

## Dice trolling

### Probability

- AMELIA                      So, who's making the tea today? Usual numbers? 1, 2, 3, 4, 5 and 6.
- GARETH                    Oh, not again... I always make the tea! This dice is biased and I'm going to prove it.
- Look, 10 days and I've had to make the tea 4 times, that's 40% of the time, which is much greater than a sixth! Yes, Ok a proportion of 0.4, Nigel.
- AMELIA                      Ok Gareth, give it time. See how it goes after a month.
- You know, you could be right Gareth. Maybe we do need a new, fairer dice.
- GARETH                    Give it time.
- Looks like this dice really is weighted, which makes it biased. It's been a year and the proportions have been fairly stable for a while now.
- We've got Catherine making tea about 50% of the time, or 0.5. Everyone else is around 0.1. 10%.
- AMELIA                      So how many times would I expect to make the tea in a month?
- GARETH                    If we use 4 weeks for a month, that's 20 working days, multiplied by 0.1 is 2 times. But Catherine would have to do it 20 multiplied by 0.5, which is 10 times. We'd better get a new dice.
- AMELIA                      Well yes, but Catherine does make a nice cuppa...
- AMELIA/GARETH        Give it time!