

Achievement Standard 91263 (Mathematics and Statistics 2.8)**Design a questionnaire****Practice assessment****Solution**

Answers will vary – an example follows.

Research

The Harvard School of Public Health has stated that, 'two out of three adults and one out of three children in the United States are overweight or obese, and the nation spends an estimated \$190 billion a year treating obesity-related health conditions'. Rising consumption of sugary drinks has been a major contributor to the obesity epidemic. A typical 20-ounce soda contains 15 to 18 teaspoons of sugar and upwards of 240 calories. A 64-ounce fountain cola drink could have up to 700 calories. People who drink this "liquid candy" do not feel as full as if they had eaten the same calories from solid food and do not compensate by eating less.'

Soft drinks are readily available and are often cheaper than other drinks, such as milk. Soft drinks have, however, been implicated in serious health issues, including obesity, osteoporosis and tooth decay.

The Organic Consumers Association has reported that 'Soft drinks have replaced milk in the diets of many American children as well as adults'. Research has shown there is a strong relationship between soft-drink consumption and body weight and it is estimated that consuming an extra soft drink a day gives a child a 60% greater chance of becoming obese. The extra liquid calories affect the ability of older children to compensate at mealtime leading to overeating and in time, to obesity.

Designing the questionnaire

A questionnaire will be written to determine how much soft drink is consumed by students at a local high school, Princeton High School. The purpose of the questionnaire is to determine whether the local Primary Health Organisation (PHO) should run an education programme in the school aimed at reducing the consumption of soft drinks.

Note: A log would need to be kept documenting the questionnaire writing process, to help determine where changes to question content, type and order could be made. A desk check would need to be carried out after the initial draft of the questionnaire. (These are assumed to have been carried out.)

In writing the questions I have thought about the length of the questionnaire, ensuring it was long enough to get the information required without being off-putting for the respondent which could result in a reduced response rate. The questionnaire was therefore designed to be able to be completed in 10 minutes, by using closed questions.

I have been careful about the order questions were asked so they have a logical flow, by grouping related questions together. Following a desk review I decided to move the demographic questions (to find out information about the background of the respondent) to the start of the questionnaire, so as to be less intimidating than going straight into answering questions on their habits concerning the drinking of soft drinks.

So, in the final questionnaire the initial questions are background ones. These are included because I believe it may be important to determine if there is a gender imbalance in the use of soft drinks and whether there are differences in consumption between different age/Year level groups.

The next group of questions focused on which types of soft drink are consumed (to see how much of a role brand power played), and the amount of soft drink consumed (to determine if consumption levels were excessive and by how much).

The final questions focused on motivation for drinking soft drinks. As my questionnaire was to be answered by a group of teenagers I made sure that the questions were relevant to them and that the language used in the questions was appropriate. This was to ensure the questions were more likely to be answered appropriately, without risking alienating the respondents.

I have tried to use the same format for blocks of questions in order to maintain respondents' concentration and to assist them by making the process of answering the questions as straightforward as possible.

After an initial review of the questions, I included an extra question for those who did not consume soft drinks to determine their reasons, and to avoid their having to go through all the following questions without finding a question that applied to

them. The inclusion of this extra question meant that I could remove a category from each of the following questions that was intended for those who did not drink soft drinks on a regular basis.

From the pilot survey, I found there were two commonly used brands of soft drink that I had not included so these were added as extra options. In using the closed questions it was important for any lists to be as full as possible, while maintaining the 'other' option for the lesser-known brands.

In my introduction I have attempted to persuade the respondent to participate in the survey, by explaining who is conducting the study, why it is important, how the information will be used and guaranteeing confidentiality (to ensure that answers are as accurate and honest as possible).

When conducting a pilot survey I asked participants for feedback in order to identify any ambiguous or problematic questions, and to check that each question provided a suitable range of responses which would give the required information. I asked respondents if they understood all the words and checked that everyone was interpreting the questions and scales in the same way. For the most part, respondents found the questionnaire easy to understand. I made some instructions bold for clarity, e.g. in some questions only **one** option is to be selected, not multiple options.

