**PRE-TASK QUESTIONS**

**You are encouraged to think aloud, and use loud voices.**

Assume that eye colour is taken to be one of five possibilities:

Brown, Blue, Hazel, Green, Other

1. In NZ, what percentage or proportion of the population do you estimate to have:
   1. Brown eyes?
   2. Blue eyes?
   3. Hazel eyes?
   4. Green eyes?
   5. Other?

1. Draw a diagram or display to represent the distribution in (1).
2. For each eye colour proportion, what proportion do you estimate to be male or female?
3. Draw a diagram or display to represent the proportions in (3).
4. Using your diagram in (4), answer the following:
   1. Of those with brown eyes, what proportion of them are male?
   2. What proportion of all of the people (NZ population) are female with blue eyes?
   3. If you pick a person at random, what is the probability that the person has hazel eyes, given they are a female?
   4. If you pick a person at random, what is the probability that the person is a male and has green eyes?
   5. Given that a person selected at random has green eyes, what is the probability that the person is a female?
5. Do you think that an individual’s eye colour depends on whether that individual is male or female? Why?
6. Can you explain independence using your diagram in (4)?
7. Pretend that eye colour and gender are dependent/independent (which ever the opposite is to (6)), how would your diagram in (4) change?