



National Certificate of Educational Achievement
TAUMATA MĀTAURANGA Ā-MOTU KUA TAEA

Exemplar for Internal Achievement Standard

Mathematics and Statistics Level 2

This exemplar supports assessment against:

Achievement Standard 91263

Design a questionnaire

An annotated exemplar is an extract of student evidence, with a commentary, to explain key aspects of the standard. It assists teachers to make assessment judgements at the grade boundaries.

New Zealand Qualifications Authority

To support internal assessment

	Grade Boundary: Low Excellence
1.	<p>For Excellence, the student needs to design a questionnaire with statistical insight.</p> <p>This involves integrating statistical and contextual knowledge relevant to the purpose of the survey throughout the design process.</p> <p>This student's evidence comes from the TKI assessment resource 'Caffeinated Teenagers'.</p> <p>The student has clarified the specific information needs of the survey and the groups who will use the data (1), posed survey questions while considering sources of variation (2), and checked the survey questions by carrying out a desk review (3) and conducting a pilot survey, including collecting and recording data (4).</p> <p>The student has refined the questionnaire based on the results of the pilot survey (5) and documented the design process, including the draft and final questionnaire, which had an appropriate range of questions (included in an appendix) (6).</p> <p>The student has completed each component of the design process. There is evidence of the integration of statistical and contextual knowledge throughout the design process (7). The student has also reflected on the process (8).</p> <p>For a more secure Excellence, the student could discuss in more depth the structure of the questions, and reflect further about the information gained from the desk review.</p>

Drinking caffeine can have a variety of short and long term effects on teenagers. This is a cause of concern for the Ministry of Health and they are therefore looking to find out more information on this topic. So the purpose of my questionnaire was to assist the Ministry of Health in finding out more about the effects that caffeinated drinks have on teenagers. My questionnaire provides information on the average number and type of caffeinated drinks teenagers currently consume and the effects that they feel the caffeine causes.

1

Firstly before designing my questionnaire, I made sure to fully research my topic so that I had an understanding of what drinks actually contained caffeine as well as what the effects of caffeine are, so I was therefore able to ask the right questions in order to obtain the data I needed. Using the internet, I looked at various websites to research the effects of caffeine as this is what I needed to ask questions about in my survey. Overall, the websites stated similar effects, with the most common being effects such as headaches, anxiety, sleeping disorders and increased mental alertness.

7

To obtain some general background information, I asked people to tick their gender and age, however, I did not ask respondents to state any other personal details so that the survey remained confidential, encouraging respondents to answer truthfully. To begin my questionnaire, I firstly asked how many caffeinated drinks people had consumed in the past week. For this question, I had four answer options: 0-3, 4-6, 7-9, and 9 or over. This meant that every possible answer is covered, from people who did not consume any caffeinated drinks, to people who consumed over 9.

2

Because the specific purpose of my survey is to find out about the effects of caffeine, my questionnaire will provide information about how much caffeine students are drinking, how dehydrated students are getting, and do they suffer from lack of attention in their classes. To help identify where the problem may be, I will also be able to provide data on year levels and gender. The Ministry of Health could then use this information to assess whether there is a problem of how caffeine effect's teenagers.

I developed a questionnaire (four sections to the questions: demographic information, questions around how much caffeine they drink and why, questions around how much they sleep, questions around how awake or attentive they feel during the day). I considered how the responses from different survey questions could be used to provide information about the purpose, comparing the average amount of sleep per night for those teenagers who drink caffeine regularly to those who don't.

2

The type of questions I asked were: 'does caffeine affect your ability to sleep?' 'After consuming a caffeinated drink, do you feel that you have increases energy?' 'Do you feel that caffeine increases your mental alertness?' (See original draft for a complete list of questions). To answer these questions, I decided that it would be suitable to provide a number scale from 1-5 where people could tick how strong the effect of the caffeine was. 1 being not being affected at all and 5 being extremely affected. By doing this, I was able to find out whether people felt any of these effects and how strong these effects were.

After this I was able to perform a desk check to see how the questionnaire read, and how the questions flowed from one another. As I was doing this I made notes in note book so as I could then go back and identify areas which I wished to change. For example initially the survey had questions asking how often the respondent drunk caffeine, with options never, sometimes, often, all the time, but I decided that having a numerical value for how many cups/cans of caffeine a respondent drinks per day would give more information, and would allow more in-depth statistical analysis. While I was doing this I was also able to start to think about what other questions I could ask for example what reasons do people not drink caffeine. This would allow me to cover a much wider audience in my survey as it would apply to those who do and don't drink caffeine. However, my current questionnaire is only targeted at caffeine consumers.

