

Psychology

HOLIDAY HOMEWORK

2020-2021



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Holiday Homework Required:	Key Science Skills booklet <ul style="list-style-type: none">• Pages 1-8 of KSS research methods booklet
Recommended Work:	*See over the page for details* <ul style="list-style-type: none">• Additional reading from the textbook• Completion of all tasks from KSS booklet
Resources Required for the Subject:	<ul style="list-style-type: none">• Jacaranda Psychology VCE Units 3 & 4 (7th Edition)• Edrolo digital access• KSS Research Methods Workbook
Key Links:	VCAA Psychology resources http://www.vcaa.vic.edu.au/Pages/vce/studies/psychology/exams.aspx Additional websites for revision: http://www.atarnotes.com/ http://wiki.engageeducation.org.au/practice-exams/psychology/
Additional Resources:	<ul style="list-style-type: none">• Psych Notes Units 3 and 4 (A+ publishing)• 1 x 128-page exercise book (for coursework/homework tasks)• 1 x ruler, pair of scissors & glue stick

Bare minimum

*This is work that **MUST** be completed by **ALL** Psychology students over the holidays. The first SAC will include elements of this content.*

TASK: Students are to complete **pages 1-8** of the KSS Research Methods Workbook.

Student can use the following sections from the textbook to support them with the above task

Experimental research: Pages 15 – 23

Use of appropriate experimental research design: Pages 44 – 47

Reporting conventions: Page 92 – 94

Getting Ahead

For those who want to push themselves. This is Year 12 after all

TASK: Students should do the above work “bare minimum” and then can **read the rest of Chapter 1.**

Specifically, read pages:

- Extraneous variables: Pg 24 – 29.
- Ways of minimizing extraneous variables: Pg 30 – 42.
- Other methods of data collection (Cross-sectional studies, Case studies, etc.): Pg 52-66
- Types of data: Pg: 67 – 69
- Conclusions and generalisations: Pg 78 – 79
- Ethical principles in research: Pg 82 – 91.

Advanced

For those who are dedicated to achieving their best and are prepared to extend themselves

TASK: Students should do the above work “bare minimum” and the reading from “Getting Ahead” **complete the rest** of the KSS Research Methods Workbook.



Swinburne Senior Secondary College

VCE Psychology – Unit 3

Welcome to VCE Unit Three Psychology!

This unit focuses on the structure and function of the nervous system, the role of stress in psychological functioning and the mechanisms of memory and learning and their influence on the acquisition of knowledge.

Research methods are integrated within the different approaches to psychology and you analyse research methodologies associated with classic and contemporary theories, studies and models, consider ethical issues associated with the conduct of research and the use of findings, and apply appropriate research methods when undertaking your own investigations.

Unit Three Psychology is separated into two Areas of Study (AOS) and two Outcomes.

AOS 1	How does the nervous system enable psychological functioning?
In this area of study, students explore the role of different branches of the nervous system in enabling a person to integrate, coordinate and respond to internal and external sensory stimuli. They explore the specialised structures and functioning of neurons that allow the nervous system to transmit neural information. Students evaluate how biological, psychological and social factors can influence a person's nervous system functioning. In particular, they consider the ways in which stress can affect the mind and body, the role that the nervous system plays in these processes and how stress can be managed.	
Outcome 1	
On completion of this outcome the student should be able to explain how the structure and function of the human nervous system enables a person to interact with the external world and analyse the different ways in which stress can affect nervous system functioning.	

AOS 2	How do people learn and remember?
Memory and learning are core components of human identity: they connect past experiences to the present and shape futures by enabling adaption to daily changes in the environment. In this area of study students study the neural basis of memory and learning and examine factors that influence the learning of new behaviours and the storage and retention of information in memory. They consider the influence of biological, psychological and social factors on the fallibility of memory.	
Outcome 2	
On completion of this outcome the student should be able to apply biological and psychological explanations for how new information can be learnt and stored in memory, and provide biological, psychological and social explanations of a person's inability to remember information.	

Contribution of Unit 3 to the final assessment for the subject

For each Outcome you will be assessed using a range of activities and work requirements, which will include both coursework (work done in class or as homework) and SACs (School Assessed Coursework).

SACs and the end of year exam will determine the student's level of achievement in Unit 3.

The SACs for Unit 3 will contribute 16 per cent to the study score.

