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Getting Started Guide

GCSE (9-1) Statistics

Pearson Edexcel Level 1/Level 2 GCSE (9-1) in Statistics (1ST0)

Pearson

Getting Started: GCSE (9–1) Statistics

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1. Introduction

GCSE Statistics has become very popular in recent years. An understanding of data in the real world and how it can be used (or misused) can empower students and is relevant to everyone. Additionally a GCSE course in Statistics can enable students to acquire transferable skills to support them in progressing beyond GCSE in a range of subjects.

Some schools enter students for GCSE Statistics to give them a second opportunity to gain a mathematically based qualification at this level, which can be seen as useful by employers or for further study. Whilst GCSE Statistics cannot count for a school in the 'Mathematics' element for the Progress 8 measure for performance tables, it can count in one of the three slots in the 'Open' element (or 'third bucket') of the measure.

This Getting Started guide provides an overview of the new GCSE specification, to help you get to grips with the changes to content and assessment, and to help you understand what these mean for you and your students.

1.1 Key features of our GCSE Statistics specification

The specification and Sample Assessment Materials (SAMs) have been developed in consultation with hundreds of fellow teachers who, through written evidence, focus groups and one-to-one interviews, have provided feedback at each stage of the development. We have trialled our new questions with over 250 GCSE Statistics students and consulted with higher education and statistics educationalists.

All the feedback we have gathered has helped us to redesign a qualification with content you will know and recognise, which is clear about content coverage and supports you in developing students' statistical understanding and transferable skills.

The 2017 GCSE Statistics specification has been built on the following key features.

- **Straightforward assessment structure.** Based on two written papers of equal size and weighting; both papers cover all assessment objectives. Any content may be tested on either paper including assessment of understanding of the statistical enquiry cycle.
- **Familiar organisation of content.** The specification content is organised to reflect the sequence of the statistical enquiry cycle with a separate section for probability.
- **Foundation and Higher tier content clearly set out.** Our specification sets out Foundation and Higher tier content separately and we tell you where topics are not required at Foundation.
- **Guidance column.** This feature in the specification provides clarity of content coverage.
- **Clear question papers and carefully constructed mark schemes.** These ensure the assessments are accessible for all abilities.
- **Careful ramping of demand.** The assessments are designed so that the demand is ramped within individual questions, from question to question throughout each paper, and between the tiers, through the use of common overlap questions.
- **Develops students' transferable skills.** Our approach develops skills that students will use in other subjects such as science and geography and reinforces techniques needed for GCSE Mathematics.

- **Real life data and scenarios.** The assessments include the widespread use of scenarios and data from a range of real world contexts, capturing students' interest and giving them an insight into the importance of statistics in the real world.
- **Supports progression to A Level Mathematics.** The focused study of statistics offered by this qualification lays foundations of knowledge, understanding and skills that can be further developed in the study of the compulsory statistics content of the new A Level Mathematics.

1.2 Our support

We are providing a package of support to help you plan and implement the new specification.

- **Plan**. In addition to the guidance in this guide, we will be providing a course planner (for delivery over one year or two years) and a flexible scheme of work which you can adapt to suit your department. Both of these documents show the links to GCSE Mathematics to make integrated planning easier.

  We will provide mapping documents that map the new GCSE (9–1) Statistics to and from the legacy GCSE Statistics specification, and map GCSE (9–1) Statistics to and from GCSE (9–1) Mathematics.

  Also available is a content progression table which sets out the GCSE Statistics specification content so as to show the progression through each content point.
- **Teach**. Our free resources will include teaching points and common misconceptions, as well as support for the statistical enquiry cycle.

  Pearson will be providing the following resources* (publishing in spring 2017).

  For students:
  - Student Book
  - ActiveBook (eBook version of the Student Book)
  - Revision Guide
  - Revision Workbook

  For teachers:
  - Pearson Progression Service (assessments mapped to the Edexcel scheme of work with online markbook plus practice papers)

  * These resources have not yet been endorsed. You do not have to purchase any resources to deliver our qualification.

  Track and assess. In addition to the sample assessment materials we will provide specimen papers to support formative assessment and mock exams. We will also provide marked exemplars of student responses with examiner commentaries.

