of a historical event, no link to current events

10.9 Production context analysis of the image shown in Fig. 10.8

References

1. Panofsky, E. (1982) *Iconography and Iconology: An Introduction to the Study of Renaissance Art*. University of Chicago Press.

2. Rose, G. (2001) *Visual Methodologies: An Introduction to the Interpretation of Visual Materials*. Sage.
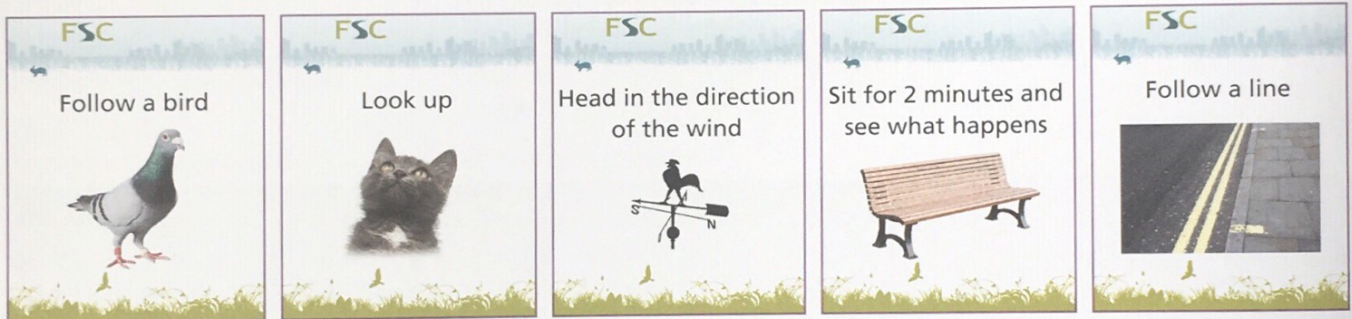
Urban spaces are designed in particular ways to manage flows of people, and to host and contain diverse activities and behaviours. Exploring these designed environments without bias can be a challenge without following desire lines to what you perceive as familiar branded shops or being filtered through personal motives to what you perceive as attractive and safe areas. Methods A and B show creative ways of exploring a location. Method C embraces this inherent bias and allows for a method of wandering that allows participants to be drawn by attractions and encounters.

## Methods and data collection

A. Urban drifting cards

These cards provide a structure for an observation, creating an opportunity for closer exploration of sounds, smells, colours and users in an environment as well as what is going on from different vantage points or scales. Students could create their own versions.


FSC	FSC	FSC	FSC	FSC
Follow a bird	Look up	Head in the direction of the wind	Sit for 2 minutes and see what happens	Follow a line

11.1 Some examples of urban drifting cards: students could easily create their own

B. Circular walking or Mapped shape

By spiralling out from a central feature in a location (Fig. 11.2), a full picture of an area can begin to emerge. More creatively a symbolic shape for the area can be superimposed onto a map and the route of that symbol followed (Fig. 11.3).