The SACs for Outcome 1 will have 50 marks allocated; Outcome 2 will also have 50 marks allocated.

A final note

If you need any extra help, guidance or advice, please don't hesitate to come and any members of the Psych team.

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SEMESTER TIMELINE*

Week	AOS 1
Wk 1	Chapter Two <ul style="list-style-type: none"> • Branches of the nervous system
Wk 2	Chapter Two <ul style="list-style-type: none"> • Conscious and unconscious responses + role of neuron • Role of neuron + role of neurotransmitters
Wk 3	Chapter Two + Three <ul style="list-style-type: none"> • Role of Dopamine in Parkinson's disease + nervous system review • Eustress, Distress and sources of stress
Wk 4	Chapters Three <ul style="list-style-type: none"> • Selye's General Adaptation Syndrome • Fight-flight-freeze and role of cortisol
Wk 5	Chapter Three <ul style="list-style-type: none"> • Lazarus and Folkman's Transactional Model of Stress and Coping • Coping with stress
Wk 6	Chapters Two + Three <ul style="list-style-type: none"> • Revision
	AOS 2
Wk 7	Chapter Four <ul style="list-style-type: none"> • Neural Plasticity + Long Term Potentiation • Role of neurotransmitters and neurohormones in memory and learning
Wk 8	Chapter Five <ul style="list-style-type: none"> • Classical conditioning • Classical conditioning & Little Albert
Wk 9	Chapter Five <ul style="list-style-type: none"> • Operant conditioning • Operant conditioning
	TERM BREAK
Wk 10	Chapter Five <ul style="list-style-type: none"> • Observational learning • Overview of Mem and Sensory memory
Wk 11	Chapter Six <ul style="list-style-type: none"> • Function, capacity and duration of STM/LTM + explicit and implicit storage
Wk 12	Chapter Seven <ul style="list-style-type: none"> • Bio mem & Brain trauma • The 3 Rs of memory retrieval
Wk 13	Chapter Seven <ul style="list-style-type: none"> • Context and state dependent cues + maintenance and elaborative rehearsal theory • Rehearsal activity + SPE theory and activity
Wk 14	Chapter Seven <ul style="list-style-type: none"> • Loftus's research into memory • Revision
Wk 15	Chapter One <ul style="list-style-type: none"> • Key Science Skills (KSS)
Wk 16	<ul style="list-style-type: none"> • KSS • Revision of Unit 3 and/or KSS
Wk 17	Unit 3 Practice Exam <ul style="list-style-type: none"> • Unit 3 exam review and coursework submission

NOTE: This timeline is subject to change dependent on student requirements

KEY SCIENCE SKILLS

Research Methods in Psychology



Name:



Key Science Skills

Research Questions



Link the following pairs of variables to create research questions. For each formulated research question underline or highlight the two variables in different colours.

Example: stress and laughter

Research question: Does laughter reduce stress?

- parental praise and self-esteem
-

- hearing impairment and MP3 player use
-

- sense of wellbeing and friendships
-

- sibling birth order and personality
-

- mood and helpful behaviour
-

- type of TV advertisement (annoying or enjoyable) and product sales
-

- unemployment and mental illness
-

- free access to gym and workplace productivity
-

- intelligence and sensory stimulation in infancy
-

- bullying behaviour and unstable home life
-



Key Science Skills

IV & DV



Use 2 different coloured highlighters to highlight the IV (independent variable) and DV (dependent variable) in the following scenarios.

1. Primary school children who watch violent cartoons on television have more nightmares than those who watch humorous cartoons.
2. By the age of six, children who were in day care before the age of six months are socially better adjusted than those who stayed with a sole caregiver.
3. Children who sleep more than nine hours each night have better concentration in school than those who sleep less than nine hours.
4. It is predicted that taking a tablet that will enhance concentration will allow the students to perform better on their exams, as shown by their end of year results.
5. The experimenter studied the results of the student's math exams and found that the results correlated with the amount of hours each student spent studying.
6. James practiced his basketball three pointers for 3 hours before the game. During the game James scored 12 three pointers, more three pointers than anyone else on his team.
7. Jodie had three Panadols and after two hours felt a lot of pain relief.
8. Joe spent all night on Facebook, the next day he got a poor score on his maths test.
9. Tegan runs every morning for 2 hours, she got the top score in her P.E beep test.
10. Jason brushes his teeth twice every morning and once at night in the shower, his dentist said he has the cleanest teeth he has ever seen.
11. Adults who drink more than five alcoholic drinks each night suffer memory loss at an earlier age than non-drinkers.
12. The words at the beginning and end of a list will be recalled more accurately than those in the middle of the list.
13. VCE students who eat breakfast get better results than those who do not eat breakfast.



