

Data skills in geography: Changing Places

Explore how to incorporate quantitative skills into the A Level 'Changing Places' unit.

Introduction

With Changing Places as a new substantive theme for A Level Geography, there is an opportunity for students to develop their data skills in relation to the multiple meanings and identities of place, and the past and present relationships and connections that shape the nature of places.

Meanings and Representations

Place is one of geographies 'big ideas' and a particularly complex concept. It sits right in the heart of our subject and yet not all geographers have a firm understanding of the concept of place. The everyday understanding of place as a meaningful location is rather two-dimensional. Place is more dynamic than this, it is a social product and means different things to particular groups and identities. The meanings people give to place are developed with growing knowledge and emotional attachments, as a result of cultural activities. The cultural geographer Yi-Fu Tuan called this people-place bond 'a sense of place'. Meeting friends, attending events and spending time in a place can all foster emotional attachments and develop a strong sense of place. As well as direct encounters with place, vicarious representations of place such as in films, music and the media can also shape our perceptions of place. Some places evoking positive feelings of belonging, togetherness and wellbeing, whereas others are associated with the negative emotions of hopelessness, fear and alienation. By observing cultural activities or exploring formal and informal representations of particular localities, geographers can begin to understand the complexity of relationships people have with place. See [RGS-IBG Changing Places](#) for further details.

The political geographer John Agnew (1987) created a tripartite definition of place as location, locale and sense of place. Location describes the point on the Earth's surface where a particular place is found. Locale is the setting for people's daily activities and sense of place describes how we feel about particular meaningful locations.

Relationships and connections

Places are shaped by past and present connections. Past connections can leave traces or artefacts as a legacy of economic and cultural activities. People can become emotionally attached to these traces. Stonehenge is a spiritual place built by Neolithic people with a particular meaning for Pagans who adopted the stone circle as a meaningful site at which to celebrate each solstice. Even in places that have seen dramatic change, artefacts of the past are still key features in the fabric of the built environment. In 2012, Canary Wharf became the financial heart of London, when it overtook the Square Mile of the City of London as the biggest employer of bankers in Europe. The financial hub of London is now located on land freed up by the closure of the West India Docks. Places change over time and develop layered history. This history helps to shape the identity and 'personality' of a place. Many of the Dockland warehouses have been repurposed for residential houses and commercial activity. The 14 Stothert and Pitt Cranes of the Royal Victoria Dock could not be repurposed, but were given Grade II listed protection and kept in place due to

their historic importance and iconic nature. London has many other landmarks that have been repurposed when their original purpose has become redundant. Think about the conversion of Bankside Power Station into the Tate Modern Gallery and Battersea Power Station into London's newest mixed-use neighbourhood.

Global sense of place

Present and past connections between places can also help to explain particular flows of people, resources, capital and ideas. In the past, when places were not so well connected by air, rail or road, people developed stronger place-bonds with their community as they spent more of their lived experience in a particular locality. With globalisation and more efficient communication technology people are now more mobile and have become disconnected from the local. As a result of the global spread of culture, capitalism and multi-national corporations, places are seen to be less authentic and more homogenised. The New Economic Foundation (2009) using the term 'clone town' to describe high streets dominated by global chain stores. Human movements are still greatest within rather than between countries, but knowledge, culture and capital can shift electronically as if we lived in a borderless world. If we explore the links and flows in our globalised world, we can better understand the nature of place. Doreen Massey called this concept a global sense of place, in which places are likened to a 'bundle of trajectories', a nexus of local and distant connections. According to Massey, places are dynamic, continuously changing and are constantly in the process of being re-constructed by a wide-range of actors.

This five lesson series will focus on the following enquiry questions and data skills:

Lesson	Enquiry question	Data	Data skills
1	Comparing places: Is Greenwich West the best place to live in the borough?	GLA's London Datastore	Analysing data from big data sets, creating graphs in Microsoft Excel, comparing data.
2	Different places: Is there evidence of inequality between neighbours in Royal Greenwich?	ESRI's ArcGIS & Index of Multiple Deprivation (IMD)	Creating layers in ArcGIS to investigate IMD data and carry out an Environmental Quality Survey using virtual fieldwork and adding this data to ArcGIS
3	The geography of deprivation: Where should a new food bank be located?	Index of Multiple Deprivation (IMD)	Exploring geospatial data, decision making exercise based on geo-spatial data and Internet research of the Trussell Trust website.
4	The geography of health: How does life expectancy vary across London?	GLA's London Datastore	Testing the strength of the relationship, with scatter graphs and Spearman's rank correlation coefficient, between life expectancy and distance across London.
5	Connections and flows: How is the young face of London changing?	Office for National Statistics (ONS) Census data	Creating graphs in Microsoft Excel, comparing data and calculating measures of dispersion.