© OpenStreetMap contributors

© OpenStreetMap contributors
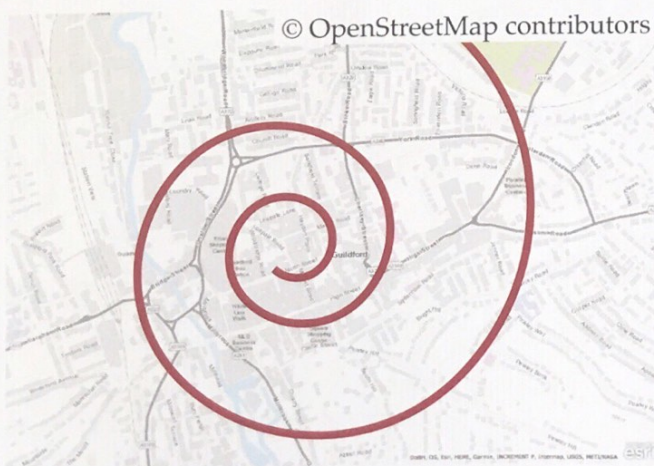
11.2 Circular walking route in Guildford: follow the route of the spiral as closely as possible
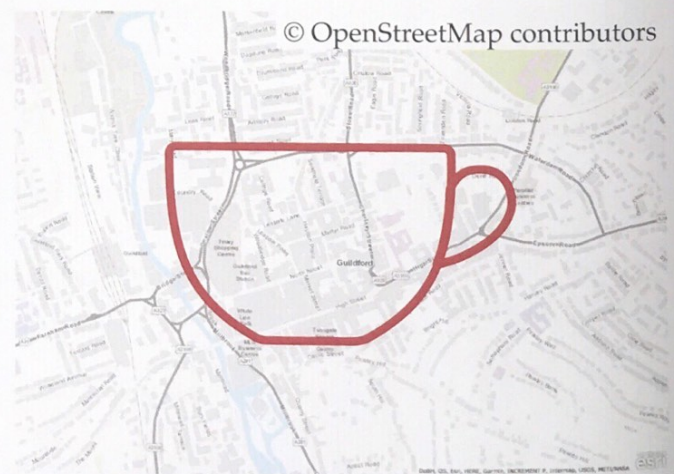
11.3 Teacup mapped shape (celebrating Guildford's link to Lewis Carroll and *Alice in Wonderland*)
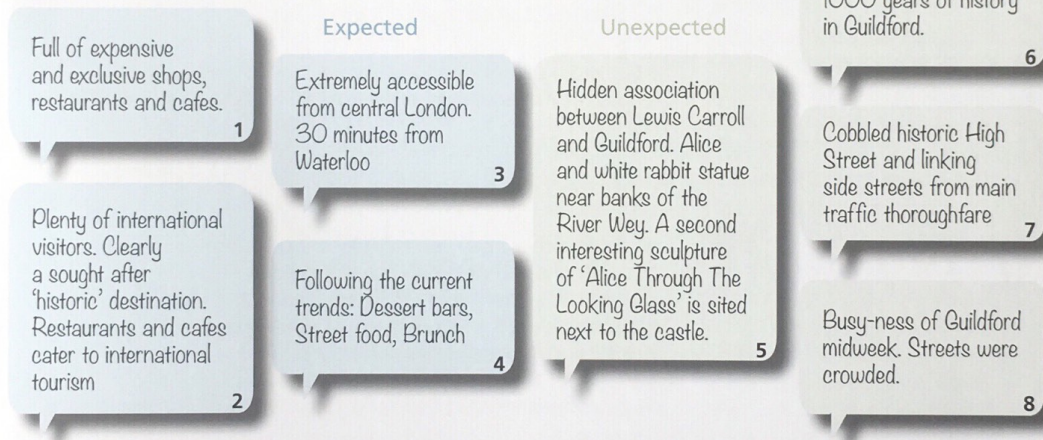
C. Dérive

By using the natural curiosity and playfulness of participants, routes are chosen through an environment by the draw of certain external features, sounds, smells, sights or through the pull of internal emotions.

With all of these methods, it is important that the journey is not just a path but rather an exploration using all of the senses and emotions. This will encompass the psychogeography principles as defined by Debord[1] resulting in a full and immersive picture of the environment.

Data presentation and analysis

Explorations of what was the same as expected, and what was different to expected, can be useful in uncovering preconceptions, misconceptions and hidden views of a place.

Expected

Unexpected

Full of expensive and exclusive shops, restaurants and cafes. **1**

Plenty of international visitors. Clearly a sought after 'historic' destination. Restaurants and cafes cater to international tourism **2**

Extremely accessible from central London. 30 minutes from Waterloo **3**

Following the current trends: Dessert bars, Street food, Brunch **4**

Hidden association between Lewis Carroll and Guildford. Alice and white rabbit statue near banks of the River Wey. A second interesting sculpture of 'Alice Through The Looking Glass' is sited next to the castle. **5**

Surprised by the 1000 years of history in Guildford. **6**

Cobbled historic High Street and linking side streets from main traffic thoroughfare **7**

Busy-ness of Guildford midweek. Streets were crowded. **8**

Negative					Neutral					Positive
-5	-4	-3	-2	-1	0	1	2	3	4	5
	1		8		6			3, 7	4	2, 5

11.4 Hidden views of Guildford: polar scaling coding analysis of 'expected' and 'unexpected' views

References

1. Debord, G. (1955) *Psychogeographic guide to Paris*. Bauhaus Imaginiste, Permild and Rosengreen.

Questionnaires, interviews, focus groups and observational studies are not wholly reliable. Limitations can arise when participants cannot remember details, but compensate by generalising or over-simplifing. External observers may count interactions, but cannot record the impact of that interaction on participants. Diaries in their various forms provide an opportunity for the researcher to delve deeper into an issue by collecting detail on actions, movements, feelings and responses. Depending on the nature of the investigation this may be done through a structured or unstructured process[1].

