Section 3

CLARE: Hi Jake. How are you getting on with the practical teaching?

JAKE: (1) ……., but I've got some great classes. How about you?

CLARE: Not brilliant. I'm really struggling with my Year 12 science class.

JAKE: Are they hard to control?

CLARE: Well, (2) …….. as such. It's just that they don't seem to think that science has anything to do with their lives. It's depressing. They listen to what I say, and I gave them a test last week and the results weren't too bad, but (3) ……..

JAKE: Right

CLARE: And as part of my teaching practice, I have to design an experiment for them to do. I was wondering about (4) ……..…. you know, asking them to record what they eat and maybe linking it to their state of health.

JAKE: Mmm. Let's think. So your methodology would involve (5)…….. OK, but you'd also need to have access to the children's medical records and I don't think people would be happy about that; (6) …….. If you could get the right data, the conclusions might be significant, but I suspect it's not going to be easy.

CLARE: Right.

JAKE: Have you thought about (7) ……..?

CLARE: Wouldn't that be upsetting for the children?

JAKE: Well, the animals (8) ……... It could just be an experiment where they're given a certain diet and the effects are observed.

Would I have to (9) ……?

JAKE: Yes, you'd have to submit an outline of the experiment and fill in a form, but (10) ……...

CLARE: But if we found out that, say, a particular diet affects the health of animals, the same thing wouldn't necessarily be true for people, would it?

JAKE: No that's true, but (11) …… are going to be limited. It's inevitable.

CLARE: I suppose so. So what animals could I use to investigate the effects of diet? Mice?

JAKE: Yes. You'd need experimental mice — ones that have been (12)……...

OK, so what will your experiment be investigating exactly?

CLARE: Well, something to do with nutrition. So maybe we could look at food supplements . . . things like (13) ……., and their impact on health.

JAKE: Mmm. That might be rather broad. Maybe just look at (14)……., like sugar, on the health of the mice?

CLARE: In fact, maybe the focus could be on whether mice can control their own diet.

JAKE: So, what happens when (15) ……., that they don't really need?

CLARE: Exactly. Do they eat it or do they decide to leave it?

JAKE: Great. Then later on, you could (16) ……. adding another variable. Like, you could give some of the mice the chance to

be more active, (17) ……. and the others just sit around and don't do much.

Or I could repeat the experiment but change the type of food I provided ... or use mice (18) ……. But I think your idea would be more interesting, I might think about that some more.

CLARE: So can I (19) ……. for the experiment where mice are given a sugar supplement?

JAKE: Sure. I did a similar experiment in college actually.

CLARE: Great. So how many mice would I need?

JAKE: I'd say about 12. And all young ones, (20) …….

CLARE: OK. And I'd need two groups of equal sizes, so six in each group. And how would I tell them apart? I suppose I could put some sort of tag on one group ... or just mark them in some way?

JAKE: You could use food colouring, (21) ……...

CLARE: Perfect. Then each group would go into a separate cage, and one group, let's call them group A, would be the control group. So they'd just have (22) ……..... I suppose you can buy that?

JAKE: Yes, it comes in dry pellets.

CLARE: And the other group would have the same as the first group, but they'd also have the extra sugar.

JAKE: Would you just (23) …….?

CLARE: It might be better to give them something like cereal with it.

JAKE: Mmm. Then you'd need to weigh the mice, I should think once a week. And you'd (24) ……...

CLARE: But we can't hold them on the balance, or it'd affect the reading.

JAKE: Exactly. So you need something called a weighing chamber to (25)…….. It sounds complicated, but actually you can just use a plastic box with holes in the top.

OK. So once we've measured the weight gain of each mouse we can work out (26) ……., as well as the standard deviation. And then see where we go from there. That sounds cool, I think the students will enjoy it.

JAKE: Yes. One thing . . .