Key Science Skills

Hypothesis



Complete the following.

1. Dr Hunter wants to research the influence of caffeine on memory ability in middle-aged men. He gives his experimental group four cups of coffee a day and then measures the number of words they recall on a series of short-word recollection tests. The control group completes the same test but does not consume any caffeine.

Population:

IV:

DV:

Hypothesis:

2. A study was conducted to determine who the most dangerous drivers. Researchers recruited 20 P-plate drivers, 20 middle-aged drivers (aged between 35-50) and 20 elderly drivers (aged 65+). Each group completed the same driving simulation that tested reaction time to potential collisions.

Population:

IV:

DV:

Hypothesis:

3. A current psychology student wants to research the effect smoking has on a person's memory. His research groups consisted of fifty 1 pack a day smokers aged between 20- 25 and fifty non-smokers aged between 20-25. He gave each subject a memory test consisting of 10 questions.

Population:

IV:

DV:

Hypothesis:

4. A psychology professor wants to research the effect a person's time on FACEBOOK per day has on a person's psychology test scores. He took a sample of 100 Yr 11 psychology students. 50 students were allowed no time on FACEBOOK and the other 50 were allowed FACEBOOK for 3 hours a night for the week leading up to the test. The students' test scores (out of 50) were then recorded.

Population:

IV:

DV:

Hypothesis:



Key Science Skills

Types of Investigations



Identify the type of study in the following scenarios and list the strengths and limitations of that particular study.

Sigmund Freud developed his psychoanalytic theories mainly from detailed records of research of patients who sought his help with mental health problems they were experiencing.

Type of investigation:

Strengths

Limitations

Filling a room with smoke and watching to see how people will respond to a potential emergency.

Type of investigation:

Strengths

Limitations

Does PowerAde improve athlete stamina?

Group 1 – run for as long as they can on a treadmill

Group 2 – drink PowerAde and then run on a treadmill for as long as they can

Type of investigation:

Strengths

Limitations

Should refugees who arrive by boat should be imprisoned until background checks can be completed?

strongly agree agree neither agree or disagree disagree strongly disagree

Type of investigation:

Strengths

Limitations



Key Science Skills

Ways of Minimising Extraneous Variables



Identify the sampling procedures in the following scenarios and list the strengths and limitations of that sampling procedure.

Julie wants to know the average amount of time teenagers spend on an electronic device per day. In order to find this out, she asked some students at her school to complete a survey.

Sampling procedure:

Strengths	Limitations

Julie wants to know the average amount of time students at her school spend on an electronic device per day. She began with a list of all students enrolled at her school (570 students). Then each student was assigned a number from 1 – 570. Julie used a random generator online to select which 50 students would be involved in the study. These students were then given a survey to complete.

Sampling procedure:

Strengths	Limitations

Julie wants to know the average amount of time students at her school spend on an electronic device per day. She hypothesised that this would differ among students in different year levels and so she obtained a list of students in each year level. Julie randomly sampled participants from each list, proportionate to the percentage of students in each year level within the school. Participants were then administered a survey.

Sampling procedure:

Strengths	Limitations

Describe the following and outline how it could be controlled to minimise extraneous variables

	What is it?	How can it be controlled for?
Participant differences		
Experimenter effects		
Situational variables		
Order effects		
Placebo effect		



Key Science Skills

Experimental Research designs



Below are types of experimental research designs. Create your own examples of studies that would use each type of research design.