3

7

Before writing up my final questionnaire, I asked some of my class mates to do a pilot survey for me to ensure that the information I was seeking was present and that the flow of the questionnaire was right. For example for question 8 'would you change the energy drink you currently drink for a not caffeinated drink?' I found that by adding 'maybe, please specify what drink you may consider, I would extend the question to find out more specific information on exactly what people's choice of energy drink was and what they may change it to. I also took time to reflect upon questions 4-7 which I had a scale for people to rate how strong they felt the effect of the caffeine was. Labelled number 1 (not affected at all) and number 5 (extremely affected). However, I did not label; any of the numbers in between. I thought about re-writing these questions, by adding the words to show what each number meant and would this make it easier for the respondent. For example: 1 – not affected at all, 2 – slightly affected, 3 – moderately affected, 4 – very affected, 5 – extremely affected. However, after a lot thought I decided to leave it unchanged.

4

5

7

The results of the pilot survey were recorded in my log book and these showed that I got a 100% return. When I started to do the analysis of this data I was able to conclude that 90% of students who were surveyed did drink energy drinks at school. I was also able to determine that this resulted in 60% of them becoming sleepy in class and dehydrated.

The pilot survey was completed by my friends with similar ideas about the design process. This on reflection may not have been the best approach because they might not have wanted to offend me, by being too critical and so some issues might not have been identified. I think if I was to do this questionnaire again it would be more useful to take a random selection of students at the pilot survey, as this would allow for a better cross section of people to feedback information and so correct some of the errors I may have made this time.

8

In my final questionnaire, I had a total of 12 questions which covered how many caffeinated drinks people consume, what type and how often they consumed, what effects they felt, and whether they are aware of the possible long term effects.

The answers to this questionnaire throughout all of my school and maybe other schools will help the Ministry of Health in finding out more about the effects that caffeinated drinks have on teenagers. For example it may be the quantity of caffeine consumed per day i.e different drinks may have greater amounts of caffeine.

I filled out a log book after every class lesson to document the design process that I went through to complete my final questionnaire.

6

	Grade Boundary: High Merit
2.	<p>For Merit, the student needs to design a questionnaire, with justification.</p> <p>This involves linking components of the questionnaire design process to the context and explaining relevant decisions made in the design process.</p> <p>This student's evidence comes from the TKI assessment resource 'Caffeinated Teenagers'.</p> <p>The student has clarified the specific information needs of the survey and the groups who will use the data (1), posed survey questions while considering sources of variation (2) and checked the survey questions by carrying out a desk review (3) and conducting a pilot survey, including collecting and recording data (4).</p> <p>The student has refined the questionnaire based on the results of the pilot survey (5) and documented the design process, including the draft and final questionnaire (6).</p> <p>The student has completed each component of the questionnaire design process. There is evidence of justification in the linking of components of the questionnaire design process, and in the explanations relating to the decisions made in the design process throughout the response (7).</p> <p>To reach Excellence, the student could provide more evidence of statistical insight. For example, the student could discuss the pilot survey with respect to the purpose of designing the questionnaire.</p>

I have been asked by the Ministry of Health to design a questionnaire that would enable them to find out more about the effects of drinking caffeine on teenagers. The questionnaire will provide information about how caffeine affects teenagers, which is data that can be used by the Ministry of Health. This questionnaire will hopefully also answer which year level caffeine affects the most, as well as how much caffeine they are drinking and how often they are drinking caffeine. ①

A good questionnaire finds out the truth and must be non-threatening. I am aiming to accommodate all possible answers so some of my questions will be multiple choice. My questionnaire will not assume a certain state of affair so I will not make an assumption that may be true, so I will include a 'don't know' response. ⑦

I will be asking in my questionnaire, questions about energy drinks and how often they are consumed by teenagers. I will then go on to ask if they have any of the effects related to caffeine which I have found in my research from the internet. From my research I have found that drinking high amounts of caffeine can increase heart rate, cause dehydration, insomnia, restlessness, high blood pressure, heart palpitations, anxiety, dizziness and headaches. I have asked the respondent to circle the following that have applied to them after they have consumed an energy drink. This would enable the Ministry of Health to find out the most common effects that drinking caffeine has on teenagers.

From the information and feedback I will receive I will coherently link the two together to see if they have any relation to each other.

Design concept:

Questionnaire One:

1. My purpose is to design a questionnaire for the Ministry of Health that would enable them to find out more about the effects of drinking caffeine on teenagers. Teenage years start when you are thirteen and go to when you are nineteen; this is why I am asking at the start of my questionnaire if the respondent is aged between thirteen and nineteen because my questionnaire is targeted at teenagers. I have included a 'rather not say' option because some people may find this question personal and would rather not give their age out this is why I also have not left it as an open question where they can just write what age they are. ⑦

2. I have asked what gender the respondent answering my questionnaire is so the Ministry of Health can compare different genders related back to the effect that caffeine but more specifically energy drinks has on them and see the different results. ②

3. I have asked how often the respondent drinks energy drinks so the Ministry of Health can relate how often they consume them to how many effects that applies to them after they consume an energy drink.

