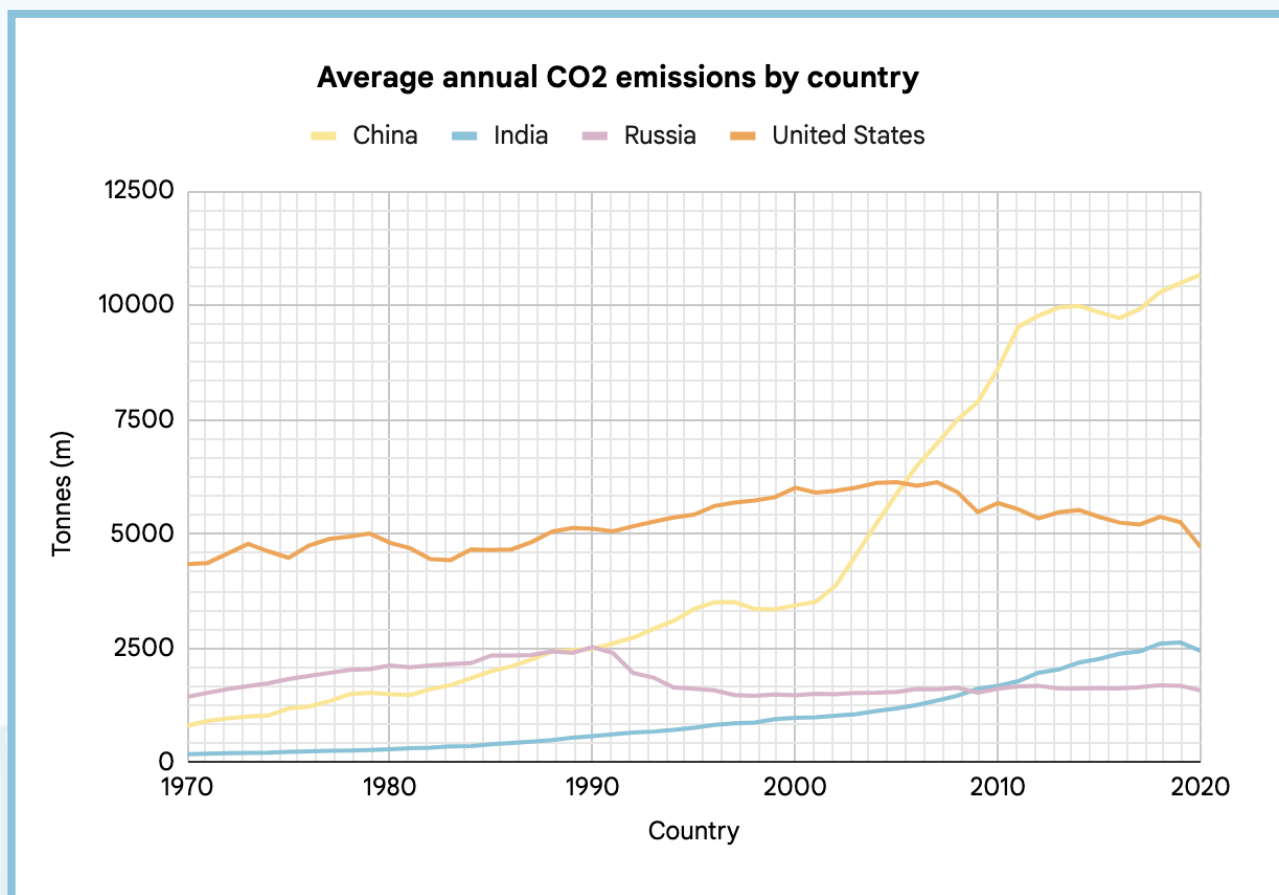


# 17. Statistics and Algebra

As climate change continues to cause concern in countries across the globe, there is increased pressure on the world's biggest economies – and emitters of CO<sub>2</sub> – to curb their emissions. You decide to find out more about the world's largest CO<sub>2</sub> emitters to understand what trends might be causing them to increase – or decrease – their total emissions.

The below graph shows CO<sub>2</sub> emissions in millions of tonnes per year per country.



1. Which country was the largest emitter of CO<sub>2</sub> in 2007?

2. Comment on the CO<sub>2</sub> emissions produced by each country in 2020. What trends do you notice?

3. What were the approximate total CO<sub>2</sub> emissions of the four countries in 2010?

4. What proportion of the total CO<sub>2</sub> emissions of the four countries in 2010 did each country contribute?

5. What type of graph would you need to use to best visualise the proportion of emissions each country produced in a certain year?

6. Draw an approximate line of best fit on the graph on page 1 to demonstrate the growth in emissions from China between 2003 and 2007.

7. What is the gradient of your line of best fit that you drew on the graph on page 1?

8. Discuss the trend in India's CO<sub>2</sub> emissions over the period displayed in the graph on page 1. What do you think might be causing the overall increase in emissions over the period from 2010 to 2020?

9. By how much (in tonnes and as a percentage) did emissions increase from 1970 to 1990 in Russia?

10. The table below shows Japan's emissions over the same time period. Plot this line onto the graph on page 1.

Year	1970	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
CO2 emissions (millions of tonnes)	768	869	945	912	1,158	1,240	1,264	1,290	1,215	1,223	1,031