Respondents were, however, unsure of the size of a bottled drink – and would respond 1 bottle, whether they were drinking a 300 mL bottle or a 2.25 L bottle. So I decided to ask about consumption in terms of the number of litres of soft drink the respondent had consumed.

Students indicated in the pilot survey that they thought *Pepsi* only meant *Pepsi Cola*, however for this question I was interested in all soft drinks of this brand so I expanded the category description to show alternatives within the brand. I decided to leave *Schweppes* as a separate brand even though this company is owned by *Coca-Cola*, due to its brand recognition. (These questions may suggest further investigations into the effects of advertising of these brands, and how the advertising influences teenagers.)

In my pilot study, I also asked respondents to record the time it took to complete the questionnaire to decide if the questionnaire was an appropriate length. As a result of this, I found the questionnaire was taking too long for students to complete and so I removed some of the personal questions, in particular those that focused on weight. (On reflection I decided that knowing a respondent's weight was unlikely to aid in determining if a respondent was in the category of obese without more in-depth questioning about height/gender, etc. Also many people don't know, or don't want to accurately report their weight.)

It may be valuable to extend this survey by selecting respondents who indicated they were regularly drinking large quantities of soft drink, and investigating their health. However, as the purpose of my survey was to determine whether the PHO should run an education programme, it was more important that my questions focused on student motivation for drinking soft drinks.

The questionnaire

This questionnaire is designed to determine the level of soft-drink consumption by students at Princeton High School.

You have been selected to participate in this study by completing this questionnaire which asks about your consumption of soft drinks, preferences and attitude towards drinking soft drink.

The questionnaire is anonymous and should take approximately 10 minutes to complete.

Your response is important to us. The results of this questionnaire will help our Primary Health Organisation determine if the use of soft drinks is an issue for local schools.

Please return the completed questionnaire in the postage-paid return envelope. Thank you.

PLEASE ANSWER THE FOLLOWING QUESTIONS BY CIRCLING THE RELEVANT ANSWER OR WRITING DOWN YOUR ANSWER IN THE SPACE PROVIDED.

1. What is your gender? Circle one.
Male Female
2. What is your age (in complete years) _____
3. What is your Year level at school? Circle one.
Year 9 Year 10 Year 11 Year 12 Year 13
4. Have you drunk at least one soft drink in the past week? Circle one.
Yes No

If you answered No to question 4, please answer question 5 only.

If you answered Yes to question 4, please skip question 5 and continue from question 6.

5. Please rank the reasons below in order of importance (where 1 is the most important reason and 7 is the least important reason) for not having consumed a drink of soft drink in the last week.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | I do not like the taste of soft drinks |
| <input type="checkbox"/> | I do not like the way soft drinks make me feel |
| <input type="checkbox"/> | Soft drinks are expensive |
| <input type="checkbox"/> | I do not drink soft drinks for health reasons |
| <input type="checkbox"/> | I cannot sleep when drinking soft drinks |
| <input type="checkbox"/> | I prefer drinking other drinks |
| <input type="checkbox"/> | I am not allowed to drink soft drinks |

Thank you for completing this questionnaire.

The following questions are to be completed only by those who have consumed soft drinks in the last week

6. On a typical week day, how much soft drink do you consume?

Circle the number of cans or part bottle(s).

Cans (approximately 350 mL)	1 or less	2	3	4	5 or more
1.5 L bottle	$\frac{1}{4}$ or less	$\frac{1}{2}$	$\frac{3}{4}$	1	more than 1
2.25 L bottle	$\frac{1}{4}$ or less	$\frac{1}{2}$	$\frac{3}{4}$	1	more than 1

7. How often do you drink soft drinks on each of the following occasions?
 Circle the correct number for each option using the following scale where:
- 1 = Never
 - 2 = Rarely
 - 3 = Often
 - 4 = Always

First thing after waking up in the morning	1	2	3	4
With breakfast	1	2	3	4
On the way to school	1	2	3	4
During interval	1	2	3	4
Between classes	1	2	3	4
With lunch	1	2	3	4
After school	1	2	3	4
With dinner	1	2	3	4
After dinner	1	2	3	4
When studying/doing homework	1	2	3	4
After playing sport	1	2	3	4
When visiting friends or family	1	2	3	4
When feeling stressed	1	2	3	4