  Our free online ResultsPlus service will be available, providing the most detailed analysis available of your students' performance. ExamWizard, our free exam preparation tool, makes available a bank of Edexcel exam questions, mark schemes and examiner reports so you can create mock papers, homework or practice tests in minutes.

  Develop. We have a programme of free face-to-face and online Getting Ready to Teach events to support you with introducing the new Edexcel GCSE (9–1) Statistics. We will hold events in spring and summer 2017 for those introducing GCSE Statistics in September 2017 and events in autumn 2017 for those planning to start in September 2018.

  Our subject advisor team led by Graham Cumming, and the support and resources of the Mathematics Emporium, will guide you through all the changes and be on hand to answer any questions you may have.

Support documents will be available on the GCSE 2017 Statistic subject pages and the Mathematics Emporium.

Mathematics Emporium

- www.edexcelmaths.com
- Email: mathsemporium@pearson.com
- Twitter: @EmporiumMaths

GCSE (9–1) Statistics subject page

- http://quals.pearson.com/stats17

2. What's changed?

2.1 What are the changes to the GCSE qualification?

In line with other subjects, GCSE Statistics is changing to a linear assessment model graded from 9 to 1, with the level of demand and challenge generally increased from the previous GCSE. Grade 9 is intended to provide stretch for the most able candidates.

Controlled assessment is no longer permitted in GCSE Statistics and has been replaced with questions that assess understanding of the statistical enquiry cycle.

Changes to GCSE Statistics content requirements

The content requirements for GCSE Statistics have been revised. All awarding organisations' specifications for GCSE Statistics must meet these criteria.

Some new content has been introduced, mostly at the Higher tier, including geometric mean, interdecile range, calculation of skewness, cleaning data, alternative outlier calculations (including use of standard deviation) and the interpretation of Pearson's product moment correlation coefficient. Calculation of PMCC is not expected but the difference between using PMCC and Spearman's rank correlation coefficient should be known.

Additionally there is a greater expectation on candidates to know key formulae so fewer will be given in the exam. For example, the formula for mean will not be given in the exam, nor will the expansion of $(p+q)^n$ for use in binomial probability problems.

Changes to Assessment Objectives

The GCSE Statistics Assessment Objectives have been revised. These are quite different from those on the previous specification and, in line with other subjects, are hierarchical in their demand.

Previous GCSE Statistics specification (last assessment summer 2018)

AO1 10–20%	Analyse a statistical problem and plan an appropriate strategy
AO2 10–20%	Describe and use appropriate methods to select and collect data
AO3 40–50%	Process, analyse and present data appropriately
AO4 25–35%	Use statistical evidence to identify inferences, make deductions and draw conclusions

New GCSE Statistics specification (first assessment summer 2019)

AO1 55% (±3)	Demonstrate knowledge and understanding, using appropriate terminology and notation, of standard statistical techniques used to: · collect and represent information · calculate summary statistics and probabilities
AO2 25% (±3)	Interpret statistical information and results in context and reason statistically to draw conclusions
AO3 20% (±3)	Assess the appropriateness of the statistical methodologies and the conclusions drawn through the application of the statistical enquiry cycle

In the new specification, AO1 accounts for a majority of marks in assessment, as it includes the knowledge and use of the standard statistical techniques of data collection, calculations of statistical measures, graphical representations and probability calculations needed to carry out a statistical investigation.

Statistical reasoning is the thrust of AO2, and involves the interpretation in context of statistical information and results from the standard techniques in AO1, and drawing conclusions.

Finally AO3 requires candidates to consider which are the appropriate techniques needed for a particular purpose, as well as assessing conclusions drawn from an investigation.

In terms of assessment, questions assessing AO2 or AO3 may typically also address aspects of AO1.

The weighting of each of the Assessment Objectives may vary by ±3% across both papers.

2.2 Changes to the specification

Specification overview

The new Edexcel GCSE Statistics assessment is based on two equally weighted written papers at each of Foundation tier and Higher tier. Calculators may be used on both papers.

Both papers include short, medium and open response questions.

All the content will be assessed on both papers.

The tables below provides a brief overview of the assessment.