4. In my questionnaire I have asked what the respondent's favorite type of energy drink is. I have given multiple choices of energy drinks which I found from my research that are the most popular and have tried to accommodate all possible answers with providing good choices so that 'other' is not the favorite choice. I have provided space underneath if the respondent does choose the 'other' option to state what the other type of energy drink is.

5. The purpose of my questionnaire is to find out more about the effects of drinking caffeine on teenagers. I have asked in my questionnaire if the respondent is aware of the effects of drinking high amounts of caffeine has on the central nervous system. I have asked them to circle either yes, no or unsure. I have given the option of choosing 'unsure' because I do not want to assume a certain state of affair and be making an assumption that may not be true.

6. I asked the respondent when they usually drink an energy drink. I have left this as an open question and have asked them to state when they consume an energy drink because I thought that different people may rely on energy drinks at different times of the day or because my questionnaire is targeted at teenagers if there is a certain period when they rely on energy drinks the most. For example exam week.

7. I have asked the respondent how they feel after they consume an energy drink. I have also left this as an open question and asked them to state how they feel after consuming the energy drink. I left this as an open

question because I thought that people may feel different to others and I didn't want to restrict the answers I got and imply a desired answer. 3

After my desk check I made the following adjustments. I found that my questionnaire didn't follow a logical sequence so I replaced question four with the current question seven. For question seven I now have asked a new question about the effects that caffeine can cause and asked the respondent to circle one of three options. So I now have come up with questionnaire two for which I will put this through a pilot survey. 4

Questionnaire Two:

Questions 1,2 had no change

3. I have asked the respondent when they consume an energy drink in question three not question seven because items on a questionnaire should be grouped into logical coherent sections and I thought that this question followed easily from the previous question. I have also made this question multiple choices because multiple choice questions are the most popular. I have tried to accommodate all possible answers and have included a 'don't know' response so I am not assuming a certain state of affair. 7

Questions, 4 and 5 had no change

6. The Ministry of Health have asked me to design a questionnaire that would enable them to find out more about the effects of drinking caffeine has on teenagers. From my research I have found effects that caffeine can cause, I have listed these effects and have given a scale where I have asked the respondent to circle how often the effects that caffeine can cause have applied to them. I have given them three options never, sometimes or often, this will enable the Ministry of Health to see how often these effects of drinking caffeine occur on teenagers.

7. I have asked the respondent if they feel energized after they consume an energy drink instead of asking them how they feel after they consume an energy drink and leaving it as an open question asking them to state how they feel I found from the feedback I received that this was not a good question so I changed it asking if they feel energized after consuming the drink. I have given them a yes or no option to see if energy drinks actually do have the effect of energizing teenagers.

I originally decided to use a multi-choice question to measure how often using time and gave the following options for the answer [every day, most days, some days, not very often]. I thought the options were good when I checked it, but for the pilot study I found people circled more than one option, and some didn't answer the question, so I added "circle the most often you drink caffeine", and "never" as an option. I decided to follow this survey question with another that asked "How many caffeine drinks have you had today?" and this was so I could find out not just how often they drink caffeine but how much. 7

Once I had finished questionnaire 2 I then used it for my pilot survey. This involved me asking 10 friends to complete my survey and feed back to me any changes they thought were necessary.

The results of the pilot survey results and feedback were recorded in my log book and these showed that I got a 90% return. When I started to do the analysis of this data I was able to conclude that only 40% of students who did the pilot survey actually drunk energy drinks at school.

One problem with my pilot questionnaire was that some people did not know what they meant by caffeine in their survey, so I added a question at the beginning of the questionnaire "Please tick which of these common caffeine drinks you drink at least once a day" and provided appropriate forms of caffeine in the list (coffee, coke, Pepsi, V, etc.). 5

I have briefly looked at the respondent's favorite type of energy drink and have collated the data I have received with how often the effects that caffeine can have after consuming a caffeinated drink occurs. The Ministry of Health could look into this further and look into the recipes of the energy drinks to see if there are any ingredients that could be related to the effects that the energy drink is causing.

