

BUFFON'S NEEDLE

Buffon's¹ Needle refers to the general class of problems:

If a needle is dropped at random onto a surface covered by a set of parallel lines, what is the probability that it crosses one of the lines?

A SPECIAL CASE

Assume that the parallel lines on the surface are all equally spaced a distance d apart, and the needle also has length d .

- Can you work out the probability that a randomly dropped needle crosses one of the lines?
- On the reverse of this sheet you will find some equally spaced parallel lines. Use the 'needles' provided to investigate.

THINGS TO THINK ABOUT

Think about how one could analyse the other cases. The analysis for the case of a needle with length less than the gap between lines is just a minor modification of the approach for the case outlined above. When the length of the needle is greater than the gap between lines then the analysis requires a little more thought.

¹Georges-Louis Leclerc, Comte de Buffon, 1707 – 1788, French naturalist and mathematician