Paper 1 (Foundation/Higher)	Paper 2 (Foundation/Higher)
Written examination: 1 hour 30 minutes 50% of the qualification 80 marks	Written examination: 1 hour 30 minutes 50% of the qualification 80 marks
AO1: 27.5% of total assessment AO2: 12.5% of total assessment AO3: 10% of total assessment	AO1: 27.5% of total assessment AO2: 12.5% of total assessment AO3: 10% of total assessment

Changes to specification content

For users of the previous specification much of the content will look familiar. In response to feedback the content for this specification has been presented in a similar order as before. This broadly follows the stages of the statistical enquiry cycle, with sections as follows:

1. The collection of data
2. Processing, representing and analysing data (including interpretation)
3. Probability

There is some new content at both Foundation tier and Higher tier.

As mentioned in Section 2.1, the new content to be assessed at Higher tier includes geometric mean, interdecile range, calculation of skewness, cleaning data, alternative outlier calculations (including use of standard deviation) and the interpretation of Pearson's product moment correlation coefficient.

Topics new to the Foundation tier include more sampling techniques than in the previous specification (e.g. convenience and quota sampling), cleaning data, price indices (RPI and CPI), interpretation of Spearman's rank correlation coefficient, Venn diagrams and conditional probability.

See Section 4, and refer to the separate free content mapping documents, for details on how the new and old specifications overlap, and identifying any new or deleted content.

Changes to assessment

The tiering arrangements are similar to the new GCSE Mathematics (9-1) specification. Content is classified into three types, set out in standard type, underlined type and **bold** type. It is expected that:

- All students (both tiers) will develop confidence and competence with the content in standard type.
- All students will be assessed on the content identified by the standard type and the underlined type, and this content will be in both Foundation tier and Higher tier papers. The more highly attaining students will develop confidence and competence with all this content.
- Only the more highly-attaining students (Higher tier only) will be assessed on the content identified in **bold** type. The highest attaining students will develop confidence and competence with this content.

For ease of use the specification lists all content to be tested at each tier in separate sections.

Foundation tier papers will assess the standard and medium demand content as identified in the Foundation subject content section of the specification, and will be targeted at grades 1 to 5. Underlined text indicates medium demand content and will be targeted at grades 4 and 5.

Higher tier papers will assess all content including medium and high demand content as identified in the Higher subject content section of the specification, and will be targeted at grades 4 to 9. Bold text indicates high demand content which will generally be targeting grades 7 to 9.

The most obvious change in the form of assessment is that controlled assessment is no longer included. Both papers will include questions testing understanding of the statistical enquiry cycle.

Other aspects of the new assessments are as follows:

- Paper 1 and Paper 2 are each tiered but have the same mark and time allocations for both Foundation and Higher tiers.
- The two papers together are worth 160 equally weighted marks with any content being assessed on each paper.
- Candidates must take both papers at the same tier.
- As in the previous specification, a number of questions will be set using real data from authentic contexts.
- Papers will be ramped, with the more accessible questions occurring early on in the paper and the more challenging questions toward the end of the paper.
- It is expected that candidates use correct statistical language appropriately in their written responses.
- Calculators are allowed for both papers.

Paper 1 and Paper 2:

- Each 1 hour and 30 minutes; 80 marks.
- Will mostly have a 'familiar feel', being quite similar to the exam papers taken in the previous specification.
- Will assess AO1, AO2 and AO3. (A03 questions will assess the appropriateness of methods and of conclusions.)
- Will include questions which test the various stages of the statistical enquiry cycle.
- Questions may be set in familiar and unfamiliar contexts.
- Will include some 'extended response' questions as required by the overall GCSE reforms.
- The first few questions (~20 marks) of each of Higher tier papers 1H and 2H will be common with Foundation tier and will appear toward the end of Papers 1F and 2F.
- With the requirement for increased demand and challenge it can be expected that less structure may be given in some questions with candidates expected to determine the appropriate techniques that are needed to address a problem.

Although there is no controlled assessment it is expected that candidates will carry out statistical investigations during their course of study to become familiar with the statistical enquiry cycle. This should be to their advantage when addressing questions on the statistical enquiry cycle, particularly focussed on A03.

3. Planning

3.1 Planning and delivering a linear course

Centres who have taken GCSE Statistics previously may choose to deliver the new course in a similar way. It may be taken as a two year course, alongside GCSE Mathematics, or as a stand-alone one year or two year course (see further details in the separate course planner). There is no change to the guided learning hours for a GCSE which remains at 120 hours.