I filled out a log book after every class lesson to document the design process that I went through to complete my final questionnaire. 6

	Grade Boundary: Low Merit
3.	<p>For Merit, the student needs to design a questionnaire, with justification.</p> <p>This involves linking components of the questionnaire design process to the context and explaining relevant decisions made in the design process.</p> <p>This student's evidence comes from the TKI assessment resource 'Caffeinated Teenagers'.</p> <p>The student has clarified the specific information needs of the survey and the groups who will use the data (1), posed survey questions while considering sources of variation (2) and checked the survey questions by carrying out a desk review (3) and conducting a pilot survey, including collecting and recording data (4),</p> <p>The student has refined the questionnaire based on the results of the pilot survey (5) and documented the design process, including the draft and final questionnaire (6).</p> <p>The student has completed each component of the questionnaire design process. There is evidence of justification in the linking of components of the questionnaire design process and in the explanations relating to decisions about the survey.</p> <p>For a more secure Merit, the student could provide greater depth in the explanation of decisions made in designing the final questionnaire.</p>

For my questionnaire I will be specifically looking for information about teenagers drinking energy drinks. I will be writing a questionnaire that will be for my principal about drinking habits of students at my school. Since I go to an all girl's school I will not have to ask a gender question as all the students answering the questionnaire will be girls. When writing up my questions I will find questions that relate to drinking habits, so I will find out if they take energy drinks to school. I filled out a log book after every lesson to document the design process that I went through to complete my final questionnaire. ①

I want to find out if they drink energy drinks and if they do what energy drinks. I will find out how many days a week they have energy drinks. I will ask how many energy drinks they had yesterday. I will find out if they drink energy drinks after a sports related task. I will find out if they experience headaches after drinking an energy drink. I will find out if they have trouble going to sleep after consuming an energy drink that day. I will find out how they feel after consuming an energy drink. I will find out if they rely on energy drinks. I will ask how long they could go without consuming an energy drink and I will ask if they would stop drinking energy drinks if they understood the negative effects.

Design Process:

I want to find out if they take energy drinks to school.

This question will read as "What drinks did you take to school last week?" I will give as many options of the typical drinks that students would take to school some of which are: Energy Drink, Soft Drink, Juice, Tea/Coffee, etc..

I want to find out if they drink energy drinks and if they do what energy drinks The question I will ask is "Do you drink energy drinks?" and I will give the options of Yes and No. Then I will ask another question which is "What is your favorite energy drink?" I will give as many options of the typical energy drinks students are known to drink some of which could be V, Lift Plus, Demon, Mother, Red Bull, Monster, etc. ②

I want to find out how many days a week they have energy drinks

This question will read "How many days last week did you have an energy drink?" The options for answers will be 0, 1, 2, 3, 4, 5, 6, 7.

I will ask how many energy drinks they had yesterday.

This question will read "How many energy drinks did you have yesterday?"

I want to find out if they drink energy drinks before a sports related task.

I am asking this question because when doing research for the habits of drinking energy drinks, I read an article of a boy who died because he consumed a huge amount of an energy drink before doing a sports related task. Based on this information the question will read "Do you drink energy drinks before a sports related task?" The options will be Yes, No.

I want to find out if they drink energy drinks after a physical activity.

I am asking this question because I am interested to find out whether it is a habit of students to drink energy drinks after a sports related task. This question will read "Do you drink energy drinks after sports related task?" The options will be Yes, No, sometimes.

I want to find out if they experience headaches after drinking an energy drink.

I am asking this question because from my research I have found that it is a common side effect from consuming some energy drinks. This question will read "Have you ever experienced a headache after drinking an energy drink?" The options will be Yes, No and sometimes.

I want to find out if they have trouble going to sleep after consuming an energy drink that day.

I am asking this question because from my reading I also found out that this could be a side effect from consuming an energy drink. This question will read "Do you have trouble going to sleep if you have consumed an energy drink that day?" The options will be Yes, No, sometimes.

I want to find out how they feel after consuming an energy drink.

I am asking this question because I want to know how students feel after they drink an energy drink.

The question will read "How do you feel after consuming an energy drink?" The options will be Happy, Excited, Relaxed, Tired, Anxious, and No Effect.

I want to find out if they rely on energy drinks.

I am asking this question because when researching I found out that some people rely on energy drinks. This question will read "Do you rely on energy drinks?" The options will be All the time, Often, Sometimes, Rarely, Never, Unsure.

I want to know how long they could go without consuming an energy drink.

I am asking this question because when researching I found that people could not go a day without consuming an energy drink so I am interested to see if this claim is true. The question will read "How long could you go without consuming energy drinks?" The options will be days, weeks, months, years.

I will ask if they would stop drinking energy drinks if they understood the negative effects.

I am asking this question because the research stated that there were many negative effects from drinking energy drinks but still people continue to drink them. The question will read "Would you stop drinking energy drinks if you understood the negative effects it had on you?" The options will be Yes, No, Maybe, Unsure.

From my desk check I was able to make the following changes:

For question one I selected ages that were common at school i.e 13,14,15 etc

For question three I decided a yes or no answer would be sufficient for energy drinks rather than list every possible energy drink, as this was already covered in question 4. For question seven I will put in an answer for unsure

3

Pilot Survey

From handing out my draft and getting feedback information from it I have learnt what changes I will need to make.

4

On my questionnaire I had asked for the person's name. When reviewing the feedback I noticed that one person didn't answer it. This suggests to me that I shouldn't ask for the participants name and this will hopefully increase the completion rate to 100%.