Activity log of green space interaction	
Date	
Location	
Start time	
End time	
Activity	
Number of interactions	
Who were those interactions with?	
Where did those interactions take place?	

12.1

Methods and data collection

A. Structured participant diaries

By asking participants to complete a structured activity diary over a short period of time (a week), accurate quantitative data can be collected alongside reflective qualitative information.[1]

B. Unstructured participant diaries

By providing an overarching theme, 'Local Food' participants can record their interactions and emotions relating to this theme (see Fig. 12.2).

C. Reflective researcher diaries

As a researcher in any environment, bombardment by observations and data can occur. Researchers can begin to interpret this information from their point of view and begin to draw conclusions that can have an influence on the data being collected. A research diary can help to maintain critical reflection throughout the research process, and allow inferences to be made that are substantiated and recorded using the data collected.

A structure for reflective fieldwork diaries whilst conducting fieldwork methods[1] could be:

- Heading
- Sequence of events
- Elaboration of one or two significant episodes
- Analysis of episodes

References

1. Posner, G. (2010) *Field experience: A guide to reflective teaching.* Pearson.

Data prese

- Descriptive statis
- Coding of struct 12.3 & 12.4 show in Fig. 12.2)
- When analysing interviews, a rese fieldwork diary w

Having heard so mu William Yard on soci has amazing food ph have decided to expl good food markets. I monthly markets as host to quite a few r almost half of these I could eat at anywh main draws for comi stalls advertised. The were so many people of opportunity to tas delights on offer. I ha sour dough artisan b baked that day. It wa supporting the marke morning in Plymouth. an absolute fortune expensive, and the f was extortionate in p fairly exclusive, I onl of the goods on offer food items. Not exac could do their weekly for a meal without ta as Plymouth has eas nearby who could su milk, cheese at a low olives and luxury ca in all I was fulfilled b saddened as the ma

12.4

Polar scaling score and description	-3			
	Stron nega			

1	2	3	4	
3	3	2	-1	2

Data presentation and analysis

- Descriptive statistics derived from structured participant diaries

- Coding of structured or unstructured participant diaries (Figs 12.3 & 12.4 show polar scale coding of the unstructured diary in Fig. 12.2)

- When analysing information from questionnaires and interviews, a researcher can compare their own reflective fieldwork diary written at the time of data collection

Having heard so much about the food at Royal William Yard on social media, the #yardlife always has amazing food photographed on Instagram, I have decided to explore one of the Yard's monthly good food markets. I decided to go to one of the monthly markets as although Royal William Yard is host to quite a few restaurants open all the time, almost half of these are chain restaurants, where I could eat at anywhere in the UK. So one of the main draws for coming was the localness of the stalls advertised. The market was bustling, there were so many people there, and there was plenty of opportunity to taste and sample some of the delights on offer. I had some of the most delicious sour dough artisan bread, made really local and baked that day. It was nice to see so many people supporting the market, especially on a slightly wet morning in Plymouth. The market must be making an absolute fortune too, as parking the car was expensive, and the food despite looking fabulous was extortionate in price. This market is definitely fairly exclusive, I only bought a few items. Most of the goods on offer were luxury non-essential food items. Not exactly where the average person could do their weekly shop, or even pick up food for a meal without taking out a loan. Shame really as Plymouth has easy access to some local farms nearby who could supply essentials like meat, milk, cheese at a lower price than the delicatessen olives and luxury carrot chutney on offer. So all in all I was fulfilled by my market experience but saddened as the market seemed exclusive. **12.2**

