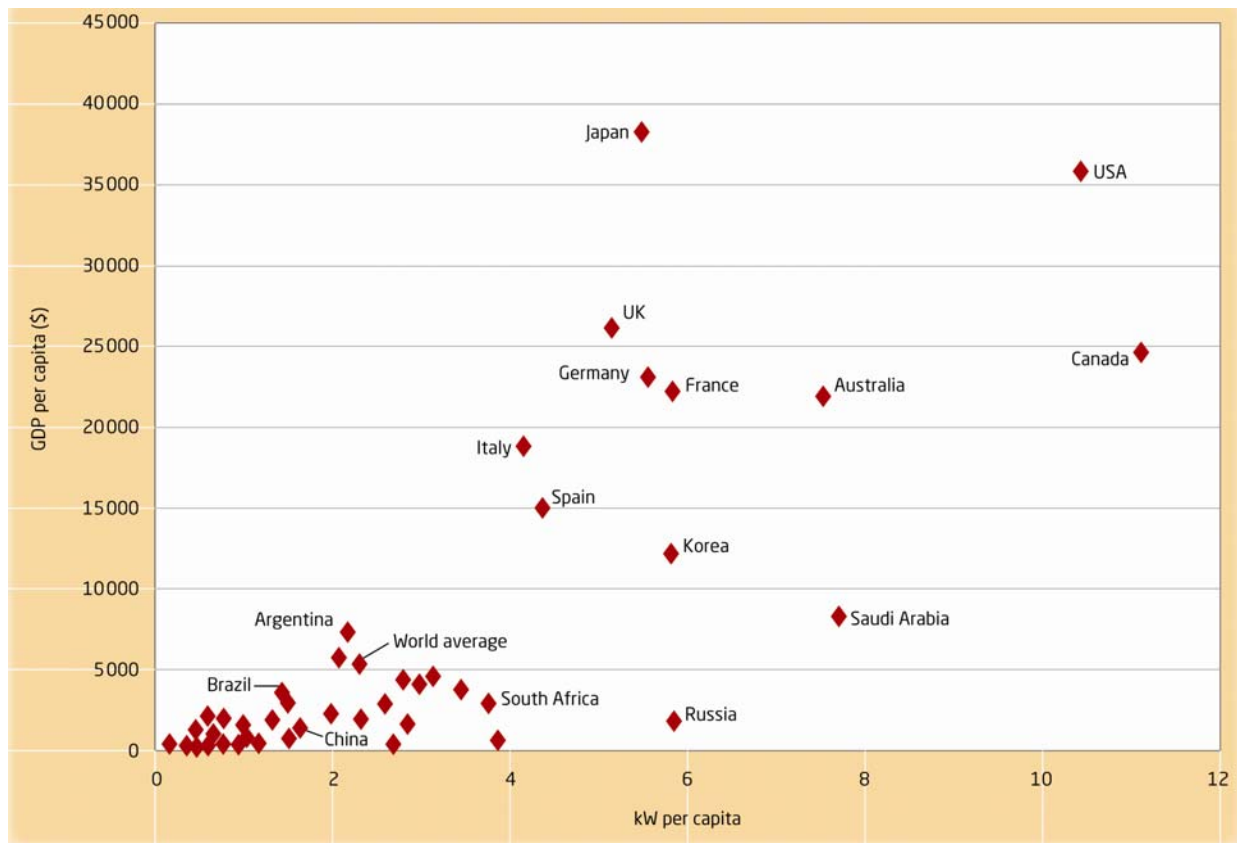


**Worksheet 8: Patterns in resource consumption**

- 1 Study Figure 8.1 below and draw a line of best fit onto the graph.



**Figure 8.1** The relationship between GDP per capita and energy use, for all countries with more than 20 million inhabitants.

- 2 How would you describe the relationship between the two variables?

- 3 Suggest reasons why Russia uses more energy per \$ of GDP than most other countries.
- 4 Suggest reasons why Japan uses less energy per \$ of GDP than most other countries.
- 5 Using a ruler, complete Figure 8.2 on the following page by carefully noting the figures for both energy use and GDP per capita for all the individual countries (16 in all) named on the scattergraph. Use Spearman's rank correlation coefficient to test the relationship between the two variables. Make sure that you include a statement of significance.

$$\begin{aligned}r_s &= 1 - \frac{6 \sum d^2}{n^3 - n} \\&= 1 - \frac{6 \times ?}{16^3 - 16} \\&= \\&= \\r_s &= \end{aligned}$$

Statement of significance:

Country	GDP per capita	Rank of GDP per capita	kW per capita	Rank of kW per capita	Difference in ranking ( $d$ )	Difference in ranking squared ( $d^2$ )
Argentina						
Australia						
Brazil						
Canada						
China						
France						
Germany						
Italy						
Japan						
Korea						
Russia						
Saudi Arabia						
South Africa						
Spain						
UK						
USA						

**Figure 8.2**