Independent groups	
Example:	
Strengths	Limitations

Matched participants	
Example:	
Strengths	Limitations

Repeated measures	
Example:	
Strengths	Limitations

Cross-sectional study	
Example:	
Strengths	Limitations



Key Science Skills

Activities



Activity 1

Highlight the population and sample in the following examples, using different colours

- a group of pre-school children selected for research into cognitive development; Australian children aged two to four years
- people aged seventy-five years and over; a group of randomly selected people aged seventy-five years and over responding to a questionnaire on ageing
- Victorian voters registered on the electoral roll; voters responding to a telephone survey on their preferred political leader
- twenty adolescents who are interviewed in a study investigating psychosocial development; adolescents in a particular youth training centre

Activity 2

1. In research the term 'population' refers to:

- a) every resident in a particular geographical location.
- b) the whole group that is of interest to the researcher, including every individual.
- c) every person and/or animal involved in the research project.
- d) the group of participants directly involved in a research study.

2. In research the term 'sample' refers to the:

- a) collection of evidence that has been gathered.
- b) smaller subgroup of the population that acts as researchers in a study.
- c) large group of people or animals that is of interest to the researcher.
- d) smaller subset of the population that are the research participants.

3. Random sampling refers to :

- a) ensuring that every member of the target population has an equal chance of being selected as a participant.
- b) recruiting research participants according to their availability.
- c) ensuring that every member of the sample has an equal chance of being selected in the population.
- d) selecting participants systematically according their age, gender or religious background.

4. A random sample is needed in order to:

- a) select subjects to take part in research so that there are equal numbers of males and females
- b) ensure that there is no experimenter bias
- c) ensure that experimental and control groups are similar in terms of participant variables
- d) ensure that different characteristics within the population are also found within the participants in the research.

This scenario is used for questions 5 and 6.

A researcher interested in whether mood is influenced by the weather conducted a survey on the corner of a busy intersection by asking random passers-by to indicate their mood, once on a warm, sunny day and another time on a cold, wintry day.

5. This is an example of _____.

- a) Random sampling
- b) Stratified sampling
- c) Convenience sampling
- d) Allocation sampling

6. The type of study this most closely resembles is

- a) Experiment
- b) Case study
- c) Observational study
- d) Longitudinal study

7. The purpose of the experimental group in research is to:

- a) ascertain the effects of the dependent variable
- b) eliminate the effects of the dependent variable
- c) ascertain the effects of the independent variable
- d) eliminate the effects of the independent variable.

8. What type of research design involves testing the same participants more than once?

- a) repeated measures
- b) cross-sectional
- c) independent groups
- d) matched participants

9. Professor Pendlebury is researching the effects of increased vitamin intake through drinking carrot juice on the functioning of the rods in the eye. He gives his experimental group 125 ml of carrot juice each day while he gives the control group carrot juice that has been boiled and cooled so that the vitamins are inert. The purpose of the control group in this experiment is to:

- a) show the effects of the independent variable
- b) control or eliminate the effects of participant variables
- c) form a basis for comparison with the experimental group
- d) show the effects of the dependent variable.

10. A researcher is investigating the effects on the sleep cycle of subjects using a lavender- scented pillow, which she believes will decrease nightmares. She has two groups of subjects. Subjects in one group have lavender-scented pillows and in the other they have pillows scented with other herbs. The researcher analyses subjects' dreams for negative content the next day. The subjects are not aware of which herbs are thought to reduce nightmares and the researcher is not aware of which subjects are using lavender and which are using other herbs. The researcher is using:

- a) a single-blind design to eliminate the placebo effect
- b) a single-blind design to eliminate subject expectations
- c) a double-blind design to eliminate experimenter bias
- d) a double-blind design to eliminate placebo and experimenter effects.