Place study

To put the data skills covered in this lesson series into a geographical context, it is worth turning our attention to a particular place the ward of Greenwich West in South-East London. Greenwich West is typical of many urban villages, which have their own identity, but have been subsumed by urban sprawl into a larger scaled place (Greater London). Greenwich, just like your locality, has been affected by a number of social and economic processes. This section will use a range of data sources that can be explored and used for the development of data skills to build a richer geographical understanding of place.

Location, locale and sense of place

Greenwich West ward covers 2.8 square kilometres of land in South-East London. The ward lies along the south bank of the River Thames and is bordered by Deptford Creek to the west, and the wards of Blackheath Westcombe and Greenwich Peninsula to the east. It is one of 17 wards within the London Borough of Greenwich, formed in 1965 with the merger of Greenwich and Woolwich Boroughs. On the Diamond Jubilee of Elizabeth II in February 2012, it was given the status of London's fourth Royal Borough.

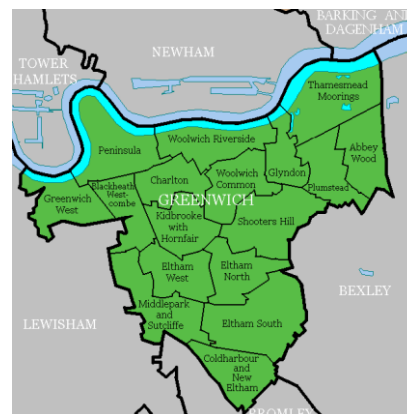


Figure 1 The Royal Borough of Greenwich
(Carlwev at English [Wikipedia](#) CC BY-SA 3.0)

The geographical location of Greenwich is globally significant (Latitude 51° 28' 38" N, Longitude 0° 0' 0"). It is the home of the Prime Meridian, which was defined by the 'Transit Circle' telescope and runs straight through the Royal Observatory. The Prime Meridian was established in 1851 and adopted internationally just 33 years later. If you consider that a meridian is a north-south line selected as the zero reference line for astronomical observations, then Greenwich is the prime location of longitude. Spatial positions of longitude are measured from Greenwich, so too is time, hence Greenwich Mean Time (GMT). The Observatory forms part of a World Heritage site along with other nearby historic buildings.

Past connections

Greenwich was established as a Saxon village known as Green Wic, green referring to the farming settlement and wic meaning port. The original St Alfege Church was built in the 11th Century on the site where Alphege, the Archbishop of Canterbury was killed, it has been replaced several times since and forms the core around which Greenwich town has grown. Greenwich has many royal connections. Several Tudors including Henry VIII and Elizabeth I were born here. James I built Queen's house (which is still standing) for his wife Anne, unfortunately she never got to see it as she died before it was completed in 1637. The Royal Park was laid out in the 1660s, by André Le Nôtre. James I built a brick wall around it, this prevented other developments from encroaching on the 75-acre site. The Royal Observatory was built in 1675 by Charles II for John Flamsteed, the first Astronomer Royal. The area still bears visible traces of its naval and astronomical past and this unique selling point as the home of time is used by Visit London to sell Greenwich to tourist worldwide.

The arrival of the railway in 1838 connected Greenwich to London Bridge and was built specifically for passengers. It triggered rapid population growth, as people could now work in the heart of city and live much further out. The railway also brought tourists in larger numbers, attracted by the royal buildings and parkland. Today, 17 million tourists visit the Royal Observatory each year to stand on the Prime Meridian where East meets West. Although the National Observatory has moved to Herstmonceaux Castle in East Sussex, the Royal Observatory Greenwich is now used as for museum space and the Peter Harrison Planetarium where you can explore your place in the universe.

Located between Greenwich Park and the River Thames is the Old Royal Naval College designed by Christopher Wren and the National Maritime Museum where thousands of artefacts from London's seafaring past can be viewed. One of the most iconic naval artefacts, housed in a dry dock since 1954, is the Victorian tea clipper ship the Cutty Sark. The world's sole surviving clipper ship has been a riverside destination for school trips, a famous landmark on the London marathon route and a symbol of Britain's proud maritime heritage, maintaining our identity as an island nation. 2012 was a very important year for Greenwich. The Royal Park hosted the equestrian events for the London Olympics. A strategic move saw the Royal Observatory, Planetarium, Cutty Sark, National Maritime Museum and the Queen's House all becoming part of one umbrella organisation called Royal Museums Greenwich. This made the task of representing and marketing Greenwich as a key tourism destination to be consumed by investors and the public much easier. As a result, Greenwich was listed as a top ten worldwide destination, the only UK location to be listed.

