

17.5 Module 2 (A04 task) – Assessment criteria for Handling data

	Strand 1	Strand 2	Strand 3
1-2	<b>Specify the problem and plan</b> Candidates choose a simple well-defined problem. Their aims have some clarity. The appropriate data to collect are reasonably obvious. An overall plan is discernible and some attention is given to whether the plan will meet the aims. The structure of the report as a whole is loosely related to the aims.	<b>Collect, process and represent data</b> Candidates collect data with limited relevance to the problem and plan. The data are collected or recorded with little thought given to processing. Candidates use calculations of the simplest kind. The results are frequently correct. Candidates present information and results in a clear and organised way. The data presentation is sometimes related to their overall plan.	<b>Interpret and discuss results</b> Candidates comment on patterns in the data. They summarise the results they have obtained but make little attempt to relate the results to the initial problem.
3-4	Candidates choose a problem involving routine use of simple statistical techniques and set out reasonably clear aims. Consideration is given to the collection of data. Candidates describe an overall plan largely designed to meet the aims and structure the project report so that results relating to some of the aims are brought out. Where appropriate, they use a sample of adequate size.	Candidates collect data with some relevance to the problem and plan. The data are collected or recorded with some consideration given to efficient processing. Candidates use straightforward and largely relevant calculations involving techniques of at least the level detailed in the handling data paragraph of the grade description for grade F. The results are generally correct. Candidates show understanding of situations by describing them using statistical concepts, words and diagrams. They synthesise information presented in a variety of forms. Their writing explains and informs their use of diagrams, which are usually related to their overall plan. They present their diagrams correctly, with suitable scales and titles.	Candidates comment on patterns in the data and any exceptions. They summarise and give a reasonably correct interpretation of their graphs and calculations. They attempt to relate the summarised data to the initial problem, though some conclusions may be incorrect or irrelevant. They make some attempt to evaluate their strategy.
5-6	Candidates consider a more complex problem. They choose appropriate data to collect and state their aims in statistical terms with the selection of an appropriate plan. Their plans are designed to meet the aims and is well described. Candidates consider the practical problems of carrying out the survey or experiment. Where appropriate, they give reasons for choosing a particular sampling method. The project report is well structured so that the project can be seen as a whole.	Candidates collect largely relevant and mainly reliable data. The data are collected in a form designed to ensure that they can be used. Candidates use a range of more demanding, largely relevant calculations that include techniques of at least the level detailed in the handling data paragraph of the grade description for grade C. The results are generally correct and no obviously relevant calculation is omitted. There is little redundancy in calculation or presentation. Candidates convey statistical meaning through precise and consistent use of statistical concepts that is sustained throughout the work. They use appropriate diagrams for representing data and give a reason for their choice of presentation, explaining features they have selected.	Candidates comment on patterns in the data and suggest reasons for exceptions. They summarise and correctly interpret their graphs and calculations, relate the summarised data to the initial problem and draw appropriate inferences. Candidates use summary statistics to make relevant comparisons and show an informal appreciation that results may not be statistically significant. Where relevant, they allow for the nature of the sampling method in making inferences about the population. They evaluate the effectiveness of the overall strategy and make a simple assessment of limitations.
7-8	Candidates work on a problem requiring creative thinking and careful specification. They state their aims clearly in statistical terms and select and develop an appropriate plan to meet these aims giving reasons for their choice. They foresee and plan for practical problems in carrying out the survey or experiment. Where appropriate, they consider the nature and size of sample to be used and take steps to avoid bias. Where appropriate, they use techniques such as control groups, or pre-tests of questionnaires or data sheets, and refine these to enhance the project. The project report is well structured and the conclusions are related to the initial aims.	Candidates collect reliable data relevant to the problem under consideration. They deal with practical problems such as non-response, missing data or ensuing secondary data are appropriate. Candidates use a range of relevant calculations that include techniques of at least the level detailed in the handling data paragraph of the grade description for grade A. These calculations are correct and no obviously relevant calculation is omitted. Numerical results are rounded appropriately. There is no redundancy in calculation or presentation. Candidates use language and statistical concepts effectively in presenting a convincing reasoned argument. They use an appropriate range of diagrams to summarise the data and show how variables are related.	Candidates comment on patterns and give plausible reasons for exceptions. They correctly summarise and interpret graphs and calculations. They make correct and detailed inferences from the data concerning the original problem using the vocabulary of probability. Candidates appreciate the significance of results they obtain. Where relevant, they allow for the nature and size of the sample and any possible bias in making inferences about the population. They evaluate the effectiveness of the overall strategy and recognise limitations of the work done, making suggestions for improvement. They comment constructively on the practical consequences of the work.