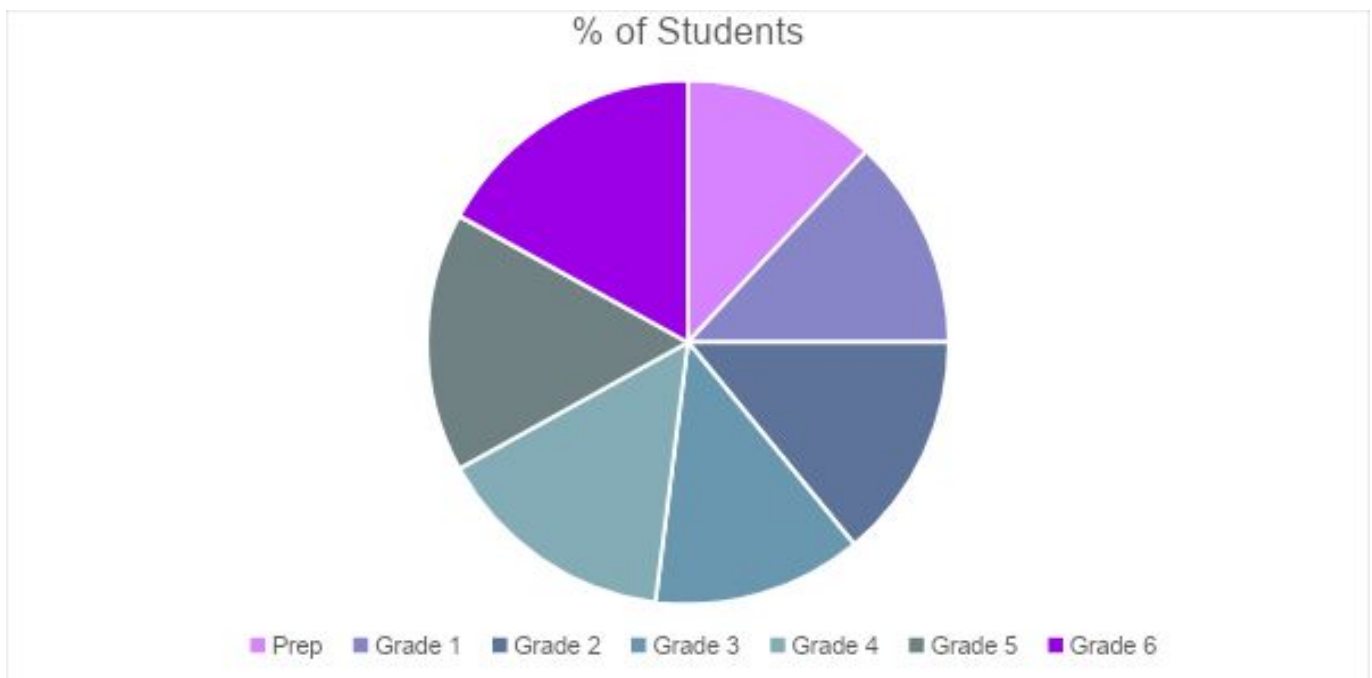
Activity 3

Dickens Street Primary School has 1000 pupils. The number of pupils in each grade is indicated below.

- Grade Prep: 120
- Grade One: 130
- Grade Two: 140
- Grade Three: 130
- Grade Four: 150
- Grade Five: 160
- Grade Six: 170

A sample of 100 pupils is to be selected for research purposes. A stratified sample is required.

Calculate how many pupils from each year level should be selected for the sample.



Describe the steps in the selection process to ensure that the sample is representative of the population of pupils at Dickens Street Primary School.



Key Science Skills

Revisions Questions



1. What is the difference between a sample and a population? Why are samples generally used in psychological studies?

2. What is the difference between sampling and allocation?

3. How is a random sample different to a stratified sample?

4. What is the difference between the control and experimental groups?

5. What is the placebo effect? Give an example of how the placebo effect can influence the results of an experiment.

6. What is a single-blind procedure? What is its purpose?

7. What is a double-blind procedure? What is its purpose?

8. What is the experimenter effect? Give an example of how the experimenter effect can influence the results of an experiment.

9. What is an extraneous variable? Give an example of how an extraneous variable can influence the results of a study.

10. What is a confounding variable? What effect does a confounding variable have on a study?

Exam-style scenario based questions

1. A Psychology class recently investigated whether test scores could be improved by playing music while studying. One class containing 30 students was split into two groups. 15 students played music when studying for their VCAA exam and the other 15 students did not.

a) Formulate a hypothesis for this study.

b) Identify the research design used in this study

c) Explain one strength and one limitation of this research design.

d) Would a repeated measures design be appropriate for this study? Why/why not?

2. A research study was conducted to examine if fish oil tablets would improve a person's general intelligence. One hundred Year 12 students were selected to participate in the trial and followed over 6 months. 50 participants were given the fish oil tablet and the other 50 a sugar pill three times a day. After the 12-month trial the participants were given an IQ test consisting of 50 questions.

a) Identify the operationalised IV and DV in this experiment.

b) Identify two extraneous variables that would need to be controlled for.

c) Identify the research design used in this study.

d) Explain why was the sugar pill used (including the extraneous variable this controls for).

Describe how this study could have used a double-blind design.

