

# Melbourne Atlas

## Student worksheet

### Geographic Characteristics of Melbourne

Refer to [page 1.2](#) of the [Melbourne Atlas](#): 'Melbourne's Growth'.

1. Describe the size and extent of Melbourne in 1851.
2. Describe the spatial change over time in the size and shape of Melbourne between 1851 and 2004. Use the dates 1883, 1954 and 2001 as your key dates of reference.
3. What are some possible reasons for this pattern? Include at least one natural factor and one human factor. Pages [1.7](#), [5.15](#), [8.5](#) and [map R4](#) in the *Melbourne Atlas Reference Maps* may help.

Refer to [page 1.3](#) of the *Melbourne Atlas*: 'Spreading out – 1954 to 2001', chart 4 'Changes in car ownership'.

4. Describe the changing trend of car ownership between 1950 and 2004. How many people is this per car?
5. What are the SHEEPT (Social, Historical, Economic, Environmental, Political and Technological) factors that have contributed to the changes in car ownership?
6. With use of a table identify the impacts on people and place/environment if this pattern continues.
7. What might happen if the Government proposed a tax on CO<sub>2</sub> (carbon dioxide) emissions, therefore making it twice as expensive to own a car?

### Population

Refer to [page 2.3](#) of the *Melbourne Atlas*: 'Age groups in Melbourne'.

8. Describe the distribution of each of the age groups in Melbourne. (Remember to use PQE – general Pattern, Quantified example, Exceptions).
9. Analyse and discuss the general trends/patterns you have identified.
10. Establish the spatial association that exists between those locations with large percentages of people aged between 0-19 and those aged 30-49. Explain.
11. 20-29 year olds are primarily located in close proximity to the CBD of Melbourne. What are some possible explanations for this pattern?

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#### Manufacturing (overlay mapping skills task)

*Refer to data provided below*

*Job locations for manufacturing, LGAs within the Melbourne Statistical Division (MSD), 1971 and 2001*

Local Government Area	No. manufacturing jobs 1971	No. manufacturing jobs 2001
Melbourne	62,010	18,504
Yarra	35,568	9,071
Maribyrnong	26,881	8,748
Kingston	23,142	24,600
Monash	23,070	21,009
Moreland	22,287	8,630
Darebin	20,766	9,449
Hobsons Bay	15,056	10,279
Greater Dandenong	14,076	24,997
Whitehorse	11,434	7,949
Port Phillip	10,794	6,561
Brimbank	9,974	10,513
Hume	9,563	22,369
Stonnington	9,330	2,703
Glen Eira	8,530	2,973
Moonee Valley	7,558	3,364
Boroondara	6,938	3,597
Bayside	6,694	2,998
Maroondah	5,859	9,453
Banyule	5,202	4,433
Knox	3,109	16,026
Whittlesea	3,042	9,393
Yarra Ranges	2,166	5,328
Mornington Peninsula	2,021	4,585
Frankston	1,743	4,409
Wyndham	1,179	5,154
Manningham	901	1,090
Nillumbik	571	1,027
Casey	197	4,086
Melton	56	943
Cardinia	0	1,583
<b>TOTAL</b>	<b>349,718</b>	<b>265,823</b>

#### *Mapping task*

12. On an outline map of Melbourne's Local Government Areas (LGAs), plot the number of jobs in manufacturing in 1971 using the choropleth technique.

*Step 1:* Examine the data and work out a key/legend for your base map. Decide on the categories you will use. Identify which LGAs had the highest and lowest number of manufacturing jobs in 1971. This will give you a range for your data.

*Step 2:* Make sure that the data categories are logically spaced, e.g. by intervals of 5, 10 etc. Make sure that you have a maximum of 5 categories.

*Step 3:* Select your colour or colours. Choose the lightest colour or shade for the category representing the lowest numbers. Choose the darkest colour or shade for the category that represents the highest numbers. Such a gradation in shading is called choropleth mapping.

*Step 4:* Colour in your map.

*Step 5:* Ensure that you include all of BOLTSS (Border, Orientation, Legend, Title, Scale and Source).

#### *Questions about the map*

13. Describe the distribution of manufacturing job locations in 1971.
14. Give possible reasons or explanations for the pattern identified.

#### *Overlay mapping task*

15. On an overlay map, plot the number of jobs for manufacturing in 2001.

*Step 1:* On a sheet of tracing paper or overlay sheet trace the outline of Port Phillip Bay to enable you to match the two maps.

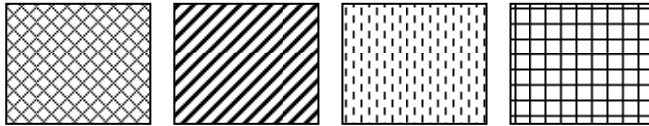
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*Step 2:* Using the same categories selected for the locations of manufacturing jobs on your base map use hatching instead of colour to represent the categories in your legend for the 2001 map (*see example below*).

Examples of hatching for maps



*Step 3:* Complete your overlay map using the hatching method.

*Step 4:* Ensure that you include all of BOLTSS. Ensure that your BOLTSS does not obscure any of the BOLTSS found on your base map.

#### Questions about the overlay map

16. Describe the distribution of manufacturing job locations in 2001.
17. Discuss possible reasons or explanations for the pattern identified.
18. Which LGAs show the greatest change over time?
19. What might happen if a new transport hub (including an airport and dock facilities) were located on the Mornington Peninsula? How could this effect the location of manufacturing jobs? Why?
20. Using a table, identify the positive and negative impacts on people and place/environment, of the change in the location of manufacturing jobs moving from inner locations of Melbourne.

#### Climate

21. Refer to figure 3 on [page 8.5](#) of the *Melbourne Atlas*, 'Average annual rainfall'. Imagine a transect running west to east through the CBD (northern tip of Port Phillip Bay). Describe the rainfall pattern as you move from west to east.
22. Using [map R4](#) in the *Melbourne Atlas Reference Maps*, describe the degree of spatial association between the rainfall pattern and physical characteristics.
23. What is Melbourne's average annual rainfall? Figure 2 on [page 8.5](#) of the *Melbourne Atlas* will help.
24. Refer to figure 4 on [page 8.5](#) of the *Melbourne Atlas* to describe the distribution pattern of Melbourne's average annual minimum temperature. Provide a reason to account for this pattern.

### Geographic characteristics of Melbourne

25. Read 'The urban heat island effect' and figure 6 on [page 8.4](#) of the *Melbourne Atlas*. What evidence is there that Melbourne's urban heat island effect influences temperatures?
26. Read 'What difference does 1 degree make?' on [page 8.4](#) of the *Melbourne Atlas*, and "Climate change" and figure 4 on [page 8.5](#). Select two outcomes of climate change you see as being most significant. Justify your choice.

Published by the Victorian Department of Sustainability and Environment, August 2007.  
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