8. Circle which **one** of the following brands of soft drink you drink most:

- Coca-Cola (includes Sprite)
- Pepsi (includes 7-up and Mountain Dew)
- Schweppes
- Budget
- Pam's
- Signature Range
- Other (specify) _____

9. What is the **most important** reason for choosing the brand of soft drink you drink most? (tick one)

- It is the type I prefer
- It is the type my family buys
- It tastes best
- It is the cheapest
- It is the most readily available
- It is the one my friends drink
- Other (specify) _____

10. How important is each of the following aspects to you when purchasing soft drink? Please indicate your answer using the following scale where:

- 1 = Totally unimportant
- 2 = Unimportant
- 3 = Important
- 4 = Very important

Low price	1	2	3	4
Taste	1	2	3	4
Brand	1	2	3	4
The amount of sugar in the soft drink	1	2	3	4
Buying a New Zealand-made brand	1	2	3	4

11. Do you consider yourself to be addicted to soft drink? Circle one.

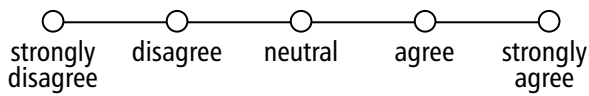
Yes No

12. Do you consider yourself to be overweight? Circle one.

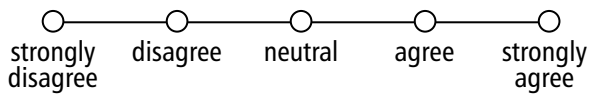
Yes No

13. For each of the following statements, indicate your agreement or disagreement by putting a cross on the scales below.

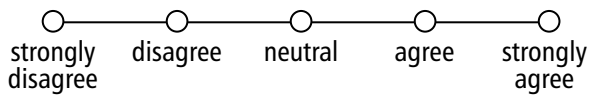
Drinking soft drink helps me concentrate in class.



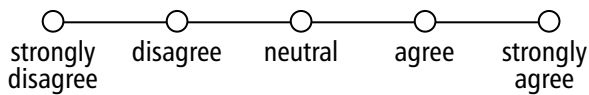
Drinking soft drink keeps me alert.



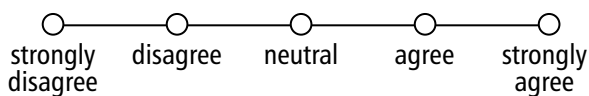
I cannot fall asleep at night when I drink soft drink during the day.



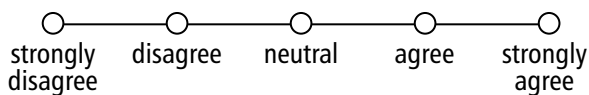
I drink soft drink because my friends do.



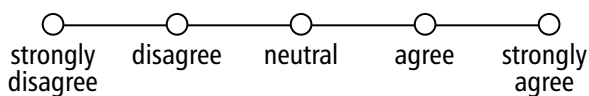
I know soft drink is bad for me but I drink it anyway.



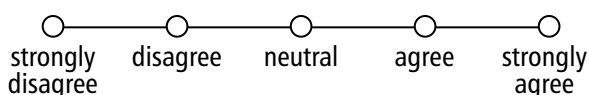
I drink soft drink because everyone else does.



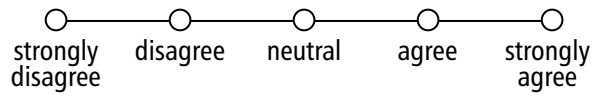
Drinking soft drink relaxes me.



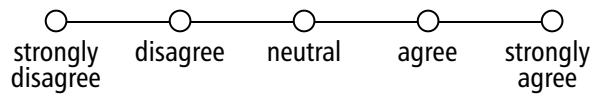
Drinking soft drink is safe and does not cause health problems.



I get headaches when I don't have soft drink.



I get stomach cramps after drinking soft drink.



Thank you for your co-operation in completing this questionnaire.