While formal controlled assessment no longer forms part of the GCSE, practical investigation work remains an important part of any statistics course. Designing statistical investigations and collecting and exploring data sets will help familiarise students with the statistical enquiry cycle, which will be assessed in written exam questions.

For more on the implications of linear assessment see Section 5.1.

3.2 Suggested resources

The previous specification included three new 'themes' for controlled assessment each year. The teacher guidance for these controlled assessment tasks included suggestions or links for sources of data. These provide a wealth of possible ideas for practical statistical investigation work as suggested above.

Specimen exam papers will be provided while papers for previous specifications can also give useful extra practice. ExamWizard, our free bank of past Edexcel exam questions, can be used similarly.

Subscribing to the Edexcel Mathematics Emporium (http://www.edexcelmaths.com) provides invaluable access to these resources and much more.

In addition to the above, the following free support will be provided for Edexcel GCSE (9–1) Statistics:

- this Getting Started Guide
- mapping documents
- a course planner
- a flexible and adaptable scheme of work
- marked exemplars of student work with examiner commentaries
- ResultsPlus and ExamWizard.

Pearson's other published resources will provide comprehensive support for the specification. As well as providing clear explanations, engaging examples and plenty of practice questions, the resources will help your students to develop the enquiry skills that are at the heart of being a good statistician. You can request a free evaluation pack at: www.pearsonschools.co.uk/gcsestats2017

You do not need to purchase resources to deliver our qualification.

3.3 Delivery models

The course planner will offer two possible teaching routes through the new GCSE Statistics course. There is a one year accelerated planner and a two year planner, both with the option of being co-taught alongside GCSE Mathematics. Each planner highlights the benefit of including opportunities for students to carry out real-life work (cross curricular if possible) on the statistical enquiry cycle in preparation for assessment within the exam. Centres can adapt the planners as necessary to fit in with their own timetabling. Prerequisite GCSE Mathematics knowledge is also made available in the planner.

4. Content guidance

The subject content published by the Department for Education sets out the knowledge, understanding and skills common to all specifications in GCSE Statistics.

Our specification provides separate sections detailing the Foundation tier content and the Higher tier content.

There is a guidance column in the subject content section of the specification which gives more detail on the content point or clarification of what students need to learn.

Please refer to the separate free content mapping documents for more details on the content, including how the new and old specifications overlap and identifying the new or deleted content. Some of the key changes are detailed below.

Our free support document, the content progression table, provides the specification content arranged to show the progression through each content point.

4.1 The statistical enquiry cycle

For the study of statistical techniques to be meaningful they need to be set in the context of the statistical enquiry cycle. On the previous specification this was achieved by the demand for a controlled assessment task to be undertaken. As there is no assessed task on this new specification it is important that students are exposed to the application of the statistical enquiry cycle in their studies.

By carrying out tasks students will develop a better understanding of:

- the need for careful planning – designing hypotheses and issues or constraints relating to data collection, including sources, sensitivity and reliability of data
- appropriate methods for collecting, processing and representing data
- the potential for using technology in collecting, processing and representing data
- appropriate diagrams and statistical measures including the interpretation of results from statistical packages
- reasons for choosing particular techniques in data collection, diagrammatic representation or statistical measures
- making comparisons between sets of results, making inferences and interpreting findings in context
- considering the significance of findings and recognising weaknesses in the approach taken at each stage
- the need for clear and concise communication of findings.

Students' understanding of the statistical enquiry cycle will be tested in each paper.

4.2 Content from previous specification no longer included

Removed from Foundation tier:

- understanding the effects of accuracy on measurement
- non-linear models for bivariate data.

Removed from Higher tier:

- understanding the effects of accuracy on measurement
- non-linear models for bivariate data

- using simulation for more complex probabilities
- discrete uniform distribution.