Having heard so much[1] about the food at Royal William Yard on social media, the #yardlife always has amazing food[2] photographed on Instagram,[3] I have decided to explore one of the Yard's monthly good food markets. I decided to go to one of the monthly markets as although Royal William Yard is host to quite a few restaurants open all the time, almost half of these are chain restaurants,[4] where I could eat at anywhere in the UK. So one of the main draws for coming was the localness of the stalls[5] advertised. The market was bustling,[6] there were so many people[7] there, and there was plenty of opportunity to taste and sample[8] some of the delights on offer. I had some of the most delicious[9] sour dough artisan bread, made really local and[10] baked that day.[10] It was nice to see so many people supporting the market,[11] especially on a slightly wet morning in Plymouth. The market must be making an absolute fortune[12] too, as parking the car was expensive,[13] and the food despite looking fabulous[14] was extortionate in price.[15] This market is definitely fairly exclusive,[16] I only bought a few items.[17] Most of the goods on offer were luxury non-essential food items.[18] Not exactly where the average person could do their weekly shop,[19] or even pick up food for a meal without taking out a loan.[20] Shame really as Plymouth has easy access to some local farms[21] nearby who could supply essentials like meat, milk, cheese at a lower price than the delicatessen olives and luxury carrot chutney on offer. So all in all I was fulfilled by my market experience[22] but saddened as the market seemed exclusive.[23] **12.3**

12.4	Statement number (1-23) from diary and polar scaling score						
Polar scaling score and description	-3 Strong negative	-2 Negative	-1 Somewhat negative	0 Neutral	1 Somewhat positive	2 Positive	3 Strong positive

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
3	3	2	-1	2	3	3	3	3	2	3	-3	-2	3	-3	-2	-1	-1	-2	-2	-1	2	-2

Leading provider of geography fieldwork

Field Studies Council, FSC, is an environmental education charity providing informative and enjoyable opportunities for people of all ages and abilities to discover, explore, and understand the environment.

Each year over 160,000 people experience FSC, many through our UK wide network of locations.

FSC is the leading provider of geography fieldwork, welcoming over 70,000 students on geography courses each year.

We have a range of centres throughout the UK that can help you deliver your geography fieldwork needs. All of them have gained the quality badge from the Council for Learning Outside the Classroom so you don't have to complete as much paperwork when arranging a visit to our Centres.

> We have trained a number of FSC Tutors to use ArcGIS Online and how to collect data with mobile devices using Collector for ArcGIS. If schools want to learn how GIS can be used in their teaching the FSC is a great place to see it in action.
>
> Jason Sawle
> Education Consultant at ESRI-UK

> The FNS will change how geography is taught at the FSC by enabling their staff to spend more time with students in the field, investigating and discussing geography in context.
>
> Dr Trevor Collins, Research Fellow at the Open University

> The Worldwise Challenge weekend was an inspirational experience for us all.
>
> Head of Geography at Newfield School

Innovative partnerships

FSC has formed some exciting partnerships to explore new ways to deliver geography fieldwork. Current A level and GCSE geography subject criteria provide plenty of opportunities to showcase them.

esri UK

The Open University

Worldwise
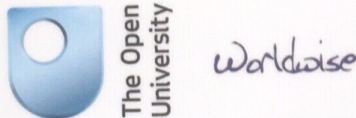
ESRI-UK's ArcGIS Online

FSC are working with ESRI-UK to incorporate their GIS technology into our fieldwork courses to help develop a deeper understanding of our world through geospatial data analysis. The tools they provide can help students during their fieldwork to interpret from many sources to develop theories and knowledge.

Geography Quality Mark

FSC is delighted to have received the Secondary Geography Quality Mark and Centre of Excellence status for 10 of our Field Centres in 2017. The SGQM is a prestigious award which recognises quality and progress in Geography leadership, curriculum development, and teaching and learning. In 2017, 16 schools, including 10 FSC Centres, were awarded Centre of Excellence status. The award recognises a school's contribution to disseminating quality approaches to the teaching of geography, global learning and fieldwork. Recognising hubs of excellence is pivotal to the GA's aim of spreading good practice by developing local networks of teachers.

Geographical Association's Worldwise Challenge

Each year about 10 schools are invited by the GA to send a team of 3 pupils and a teacher to take part in a broad range of enjoyable fieldwork activities at an FSC Field Centre.