With Question Two: What drinks did you take to school last week? (Tick what applies to you) someone asked what if you didn't take a drink to school, so I will add as another option 'didn't take a drink to school'.

With Question Four: What is your favorite energy drink? Someone asked if they were able to tick more than one. I will change the question to What energy drinks do you consume? And say they are able to tick more than one.

5

With Questions seven and eight: Do you drink energy drinks before a sports related task? And do you drink energy drinks after a sports related task? Someone wanted to add sometimes to both of those answers which would be another option to choose from. Also I think I will word the question differently and say a physical related task because another person asked me if dance counted and I said yes.

With Question Ten: Do you have trouble going to sleep if you have consumed an energy drink that day? Someone said sometimes at a certain time of the day. So I will add sometimes as a different option to go with the question.

The results of the pilot survey were recorded in my log book and these showed that with the alterations made above to the final questionnaire I got a 97% return. When I started to do the analysis of this data I was able to conclude that 79% of students who were surveyed did drink energy drinks at school at least three times a week. I was also able to determine that this resulted in 36% of them becoming sleepy in class and dehydrated.

6

	Grade Boundary: High Achieved
4.	<p>For Achieved, the student needs to design a questionnaire.</p> <p>This involves showing evidence of using each component of the questionnaire design process.</p> <p>This student's evidence comes from the TKI assessment resource 'Caffeinated Teenagers'.</p> <p>The student has clarified the specific information needs of the survey and the groups who will use the data (1), posed survey questions while considering sources of variation (2) and checked the survey questions by carrying out a desk review (3) and conducting a pilot survey, including collecting and recording data (4).</p> <p>The student has refined the questionnaire based on the results of the pilot survey (5) and documented the design process, including the draft and final questionnaire (6).</p> <p>The student has completed each component of the questionnaire design process.</p> <p>To reach Merit, the student could have improved and increased the justification in the response. The justification of some questions lacks clarity, and it is also not completely clear how the evidence of the collecting and recording of data in the pilot justified changes to questions.</p>

The principal of my school has asked me to design a questionnaire that would enable the school to find out more about the caffeine drinking habits of the students at my school. The questionnaire will provide information about how much caffeine is being drunk by students, which is data that can be used by the principal. My survey would also provide evidence for the principal to decide whether the school needs to change the drinking habits of the students, and also if the energy drinks are affecting the health, habits, and daily routines of the students. ①

Based on the overall purpose (to find out about the caffeine drinking habits of students at my school) possible related variables to measure are: Does the caffeinated drinks consumed effect the concentration of the students? Do they drink the same amount of caffeinated drinks outside of school as they do inside of school? Do they rely on the energy drinks? Are the energy drinks affecting their behavior in class? What are the reasons for consuming the energy drinks? And do they understand the consequences of consuming energy drinks? ①

Information about what year level they are (e.g. Year 9 - Year 13, see question 2) could be matched to what kind of information the principal was looking for (e.g. if the consumed energy drinks effects the students health, habits or daily routines, see questions 8-16) so the principal could obtain knowledge of the students drinking habits. By asking if the students consume the energy drinks outside of school as much as inside of school (see question 11), matched with the questions about whether the energy drinks affects their daily habits and health (see questions 8-11), the principal could determine whether they need to change rules about energy drinks consumption during school hours. ②

By also asking how many times a week (school week, Monday- Friday, see question 4) the principal would be able to find out if students are drinking the energy drinks in school. If not, the energy drink should not affect their behavior in class or at school. Information provided when students answer the questions about if the energy drinks affect their health would be very useful for the principal to find out information about students health and their energy drinking habits. With the help of my questionnaire (see questions 8-16) the principal would be able to know if the energy drinks are affecting the health of the students, and if they need to change the energy drinking habits at the school.

Question 10 is very important. This question is important to the survey because the principal needs to know the side effects of the students consuming the energy drinks. If the students are experiencing side effects, the principal could determine whether the drinking habits at the school need to be changed.

Once I had compiled my questionnaire I then did a desk check and made the following changes: ③

I wanted a survey question about how often students drink caffeine, so I wrote a question "How often do you drink caffeine?" and gave the following options for the answer [every day, most days, some days, not very often]. I thought the options were good when I checked the questionnaire, but thought I should add "never" as an option.

For question 6 I included other as I only cover the main brands and did not include for example drinks like pepsi, For question 7 I included price and packaging as these two things can have a major influence over whether you buy a particular drink and then asked for question 10 if you drank these brands outside of school as much as inside of school. The reason I asked this question was to determine if the availability of these drinks was easier to obtain in school or at the dairy or supermarket.