Data sources

The following statistical data sources can be explored to find out more about place:

Demographic data

The Office for National Statistics (ONS) produce official socio-economic data for the UK, which has been collected since 1801 <http://www.ons.gov.uk/ons/index.html>. If it seems too daunting to navigate the ONS data, students can explore data using DataShine, a mapping project set up to promote the use of ONS Quick Statistics data <http://datashine.org.uk/> or try the 'How well do you know your area?' quiz at <http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dvc147/>. The Greater London Authority (GLA) stores a wealth of geospatial ward level data available at <http://data.london.gov.uk>.

Housing, health, education and quality of life

- House types, prices and availability <http://www.rightmove.co.uk> or <http://www.zoopla.co.uk>
- Profile of residents of a postcode <http://www.checkmyfile.com/>
- Public Health England provide Health Profiles <http://fingertips.phe.org.uk/profile/health-profiles/>
- Local health data is available at <http://www.localhealth.org.uk>
- Health and Social Care Information Centre (HSCIC) at <https://digital.nhs.uk>
- The Index of Multiple Deprivation (IMD) data for 2015 has been mapped at <http://maps.cdrc.ac.uk/>
- School types and standards quality <http://home.rm.com/schoolfinder/>
- Crime data <http://www.ukcrimestats.com> or <http://www.crime-statistics.co.uk>

Check www.rgs.org/dataskillsresources for further links and information.

Demographic nature of Greenwich West

The east of Greenwich has historically been perceived to be working class, the area once supplying the manpower for London's heavy industries, whereas Greenwich West was perceived to be wealthier, with a better stock of housing and residents of a higher social economic status. Today the picture of Greenwich West has not altered significantly, this could be due to the lack of space limiting opportunities for redevelopment, unlike at Greenwich Peninsula. Some new housing has been constructed in the zone between Deptford Creek and Greenwich High Road, most of which are low-rise private flats. Greenwich West has a higher than average number of graduates (49.9 per cent of the 18,450 residents), professionals (ABC1 social-economic status) and those earning over £40,000. The median age of residents is relatively low (31 years) highlighting the lower than average number of older people aged 65+ in the ward (8 per cent). Of the rented housing, around half of it is social housing, so although there is a great deal of wealth in Greenwich West, there is also a significant number of households with a low income. 18 per cent of dependent children live in out-of-work households (HMRC, 2014).

Figure 2 Demographics for Greenwich West (ONS)

Population - 2015	18450
Children aged 0-15 - 2015	3450
Working-age (16-64) - 2015	13550
Older people aged 65+ - 2015	1450
% All Children aged 0-15 - 2015	19
% All Working-age (16-64) - 2015	73
% All Older people aged 65+ - 2015	8
Mean Age - 2013	33
Median Age - 2013	32

Of the 17 wards in the borough of Greenwich, Greenwich West has the most expensive housing. The median house price of £450,000 (2014) is £85,000 higher than for Greater London and £113,000 higher than for the rest of the borough. The housing stock originally consisted of larger than average dwellings, many of which have been subdivided into flats and maisonettes (71.7 per cent of the housing stock). This is perhaps the key reason why a majority of residents are renters (68 per cent) rather than homeowners (32 per cent). Rent on a two-bedroom flat can cost anything from £1,200 a month. A low median age for the area indicates that many of the renters work in the city and can afford to pay these high rents as they can benefit from a central location. Canary Wharf is just 9 minutes commute on the Docklands Light Railway.

Social inequality and quality of life

In 2016, Greenwich was ranked by an ONS survey as the most unhappy place in London. The survey asked respondents about their levels of happiness, anxiety, life satisfaction and whether they felt life was worthwhile. You can explore for yourself ONS’s geospatial well-being data with their Personal Well-being Explorer (link [here](#)).

