**Define Moore’s law** and explain why it has now stopped being true. Be sure to describe all of the physical limitations that have prevented Moore’s law from continuing to be true.

Moore observed that the density of transistors would double every 2 years.

The increase in transistor density would result in an increase in processing speed. However, there is a limit to how the doubling of density would increase the processing speed as the increase in power consumption and heat generation is unsustainable. Transistors consume power when switching, and increase density results in increased power consumption. This in turn leads to heat generation, which needs to be removed by cooling fans.

In addition, the voltage needs to scale with transistor size, but the voltage cannot go below the threshold voltage as it results in noise issues.