I then went on to do a pilot survey which I gave 10 year 9 students. From their feedback I made the following adjustments: ④

For question 8, I added some more choice of answer from just yes and no I expanded it to yes, often, sometimes, rarely, no. this gives the person doing the survey a larger range of answers and is more likely to get a more appropriate response likewise I did the same for question 9. I added 10 about the effects of caffeine once an energy drink has been consumed, and then for question 11 which was question 10 added the new possible answers as I did in questions 8 and 9, likewise for question 12. Questions 13,14 and 15 are all new questions. The reason I put these in was because I wanted to ⑤

better understand if people understood the consequences of consuming the energy drinks and what they would do if they were removed from the school. Question 16 is the same as question 12 on the draft.

The results of the pilot survey were recorded in my log book and these showed that I only got a 60% return. However from that 60% I found that 100% of these students did drink energy drinks at school at four times a week. I was also able to determine that 80% of them felt sleepy by 2pm in the afternoon and 35% did have problems in sleeping after consuming the energy drinks.

One problem with my questionnaire was that some people did not know what they meant by caffeine in their survey, so I changed the questionnaire so that at the beginning I gave examples of common forms of caffeine (coffee, coke, Pepsi, energy drinks like V).

With the help of my questionnaire, the principal would obtain knowledge about the students drinking habits at school. The principal could determine whether the drinking habits need to be changed to better the student's health. This is very important because the energy drinks could be affecting the student's health, learning abilities and other physical and mental capabilities. If the students health is being affected the principal could change the students drinking habits which would benefit the students and the school environment.

I filled out a log book after every class lesson to document the design process that I went through to complete my final questionnaire.

6

	Grade Boundary: Low Achieved
5.	<p>For Achieved, the student needs to design a questionnaire.</p> <p>This involves showing evidence of using each component of the questionnaire design process.</p> <p>This student's evidence comes from the TKI assessment resource 'Caffeinated Teenagers'.</p> <p>The student has clarified the specific information needs of the survey and the groups who will use the data (1), posed survey questions while considering sources of variation (2) and checked the survey questions by carrying out a desk review (3) and conducting a pilot survey, including collecting and recording data (4).</p> <p>The student has also refined the questionnaire based on the results of the pilot survey (5) and documented the design process, including the draft and final questionnaire (6).</p> <p>The student has completed each component of the design process.</p> <p>For a more secure Achieved, the student's evidence would need to be clearer regarding the refining of the questionnaire following the pilot survey.</p>

The purpose of my questionnaire is to find out more about the effects of drinking caffeine on teenagers. The questionnaire will provide information such as the physical effects of drinking caffeine as well as a general idea of how it affects their daily life activities such as school. This data will be used by the Ministry of Health to determine whether or not there is a problem with-in teenagers in New Zealand and the consumerism of caffeine and if so they will be able to collect an overall idea of whom and why there is such a large amount of caffeine consumption with-in New Zealand. ①

I went and did some research where I gained knowledge on what drinks contain caffeine and what caffeinated drinks are the most popular with-in the average person in New Zealand. This research helped me determine a starting point in my questionnaire.

Throughout my questionnaire I made sure that the layout and design was set out in a way that would be visually appealing to all teenagers. I also think it is vital that the questions are not too detailed or complicated so that the teenagers completing the survey do not get bored or feel as though it is too time consuming therefore stop answering the questions or possibly answering untruthfully. My questions mainly consisted of a simple yes, no or unsure answer but I made sure that when someone did answer yes or no that they give a short but descriptive explanation as to why they said yes or no. ②

The introduction to my survey has been set in a way which hopefully makes the respondent of my survey feel as though it is unthreatening and friendly. I have done this by using words such as 'I am kindly asking you.' This also helps to make the survey seem as though it is more informal and chatty instead of formal and serious, which creates a responsive atmosphere. I have also stated in my introduction the fact that this survey is anonymous. This suggests to the respondent privacy and confidentiality. Therefore, allowing the respondent to be 100% honest when answering all the questions.

I began my questionnaire by asking my respondent what sex they were. This provided me with an overall generalization of who exactly was completing the survey. It also helped to decipher at the end of the survey the factual details between both female and male participants.

My next question had the respondent circle the age group that they fell in, which was between 13 and 20 as that is the official ages of a teenager and my questionnaire is based around teenagers only.

My third question was very simple but very essential in the overall effectiveness of the questionnaire. It required a yes or no answer as it asked whether or not my respondent drank caffeinated drinks or not. I also included a possible unsure answer encase my respondent was unsure of exactly what drinks included caffeine or possibly was unsure exactly what caffeine was in the **first** place. I also stated that if the respondent circled no as their answer they could please stop the survey there, as there is no need to complete the survey at this point.

My next question asked the respondent at what age did they first approximately start drinking caffeinated drinks. This allows for me to determine an average in which teenagers more or less start drinking caffeinated drinks in general.