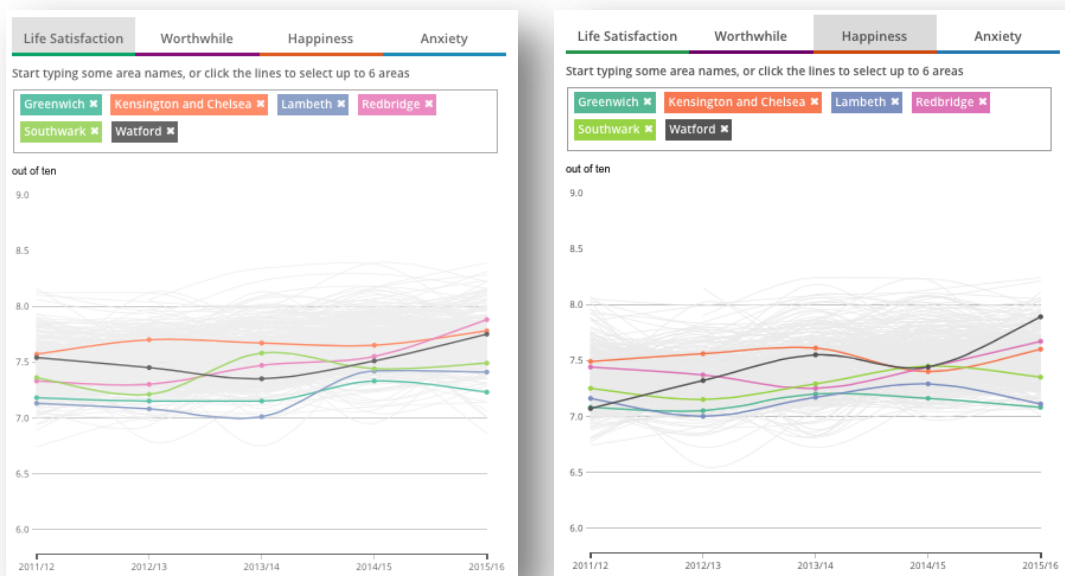


Figure 3 Life satisfaction and happiness scores from the Annual Population Survey (ONS, 2016)

