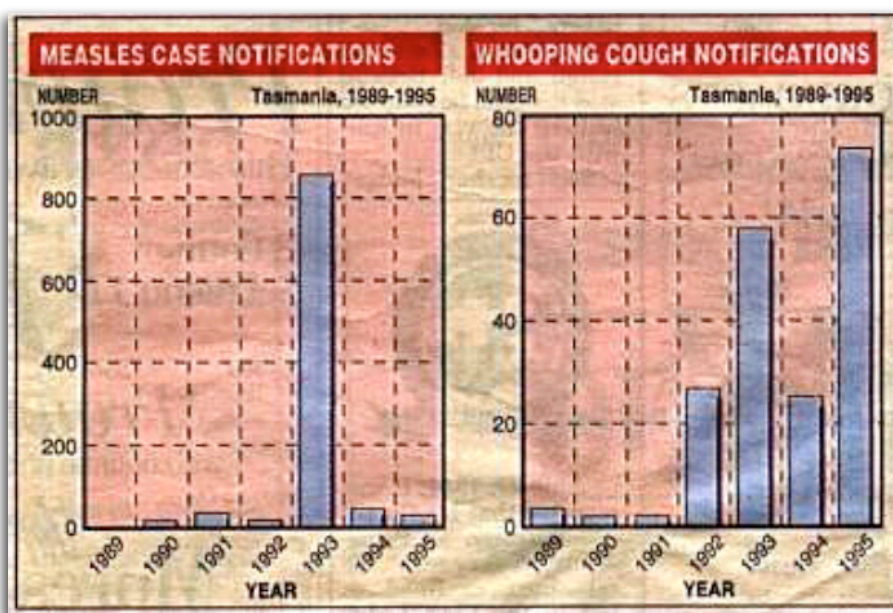


<http://topdrawer.aamt.edu.au/Statistics/Misunderstandings/Misleading-graphs/Scale-activities>

Misleading scales: Student worksheet

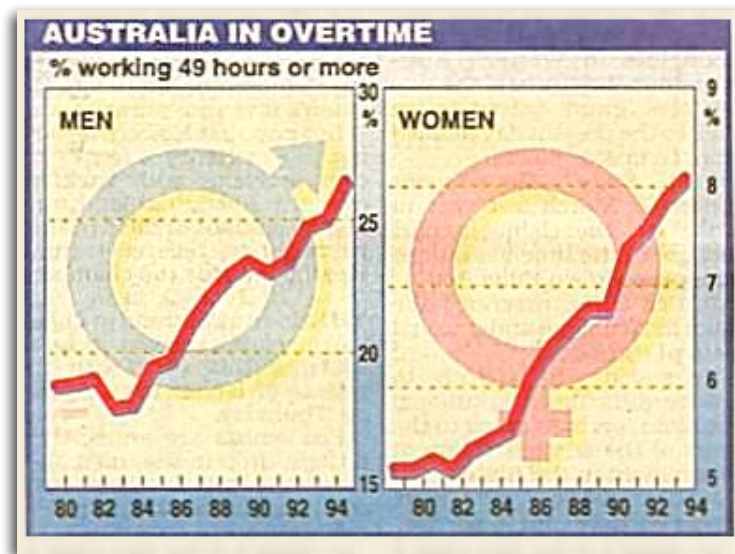
Measles and whooping cough



1. What are the titles of the two graphs?
2. Glancing at the graphs, which disease might you think is more serious based on notifications?
3. What is the vertical scale on each graph reporting the number of notifications?
4. Why is the representation misleading?
5. Where would you place the value for whooping on the measles graph?
6. Why do you think a newspaper would produce a graph such as this?



Australia overtime for men and women



1. What is the title of the graph?
2. What is it about?
3. Although there is no label, what does the horizontal axis appear to record?
4. Why do you think the red lines are increasing across the graph?
5. Where is the label for the vertical axis?
6. What does the vertical axis record?
7. What was the approximate percentage of men working ≥ 49 hours in 1982? In 1994?
8. What was the approximate percentage of women working ≥ 49 hours in 1982? In 1994?
9. What was the increase in percentage for men from 1982 to 1994? For women?
10. What are the differences in scale between the men's and women's graphs?
11. What is the change in the percentage of overtime for men from 1980 to 1994?
12. What is the change in the percentage of overtime for women from 1980 to 1994?
13. What are the two ways that the difference in the change for men and women can be reported?
14. What are the two ways of comparing the actual percentage of men and women working overtime in 1994?
15. What is the percentage increase in the percentage of men working overtime between 1980 and 1994?
16. What is the percentage increase in the percentage of women working overtime between 1980 and 1994?

17. Which group had the greatest percentage increase in their percentage of overtime work: men or women?
18. The graphs do not report the actual numbers of men and women working overtime. Hence more questions should come from the statistically literate. What are some of these questions?

Activity

1. Produce graphs on the **same** scale for these values.
What are the difficulties with this type of representation?
2. Now imagine you were a journalist about to write an article.
What would the headline be?
3. Write a paragraph for the newspaper using the second set of graphs.

Further activity

1. Collect graphs that appear in your local media.
Are any misleading or confusing?