My fifth question enabled me find out what drinks were creating the effects on teenagers in common as it asked my respondent what caffeinated drinks they consumed generally. This question also helped me to find out what caffeinated drinks are the most popular among teenagers these days.

Question six asked how many caffeinated drinks (between 1-over 15) my respondent drank last week. This question was very important in the determination of the results of this questionnaire over all as it showed how many drinks teenagers were consuming individually.

Question seven allowed me to determine what time each respondent started drinking caffeinated drinks in the day. Depending on the time of day that my respondents start drinking caffeinated drinks, I can see when and what affects they get over a short and long period of time. It also helps to see if the respondent relies on caffeinated drinks, for example if their first drink is early in the morning, they may rely on it to get through the day.

This relates to my eighth question as this is when I ask directly whether or not my respondent thinks they rely on caffeinated drinks on a regular basis. I left a space for them to write an response to answer this question.

In question nine I asked whether or not caffeinated drinks affected my respondents sleeping pattern. If they circled yes or sometimes I put under that question another joining question so they could note down how it affected their sleeping pattern. This question is important because as a teenager, sleep is what helps you to grow and to be healthy and without it, it can cause great damage to everyday activities such as school and sporting commitments.

Question ten relates directly to the effects of caffeinated drinks in a short term situation. Asking my respondent how they feel physically and mentally after consuming a caffeinated drink. They were able circle more than one word describing how they felt for example tired, anxious, irritated or if there were no effects they could circle no difference.

Question eleven is important because as teenagers they are attending school at a vital part of their lives. This question asks whether or not caffeinated drinks affect their ability to concentrate during school. If the respondent circled yes, they were then asked to continue answering some related questions such as how it affected their concentration, how do they recover from their lack of concentration in school.

The last question in my questionnaire, question number twelve asks the respondent whether or not they feel as though caffeinated drinks affect their general behavior. If they circled yes or sometimes they were then asked to carry on to answer another relating question of what effects they got towards their general behavior when consuming caffeine.

I then put this questionnaire through the desk check and made the following changes:

- For question 2 linking the ages together i.e 13- 15 rather than going 13, 14 15 3
- For question 5 linking cold caffeinated beverages together and hot caffeinated beverages
- Developing question 9 to ask for feedback upon sleeping habits if caffeinated drinks do affect your sleeping pattern
- Developing question 12, by asking for feedback if the caffeinated drinks effect your general behavior by what extent.

I then went on to do a pilot survey. The way I did this was to give my questionnaire to fellow pairs, so that I could collect some different perspectives and opinions on what I had produced so far. After receiving them back I would read over their notes and would make changes towards my questionnaire depending on what they had said I could improve on to make it better and easier to understand for each individual teenager. Some of the improvements included simply changing the wording in a question to make it easier to understand as well as including another possible answer in a question for people who possibly did not know or understand that question, for example question eleven, I added in the unsure answer after it was suggested to include it. 4

I filled out a log book after every class lesson on my progress in my questionnaire. I did this to provide evidence for my development over our given time period to complete this task and to show that it was a time consuming assignment and was not completed in one lesson. 5

6

	Grade Boundary: High Not Achieved
6.	<p>For Achieved, the student needs to design a questionnaire.</p> <p>This involves showing evidence of using each component of the questionnaire design process.</p> <p>This student's evidence comes from the TKI assessment resource 'Caffeinated Teenagers'.</p> <p>The student has clarified the specific information needs of the survey and the groups who will use the data (1), posed survey questions while considering sources of variation (2) and checked the survey questions by conducting a pilot survey(s), including collecting and recording data (3).</p> <p>The student has also refined the questionnaire based on the results of the pilot survey (4) and documented the design process, including the draft and final questionnaire (5).</p> <p>To reach Achieved, the student needs to check the survey questions by carrying out a desk review. The evidence relating to the refinement of the questionnaire could also be clearer.</p>

INTRODUCTION

The purpose of this questionnaire is to help our principle find out more about the caffeine drinking habits of the students of my school. Because the target audience is based on students at my school, my questionnaire will include information about age, sex, and the sort of people who are energy drinkers. It will contain information such as why these teenagers are drinking these energy drinks. Studies show that caffeinated drinks are a big cause to childhood obesity, bone growth, concentration in class and that it increases the chances of anxiety in later life which influences students learning habits in class. ①

DESIGN PROCESS

For my first question *'How old are you?'* I gave an option of choosing what age the person is ranging from 13-18 years old. This question will allow me to find out how old the people are that drink energy drinks. By using this type of question, I am allowing people to choose and tick there age rather than having to write the answer, which saves time and makes it easier for other people to answer. For my age options, I decided to make it between 13 and 18 years old since this questionnaire is targeted for teenage students who attend my school. ②

For my second question *'Do you drink energy drinks? If you ticked NO, do not continue with the questionnaire.'* I gave an option of either ticking 'Yes' or 'No'. I gave these two options because it would be faster for people to just tick their preferred answer and because there are the only two options available for everyone. I added in *'Of you ticked NO, do not continue with the questionnaire'* so that if people ticked 'No' they do not need to continue with the questionnaire and it will save them time than having to answer questions that do not apply to them and will not give me any useful information since the questionnaire is intended for people who drink energy drinks.

