**Changing places: exploring the past and change over time**

**Aim:** To explore the PopulationsPast website and find out more about how your local area has changed over time.

**Themes:** Changing places; Geography; History; Social, economic and demographic change.

**Materials**: [www.populationspast.org](http://www.populationspast.org)

**Step 1: Finding your local area on PopulationsPast**

* Open [www.populationspast.org](http://www.populationspast.org)
* Navigate to your local area
  + Enter your town/village/area (eg ‘Cambridge’) or postcode in the ‘Search locations and move map’ box which is at the top left of the map.
  + You will see coloured shapes with gray outlines. These are the Registration Sub-Districts (RSDs) which are the smallest unit for which it is possible to provide a wide range of data in the late nineteenth and early twentieth centuries.
  + Under the RSD shapes there is an underlying historic map. Look at this map to see if you can find the area where your school/home is located. You might need to zoom in closer by double clicking on the map or clicking the  button at the top left of the map, but you won’t be able to zoom in very close or see road names. Don’t worry if you can’t locate the road – maybe it wasn’t yet built when the land was surveyed for the map!
  + The default background map is from the ‘Bartholomew 1897-1907’ map series which is pretty but not always very accurate. Try looking at the more accurate Ordnance Survey One Inch series by clicking on the layer button  at the bottom right of the map and choosing ‘OS One Inch 1885-1900’.

**Step 2: Comparing your local area in the late nineteenth century to how it is today**

* Change the map background to a modern map by clicking on the layer button  at the bottom right of the map and choosing ‘OpenStreetMap’ or ’OS Open Data’. Compare the extent of the built up area, and the roads and railways, in the past with how they are today.
* The ‘Compare side-by-side’ button  in the top right of the screen allows you to look at the same area but different background maps: click on ‘Compare side-by-side’ and then choose a different map background for each map. (Hint: make sure the ‘keep map positions in sync’ button is ticked and then the two maps will move together.)
* Compare other parts of your city/town/village to see how they have changed:
  + Has there been much additional building in the last 100 years?
  + Has it been concentrated in particular areas?
  + Can you see places which were previously distinct villages, now subsumed into neighbouring places?
  + What sort of spaces have changed the most – spaces in the centre or periphery of a place?
  + Is the road layout similar or different?

**Step 3: Exploring characteristics of your local area in the past**

* Switch off ‘compare side-by-side’ view by un-checking the tick box.
* The colours of the RSD shapes represent values of particular sorts of data, or variables. You can choose what to show by clicking on one of the list of variables from the list in the black panel on the right, and what year to show it for by moving the year slider at the top right.
* Click on ‘Type of place’ (the second variable in the list)
  + The type of place has been defined by the occupational structure of the Registration Sub-District. You can see the precise definitions by clicking on the further details icon  by Type of place in the list of variables (NB this is not available on the side-by-side view).
  + Change the year to see how the Type of place changed between 1851 and 1911 as the occupational structure changed and towns and cities spread into the countryside (zoom out to get a better sense of this).
  + Bear in mind that the historic map backgrounds reflect the situation towards the end of the nineteenth century, and in many places there was a considerable amount of building between 1851 and the 1890s.
* Now click on one of the other variables from the list in the black panel on the right of the screen, such as Infant Mortality Rate (click on the arrow by Mortality and health to find this).
  + See how the values of that variable change over time by looking at different years. Use your map cursor to hover over your chosen place. The ‘information box’ at the top right of the map screen tells you the value for the variable in your chosen place for your chosen year. You can look at different years at the same time using the side-by-side view.
* Look at the text associated with your chosen variable and look at the graph showing the average values for England and Wales over time. Click on the further details icon  in the list of variables and explore the explanation in the pop-up window.
  + How does the value in your local place compare?
  + If it is different, why do you think this might be?
* Look at the graph showing the average values for the different Types of place over time. (Hint: scroll down to the bottom of the explanation window to see this.)
  + Is your local place typical of that Type of place?
  + If it is different, why do you think this might be?

**Step 4: Compare your local area with a contrasting place**

* Find a contrasting area to compare (if your local area is rural or a small town, choose a city, and vice versa)
* The ‘Compare side-by-side’ function allows you to look at a different place in each side-by-side window by unchecking the ‘Keep map positions in sync’  button at the top right of the screen.
  + How do the two areas differ?
  + Why do you think this is?

**Step 5: Download and analyse data**

* The data export button  downloads the places and values shown in the map window you have selected. Download data for two different variables you have selected. Copy one set into the same worksheet as the other, making sure the places are exactly the same (if you have changed the places showing in the map window in between selecting variables this may be different).
* Use statistical tools to examine correlations between the data.
  + - One of the easiest ways to do this is to draw a scatter plot with one variable on the horizontal axis and the other variable on the vertical axis. Each dot will represent one place.
    - To create a scatter plot in MS Excel move or copy the columns containing the data you wish to compare so that they are in adjacent columns in the worksheet. Highlight both columns and click the Insert tab. On the Charts menu click the scatter plot icon . A graph will be produced which shows the data in your first column on the horizontal axis and the data in your second on the vertical axis.
    - You can add axis titles by clicking on the Chart Tools/Design tab, and then the Add Chart Element icon.
    - You can add a trend-line using the Chart Tools/Design tab and Add Chart Element icon. If you right-click on the line on the graph, you can format it to show the equation of the line and the R-squared value. The R-squared value shows how tight the relationship between the variables is (ie how correlated the variables are): a higher number shows a closer relationship, and the maximum of 1.0 occurs when the value of one variable precisely predicts the value of the other (using the equation). When the R-squared is 0 or very small this shows there is no statistical correlation between the variables.
    - A fun variation on a scatter plot is a bubble chart, where the size of the dot for each place is determined by the population size. To do this make sure Population is the third column after your variables of interest, and choose one of the bubble plots from the scatter plot drop down menu.
  + If you have found a relationship, think about whether it is likely to be a causal relationship or not (remember, correlation is not necessarily causation)
  + If you have not found a relationship, why do you think no relationship is apparent?

**Step 6: Compare with modern data**

* Open <http://datashine.org.uk>
  + Datashine Census shows 2011 census data for very small output areas
  + Datashine OAC shows 2011 geodemographic classifications of small output areas.
* <http://ec.europa.eu/eurostat/statistical-atlas/gis/viewer/>?
  + Gives European data at a regional level, including demographic data such as fertility and mortality (but not infant and child mortality which is now very low all over Europe).

**Additional notes for teachers**

* A few areas don’t have data for every year.
* Area borders have been simplified so they may not be precise at a local level.
* Areas change over time and so units are not constant over time.
* Interesting places to contrast include different parts of big cities such as London, Manchester and Liverpool, and surrounding rural areas.
* Talking points could include:
  + The origins and development of the North-South divide
  + Relationships between variables
    - Infant mortality and population density
    - Industrial structure and women’s work opportunities
    - Servant-keeping and social class
    - Marriage and fertility rates
* If you wish to use the entire dataset with your class, we can supply this for you.