Compared with benchmark Better Similar Worse Lower Similar Higher Not compared

Indicator	Period	England	London region	Barking and Dagenham	Barnet	Bexley	Brent	Bromley	Camden	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith and Fulham	Harrovy	Havering	Hillingdon	Hounslow	Islington	
Deprivation score (IMD 2015)	2015	21.8	-	34.6	17.8	16.2	26.7	15.2	25.0	23.6	23.6	27.0	25.5	35.3	24.4	31.0	14.3	17.9	18.1	22.5	32.5
Children in low income families (under 16s)	2013	18.6	21.8	28.4	15.8	18.4	21.0	14.9	27.6	21.8	19.2	25.5	25.1	27.7	23.8	24.4	14.7	18.4	17.9	19.7	32.4
Statutory homelessness	2014/15	0.9	-	7.5	1.0	1.0	2.4	1.1	0.1	2.4	3.7	0.5	0.6	2.0	0.6	0.7	0.3	0.7	0.3	0.4	1.6
GCSEs achieved	2014/15	57.3	61.2	54.0	68.8	57.0	59.5	69.7	56.9	60.1	64.6	55.6	57.5	61.4*	58.7	55.0	65.3	58.5	59.4	62.8	59.2
Violent crime (violence offences)	2014/15	13.5	19.4	23.1	13.5	13.0	21.0	15.2	21.1	20.3	18.9	16.4	21.7	24.4	21.9	21.3	13.0	14.5	20.0	19.9	24.4
Long term unemployment	2015	4.6	5.1	6.0	3.3	2.6	7.5	2.4	4.2	4.1	5.5	5.4	5.0	8.0	6.9	7.6	2.6	3.9	2.4	3.4	6.6
Smoking status at time of delivery	2014/15	11.4*	4.8*	10.2	3.7	7.9	3.5	4.7	*	6.9	3.7	*	*	4.9*	2.4	*	4.7	10.4	7.4	3.3*	*
Breastfeeding initiation	2014/15	74.3	86.1	78.0	85.1	*	88.8	*	90.5	*	86.5	86.7	*	92.0	86.6	90.9	88.7	73.3	83.4	90.8	88.2
Obese children (Year 6)	2014/15	19.1	22.6	25.4	18.0	22.1	24.1	16.5	20.7	24.0	22.8	25.7	23.6	25.7*	23.1	23.1	21.2	20.5	19.3	22.6	22.0
Alcohol-specific hospital stays (under 18)	2012/13 -14/15	36.6	23.7	18.6	25.0	17.0	14.7	22.7	37.7	24.4	25.2	18.5	17.8	17.8*	15.0	29.4	16.1	17.2	38.0	24.3	43.5
Under 18 conceptions	2014	22.8	21.5	32.4	12.8	19.5	18.5	16.7	16.8	28.4	17.8	24.6	28.1	24.7*	22.4	22.6	11.0	22.8	20.5	25.0	20.2
Smoking Prevalence in adults	2015	16.9	16.3	18.4	14.6	14.1	12.2	14.2	15.9	17.9	15.2	16.8	14.2	20.5	18.7	22.0	13.2	17.3	16.9	14.1	17.6
Percentage of physically active adults	2015	57.0	57.8	46.0	59.5	53.9	49.2	62.9	64.0	60.6	54.7	55.5	51.5	53.8	61.0	58.2	55.0	55.4	51.5	55.0	60.3
Excess weight in adults	2012 - 14	64.6	58.4	68.4	57.8	66.8	59.2	63.8	46.0	63.0	60.3	64.8	64.0	50.4	52.1	55.5	60.0	65.5	63.4	62.2	52.3
Cancer diagnosed at early stage	2014	50.7	48.2	46.9	52.2	48.0	51.6	42.3	45.8	53.0	49.6	52.0	46.8	53.8	44.7	46.2	50.1	41.3	46.3	49.4	48.2
Hospital stays for self-harm	2014/15	191.4	97.3	118.9	99.0	89.4	58.9	118.6	87.8	140.5	105.3	83.1	74.0	103.1*	89.7	94.1	71.4	85.0	124.5	136.5	118.6
Hospital stays for alcohol-related harm	2014/15	641	526	529	488	469	519	503	572	455	559	585	504	630	548	632	473	430	553	482	753
Recorded diabetes	2014/15	6.4	6.1	7.3	6.0	6.9	8.0	5.4	4.1	6.6	7.4	7.1	6.2	5.7	4.4	5.9	8.8	6.0	6.7	6.8	5.1
Incidence of TB	2012 - 14	13.5	35.4	35.0	23.2	10.7	82.9	8.1	21.8	27.6	65.3	22.5	42.0	32.4	24.2	33.2	60.4	10.9	41.9	64.0	29.3
New sexually transmitted infections (STI)	2015	815	1606	1106	980	631	1631	736	1963	1413	1226	1042	1295	2776	2483	1987	780	789	937	981	2266
Hip fractures in people aged 65 and over	2014/15	571	517	590	516	580	428	530	441	494	481	553	496	512*	418	582	441	628	506	550	582
Life expectancy at birth (Male)	2012 - 14	79.5	80.3	77.6	82.1	80.4	80.1	81.4	81.8	80.3	80.6	80.7	79.0	78.5	79.7	80.1	82.7	80.2	80.4	80.0	79.0
Life expectancy at birth (Female)	2012 - 14	83.2	84.2	82.1	85.1	84.4	85.1	84.9	86.7	83.6	84.2	84.1	82.5	83.3	84.1	84.9	86.1	83.9	83.9	83.9	83.5
Infant mortality	2012 - 14	4.0	3.6	4.4	2.2	2.8	4.1	1.6	2.9	4.0	3.4	4.0	4.2	5.6*	4.7	3.0	4.2	3.2	3.3	3.9	2.6
Killed and seriously injured on roads	2012 - 14	39.3	29.8	22.6	30.8	15.5	26.8	22.0	41.9	22.3	24.3	21.8	17.8	37.6	37.7	37.7	18.5	24.1	26.3	25.3	44.2
Suicide rate	2012 - 14	10.0	7.8	8.0	7.6	9.6	8.3	8.7	10.4	8.2	5.6	6.1	5.2	8.3	10.1	11.1	5.1	7.3	6.7	5.3	10.3
Deaths from drug misuse	2012 - 14	3.4	2.3	*	*	*	*	2.7	4.1	*	*	*	*	*	*	2.9	*	*	*	*	4.1
Smoking related deaths	2012 - 14	274.8	261.4	365.0	202.9	269.7	219.9	237.2	246.7	254.4	228.0	243.6	323.2	326.0	314.9	271.4	184.9	289.4	262.6	267.6	339.5
Under 75 mortality rate: cardiovascular	2012 - 14	75.7	78.7	100.9	61.3	71.0	98.4	63.2	65.9	77.4	84.5	73.0	84.7	107.4	90.2	90.2	69.1	68.5	78.3	82.8	96.8
Under 75 mortality rate: cancer	2012 - 14	141.5	132.6	168.9	109.8	140.5	122.9	120.9	128.2	127.5	128.5	130.7	147.7	156.9	135.6	133.7	105.8	141.7	142.3	130.8	149.9
Excess winter deaths	Aug 2011 - Jul 2014	15.6	16.1	25.6	18.0	15.3	19.9	16.5	9.5	16.8	18.4	23.0	23.5	11.3*	17.0	17.5	13.9	17.0	10.9	15.1	17.8