3. A recent study in the UK followed 100 day care students aged 3-5. They found that those students with a high fat diet had a lower IQ than those with a low fat diet.

a) What type of study is this?

b) Why would this type of study be more appropriate than an experiment?

4. A psychology student collected examination results from 40 Year 11 students from an all girls school. Before the examination the Year 11 participants filled in a questionnaire to determine the number of hours they slept the night before the exam. The researcher found that those who slept over 8 hours scored higher in their examination.

a) What are two potential limitations of this study?



Key Science Skills

Ethics



1. For each of the following ethical research principles, explain how each could be adhered to in any particular study

a) **Informed consent**

b) **Voluntary participation**

c) **Withdrawal rights**

d) **Debriefing**

e) **Confidentiality**

2. In what instance, may the use of deception be acceptable in a study? Explain why this would be acceptable.

MCQ

Professor Plum is conducting some research to investigate how the human brain changes its responses when a person has been without sleep for 14 hours, compared with its responses one hour after awakening from a full night's sleep.

To investigate this, he gives each of his first-year university psychology students a card and instructs them to attend the experimental session and hand in the numbered card, which will prevent them being penalised 5 per cent from their semester mark.

Which ethical principle is Professor Plum violating in terms of the rights of participants in research?

- a) voluntary participation in research
- b) informed consent from participants
- c) confidentiality of participant information
- d) no physiological or psychological harm to participants.

Later in the year, another researcher wishes to do further research and feels that the data collected by Professor Plum will be useful. The kind professor gives his colleague a list of the students and the data they collected. Which further ethical consideration(s) of participant rights has/have now been violated?

- a) voluntary participation in research
- b) informed consent from participants
- c) confidentiality of participant information
- d) both informed consent and confidentiality of participant information.

Doctor Jeckyll is trying to discover the way in which a person's visual perception is affected by their expectations. To do this without biasing the participants' answers, he informs participants that they are doing an experiment investigating their visual acuity. This would be ethical only under the following circumstances:

- a) Dr Jeckyll has permission from the ethics committee of his university
- b) Dr Jeckyll has permission from the ethics committee of his university and has put appropriate debriefing and counselling procedures in place
- c) Dr Jeckyll has put appropriate debriefing and counselling procedures in place
- d) deceit in psychological research is never ethical.



Key Science Skills

Data Collection and Interpretation



Activity 1

Decide whether the following are examples of quantitative or qualitative data.

- a) A set of brain scan images locating a brain tumour. _____
- b) A graph showing workers' stress levels over a week. _____
- c) A twelve-year-old girl's written description of how she feels about herself. _____
- d) The average number of hours per week spent on social networking sites by a group of adolescents.

e) A forensic psychologist's written report evaluating the mental status of an alleged offender.

- _____
- f) Scores calculated from a rating scale of attitudes. _____
 - g) A child's drawing of his family. _____
 - h) IQ (intelligence) scores of pairs of identical twins. _____
 - i) A table of results showing the incidence of cyber-bullying among teenagers. _____
 - j) A clinical psychologist's notes on the appearance and behaviour of a client. _____
 - k) A job applicant's score on an aptitude test. _____
 - l) A description of a person's fear of answering telephones. _____

Activity 2

The data below is from an observational study into the impact of diet on the IQ scores of young children.

