

Testing Humans: 1



Kira is designing an experiment that will test whether people can really taste any difference between tap water (which is free) and the bottled water they pay for.



This is her plan:

- She will set up a table with two samples of tap water (from two different houses) and three samples of bottled water (from the shop).
- Some will be 'cheap' bottled water and some will be 'expensive' bottled water.
- All the samples will be labelled so people know exactly what they are.
- She will ask each person doing the test to taste each sample.
- They have to give each sample a mark out of 10 according to how much they like the taste.

Discuss:

What do you think of Kira's test?

What would you change?

Is it simple enough to answer the original question?

Testing Humans: 2



Jack is always being told by his parents that looking at screens just before bedtime will have a really bad effect on how well he sleeps. He has now decided to do his own scientific investigation to see if there is any evidence to support this claim amongst his class mates.

He has found 15 volunteers to be part of his study and gives each of them a diary. He asks them to complete the diary **every day for a month**. He wants them to record all the times in the day that they use their screens, giving detailed descriptions of what they are looking at and how long for. He also wants them to record what time they turn their lights off to go to sleep at night, what time they think they actually asleep and then what time they wake up.



Discuss:

What is your opinion of Jack's plan?

How could he simplify it and still answer his question.

Testing Humans: 3



As part of an investigation Mr Moran's class have built a full **obstacle course** in their school hall. They are interested in finding out whether having a crowd cheering and shouting on the sideline affects people's sports performance. The obstacle course consists of 6 separate challenges that will test people's fitness, strength and skills, such as running, jumping, balancing and crawling. It's a tough course but they have 6 volunteers and each one will be asked to complete all the challenges of the course **as quickly as they can** on two separate days. On the first day they all complete the course with the crowd (the rest of the class) watching silently. On the second day everyone in the crowd cheers and screams encouragement as they repeat the course again to see if this impacts on the time it takes them to complete the course.

Discuss:

Mr Moran points out that the '*Easier When Repeated*' issue may be a bit of a problem here. Can you suggest changes to their plan that will help them reduce the impact of this on their investigation?

Testing Humans: 4



Josh and Orla are interested in the differences between people who consider themselves naturally "**lucky**" and people who think they are not. They wonder if "luck" is **real** or if lucky people sometimes behave differently without realising it and make their own luck. For their experiment they create a printed booklet that has at least **12 pages** in it. Each page contains lots of random writing and photographs. They then find 3 people who naturally think of themselves as 'lucky' and 3 who see themselves as generally 'unlucky' and ask them each to **complete a simple task**. They ask each person to sit on their own and look through the booklet and count how many photographs are in the booklet altogether. And that is it! What **they do not tell anyone** is that on the 5th page there is a written message (in fairly large letters) that says...

IF YOU SEE THIS MESSAGE TELL JOSH AND ORLA IMMEDIATELY and claim your prize!!!

Josh and Orla want to see if anyone spots it. They have predicted that the people who think of themselves as 'unlucky' are more likely to stay focused on counting the photos and will not notice, but the 'lucky' people will be more likely to spot the unexpected opportunity to win a prize! So maybe being 'lucky' is more about having a greater awareness and seeing opportunities that others miss?

Discuss:

What should people know about the reason for the test (before they do it)? How could Josh and Orla go about finding people to do their experiment?