Figure 4 Public Health Profiles for Greenwich and other London Boroughs ([Public Health England](#))

Figure 5 Images of Greenwich



The prime meridian at the Royal Observatory (Takasunrise0921 [public domain](#)), Greenwich Park (pd4pc.com [public domain](#)), Greenwich Park on Whitsun 1802 (British Library [public domain](#)), Greenwich Hospital from the North Bank of the Thames ([Web Gallery of Art](#) [public domain](#)), A Spanish figurehead at the National Maritime Museum (E.Smith) and the Cutty Sark in it's custom built housing (E. Smith)

Figure 5 Informal representations of Greenwich

Poetry - The Hall 1838-2014

The Victoria ticket hall swells and billows
as people move in and out, out and in,
sway as if a ship's brass bell was ringing
to ask "where I am" and "how do I go?"
The air vibrates with swift replies, words
of praise, thanks, have a nice day surround
and almost raise the listed roof with sound.
But notice the plants, climbing up unheard.
The red Virginia creeper pressing the beams,
A Chinese plum wrestling with wild bergamot,
French lavender, Nigerian yams and Turkish
cyclamen – a virtual garden, a musical thicket
of accented English, shooting up tough and tall.
The creak as the ceiling lifts to cover all.
NJ Haynes

Contemporary music
Listen to a piece of music which will last
1,000 years, without ever repeating
itself. You can hear the music if you visit
the Onion Dome which houses the 28-
inch Greenwich refracting telescope at
the Royal Observatory Greenwich. The
aptly-named Longplayer sound
installation was designed and composed
by Jem Finer, formerly of The Pogues.
Longplayer has been playing ever since
1999 and will continue to play till 2999.
Longplayer's permanent home is in
Trinity Buoy Wharf.

Film sets
Greenwich is the location for hundreds
films that lay claim to over \$4bn at the
box office. Top titles such as Gulliver's
Travels (2010) and The King's Speech
(2010) have used the Old Royal Naval
College as the backdrop. The Elephant of
the Bastille, a monument in Paris, was
recreated in Greenwich for the film Les
Misérables (2012). Andrea Vail/Flickr [CC](#)



London from Greenwich Park J M W Turner
(Tate Britain [public domain](#))

View of a Greenwich resident
"I chose to live in Greenwich due to
its transport links, the Park and
proximity to the Thames which
gives a real sense of space to the
area. I love to sit and watch the
river, it has its own pace and way of
life. Greenwich is a great place to
live because it has a community
feel, some great places to eat and
drink and I love the vintage markets
and shops. However, the pollution
levels are high here and this is a
concern for me".

Data skills resources

- The RGS have produced the Innovation in Fieldwork Report focused on fieldwork in schools http://www.rgs.org/NR/rdonlyres/0623FC4F-8042-468D-9609-39C24476151A/0/FW_Benchmarking_study.pdf
- David Holmes puts forward the 'The case for qualitative fieldwork' in this RGS-IBG article <http://www.rgs.org/OurWork/Schools/Fieldwork+and+local+learning/Planning+your+fieldtrip/Fieldwork+ideas/Qualitative+fieldwork.htm>
- Analyse this! Qualitative data <http://archive.learnhigher.ac.uk/analysethis/main/qualitative.html>
- Open University data skills <http://www2.open.ac.uk/students/skillsforstudy/conducting-an-interview.php#>
- The British Library have released over a million images onto Flickr Commons for anyone to use, remix and repurpose <https://www.flickr.com/photos/britishlibrary>
- Harris, R. et al (2013) Quantitative Methods in Geography: Making the Connections between Schools, Universities and Employers. London: Royal Geographical Society (with IBG).
- Harris, R. et al (2014) 'Geographers Count: A Report on Quantitative Methods in Geography', Enhancing Learning in the Social Sciences 6 (2), 43-58.
- RGS-IBG papers by [Professor Rich Harris](#) and [Professor Rich Phillips](#)

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