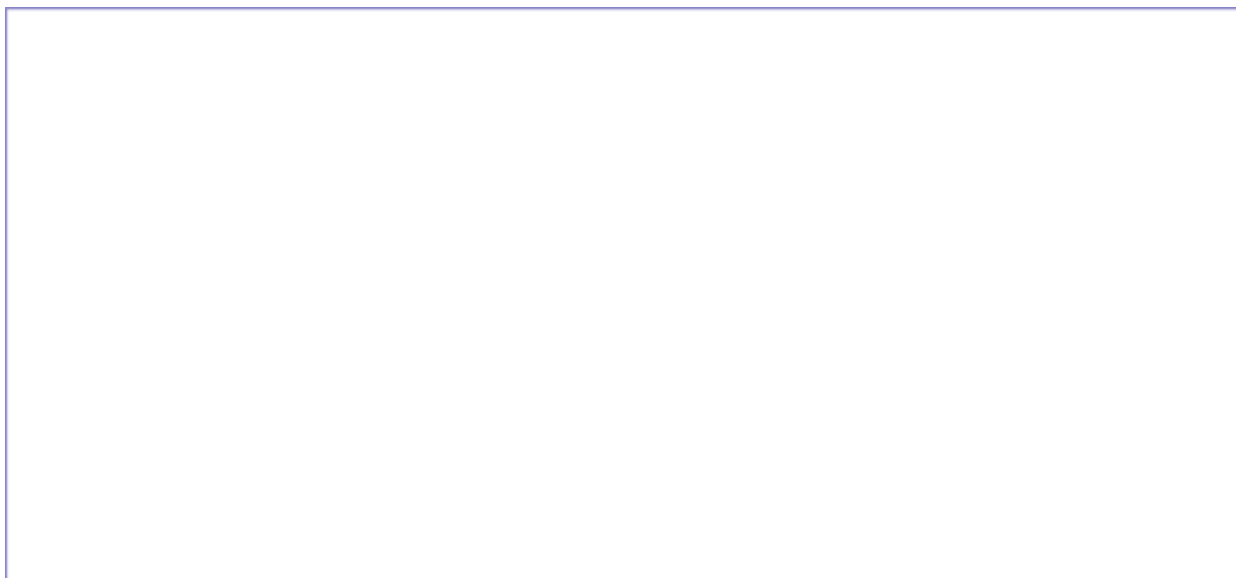
TYPE OF DIET	DAY-CARE STUDENTS AGED 3-5 IQ				
	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
High Fat	95	97	98	95	96
Low Fat	105	110	112	115	118

Is this data qualitative or quantitative?

Calculate means to summarise this raw data.

Do you think this data set would have a high or low standard deviation? Justify your answer.

Construct a graph to best represent this data.



What conclusions can be made?

What generalisations, if any, can be made? Justify your response

How could the reliability of this study be tested?

How could the validity of this study be tested?



Key Science Skills

Revisions Questions



Exam-style scenario based questions

Richard wished to compare the mood of Year 6 children after they had role-played being a victim of bullying (Condition 1) with their mood after they had role-played helping an injured person (Condition 2).

He decided to measure mood on a scale of 1 to 10, with 1 being 'depressed' and 10 being 'elated'. He obtained the figure by giving a 40-item 'mood test' from the Internet.

He took his measurements with the first 30 children on the school's alphabetical roll. The role-plays took place on Monday afternoons, one week apart. He made sure that half the children role-played Condition 1 the first week and Condition 2 the second, with the other half role-playing the conditions in the opposite sequence.

Richard's results showed that the mean mood score for Condition 1 was 3.4 and the mean mood score for Condition 2 was 7.2.

1. What was the population in this research?

2. Was Richard's sampling procedure appropriate? Explain your answer.

3. Identify the operationalised independent and dependent variable in this study.

4. Formulate an appropriate hypothesis for this study.

5. What experimental design was used in this research?

6. Would it be appropriate for Richard to generalise his conclusions to all Year 6 students in the school?
Explain your answer.

7. What would have to occur for these results to be considered reliable?

In a study by Loftus in 1975, one hundred and fifty students at the University of Washington, in groups of various sizes, viewed a brief videotape of an automobile accident and then answered ten questions about the accident. The critical one concerned the speed of a white sports car.

Half of the subjects were asked, "How fast was the white sports car going when it passed the barn while travelling along the country road?", and half were asked, "How fast was the white sports car going while travelling along the country road?" In fact, no barn appeared in the scene.

All of the subjects returned 1 week later and, without reviewing the videotape, answered ten new questions about the accident. The final one was, "Did you see a barn?" The subjects responded by circling "yes" or "no" on their questionnaires.

Of the subjects earlier exposed to the question containing the false presupposition of a barn, 17.3% responded "yes" when later asked, "Did you see a barn?", whereas only 2.7% of the remaining subjects claimed to have seen it. An initial question containing a false presupposition can, it appears, influence a witness' later tendency to report the presence of the non-existent object corresponding to that presupposition.

1. What was the aim of this research?

2. Describe the sample in this study.

3. Who might her population have been?

4. Which group was the control group and which group was the experimental group?

5. What is the operationalised independent variable in this study?

6. What is the operationalised dependent variable in this study?

7. Write a possible hypothesis that may have been investigated.

8. What did Loftus conclude at the completion of this study?