For my third question *'What sort of energy drink do you normally drink? (Tick all that applies to you)'* I gave nine appropriate options. In my options I included popular energy drinks that people were most likely to choose making it easier for them to answer the question. By using *'normally'* it is asking specifically what energy drink they always drink. Whereas by asking *'What sort of energy drink do you drink?'* is not being specific therefore someone can just choose an energy drink that they got yesterday. For one of my options I added in *'Other (Please state):'* so that people can state other energy drinks that are not included in the options. I also added *'(Tick all that applies to you)'* to let people know that they can tick more than one option that is applicable.

This question helps me find out what sort of energy drinks students like and which energy drink is the most popular amongst these people.

For my fourth question *'How often did you drink these energy drinks last week?'* I made sure that I used *'last week'* so that it is more specific and so that I can get the most accurate answer possible. I gave only four options that were short and easy to read, so that it is easier for whoever is answering the question, to answer rather than having answers that people have to think about or take too long to answer.

I didn't use a don't know option for this as people should be able to remember or count back to the number of activities they did last week as it wasn't that long ago, and this gives me the most accurate answer possible. I gave the options like *'Once a week'* and *'Most of the week'* because it would be faster and easier for people to answer the question rather than having to try and remember how often you drank energy drinks last week. It would also give me a fair idea of how often they drink energy drinks.

For my fifth question I asked *'When do you usually use energy drinks? (Tick all that applies to you)'* so that I could find out exactly when people need to drink energy drinks. Added in *'(Tick all that applies to you)'* because people might drink energy drinks for more than one occasion. I gave five options that were best appropriate and that would cover all possible options but I added in *'Other (Please state)'* so that people can add in other options in case it is not included in the four options. In the question I also stated *'usually'* because I wanted to be specific and only wanted to know when they regularly drink energy drinks.

For my sixth question I asked *'Why do you drink energy drinks? (Tick all that applies to you)'* because I want to know the reason behind and drinking these energy drinks.

I decided to add five options, four of which are main reasons of why people would drink energy drinks and the other option which is the *'Other (Please state)'* option. I added *'Other (Please state)'* as an option because there might be other reason to why that person might buy energy drinks.

For my seventh question *'How do you usually feel after consuming an energy drink? (Tick all that applies to you)'* I gave six options for people to tick so that it is easier for them to answer since they can choose from a variety of answers. I added in *'Other (Please state)'* as an option because the other options might not be suitable for them therefore they can state their own answer. I also added *'(Tick all that applies to you)'* in the question so that it can be clear to people that they can tick more than one option in case someone might feel *'tired'* and *'anxious'*. This question will give me information on how students regularly feel after drinking an energy drink.

On my eighth question I asked: *'Do you suffer from any symptoms from drinking energy drinks? (Please do not continue if you answered NO)'* which relates to the previous question. I gave two options which is *'Yes'* or *'No'*. I gave these two options because it would be faster for people to just tick their preferred answer and because there are the only two options available for everyone. I added *'(Please do not continue if answered NO)'* to the question because the next question is intended for people who do suffer from symptoms due to drinking energy drinks. This saves peoples time because it is telling them not to continue with the questionnaire. This question will help me see how many people suffer from drinking energy drinks.

For my final question *'What sort of symptoms? (Tick all that applies to you)'* I gave six options which are: *upset stomach, headache, dizziness, fatigue, nausea, and other*. I specifically chose these answers because I thought they were popular symptoms that people usually suffer from. I added in *'Other (Please state)'* because there are other symptoms people can suffer from that is not included in the other five options. I also added *'(Tick all that applies to you)'* to the question because people might suffer from more then one symptom therefore people can tick more than one option. I chose to add this question to my questionnaire because I wanted to know if people's health is being affected while drinking these energy drinks and also how theses energy drinks have an affect on people.

I then went on to do a pilot survey. To do this I decided to ask 15 of my fellow students. I recorded the feedback they gave me but ultimately decided to keep to the questionnaire the way it was. The reason for this was that I believe that the questionnaire covered the area of interest that was required and although some wording could have been changed I believe that this would have changed the meaning for the question. 3

From my results, I have found out that there are actually a few people that do suffer symptoms from drinking energy drinks. Gathering this information will enable our principal to find out the drinking habits of students who drink caffeinated drinks. This questionnaire will also include information of why students drink energy drinks. 4

I filled out a log book after every class lesson to document the design process that I went through to complete my final questionnaire. 5