

## The Summer Fayre

1. Which game are you most likely to win?
2. Which game should the school encourage you to play?
3. What is the chance of winning if you played 1, 5, or 10 times?
4. What is the average payout? (How much money can the school expect to make/lose through each game in the long term?)
5. On which go may a win be theoretically expected?
6. What is the breakeven point and what is the chance of reaching (or missing) the breakeven point?
7. How much money could the school expect to make/lose through the stall (both games) in the long term?

Extensions...

- a) What if both games were changed to 'get all showing the same result'? Implications for players, implications for the school?
- b) What about another game where contestants can flip a coin three times and, if they get three heads they win £100 but if they get three tails they pay £10.  
Would students choose to play this game or not? Is this game a good idea for the school to offer?

## Lesson Plan

1. Derren Brown 10 coins video and explanation
2. Six 6's; for and against
3. Excel simulation
4. Conclusion
5. Insurance policy
6. Summer fayre expo
7. Summer fayre questions