4.3 New content to Foundation tier not in previous specification

Topic area	Details
Context sensitivity	Awareness that context sensitivity can be an issue for availability of data and a possible cause of bias when collecting data.
Judgement, quota and convenience sampling	*Convenience sampling* is now explicit terminology so should be known. *Quota sampling* was previously Higher tier only (e.g. obtaining set numbers in various age-groups by interviewer choice). *Judgement sampling* is a non-random method where subjects are selected according to whether they appear to follow certain selection criteria (e.g. whether data is available).
Cleaning data	An awareness of outliers and anomalies (which might be genuine data), or other issues with data, e.g. missing data, or extraneous symbols/notation.
Price indices	The application of simple index numbers in context to include an awareness of RPI and CPI.
Rates of change	Including rates of change over time when interpreting trends. Where appropriate, formulae will be given, e.g. for crude birth rates. (Standardised rates will be included on Higher tier.)
Spearman's rank correlation coefficient	An awareness of the numeric scale for correlation and the interpretation of SRCC values. (Note the *calculation* of SRCC remains on Higher tier only.)
The effect of sample size for estimating probability	Knowing that using a larger sample will likely provide a better estimate of probability.
Venn diagrams	Familiarity with Venn diagrams to represent outcomes and probabilities for no more than three events.
Conditional probability	Find and use simple conditional probabilities of events (e.g. using sample space diagrams, Venn diagrams, tree diagrams, etc.).

4.4 New content to Higher tier not in previous specification

Any new content to Foundation tier may also be assessed on Higher tier papers.

Topic area	Details
Misuse of frequency density formula	A greater understanding of frequency density and the effect of incorrect calculation.
Multivariate data	Extending the idea of bivariate data to include a number of possibly interrelated variables.
Geometric mean	Calculation and application of geometric mean (e.g. to find the average annual percentage change using a series of chain based index numbers).
Skewness calculation	In addition to identifying skew from diagrams or from comparing values of mean, median and mode, a calculation of skew may be required. The formula for a numerical value of skewness will be given, with informal interpretation of this value expected.
Interdecile range	Interpercentile range remains on the specification (e.g. 10th to 90th interpercentile range). Interdecile range is now also included. There should be an appreciation of why these might be preferable to IQR.
Outliers using standard deviation	As well as familiarity with using limits 1.5 $\times$ IQR from lower and upper quartiles, the alternative use of mean ± 3 $\times$ standard deviation is now also expected.
Sample mean distribution	An awareness that if many samples are taken, the sample means will be much more closely grouped than the original values in a sample. (No formal understanding of the sampling distribution of $\overline{X}$ is expected.)
Action and warning lines	Use of action and warning lines on control charts remains. There is a greater expectation of how these limits are calculated (e.g. $\mu \pm 2\sigma$ for warning lines).
Binomial distribution	A greater familiarity with the properties and conditions for a binomial model is expected. B(n, p) notation may be used. No expansion of $(p+q)^n$ will be given. Coefficients for binomial probability coefficients may be found using the ${}^nC_r$ function on a calculator or Pascal's triangle, etc. Use of tables is not expected.
Normal distribution	A greater familiarity with the properties and conditions for a normal model is expected. Approximate percentages of results expected within $\mu \pm \sigma$, $\mu \pm 2\sigma$ and $\mu \pm 3\sigma$ are expected. N(μ, σ^2) notation may be used. Use of tables is not expected.

Pearson's product moment correlation coefficient	An awareness of the numeric scale for PMCC and the interpretation values. (Note the *calculation* of PMCC is not expected.) An awareness of the difference between PMCC and SRCC (e.g. that a non-linear relationship may lead to 'high' SRCC but a PMCC value closer to 0).

4.5 Formulae

Appendix 1 to the specification sets out the approach taken to the provision of formulae in the exams. For Foundation tier there will be no formula page in the exam paper as there is only one formula permitted to be given in the assessment (rates of change). If this formula is needed it will be given in the relevant question. For Higher tier there will be a formula page, as for the previous specification, although fewer formulae are given.

Appendix 2 to the specification lists formulae relevant to GCSE Statistics. The formulae fall into two categories for each tier.

1. Formulae from GCSE Mathematics which candidates are expected to know – these may not be given in the exam and must be learnt.
2. Key statistics formulae which candidates are expected to know – these may not be given in the exam and must be learnt.

The guidance column in the specification gives further details for each topic.

Note that the expansion of $(p+q)^n$ which was given in binomial probability questions on the previous specification can no longer be given. Candidates are *not* expected to learn the expansions. It is likely that an approach using combinations $\left({}^nC_r\right)$ or Pascal's triangle will be used by candidates to evaluate probabilities. No statistical tables of probabilities will be provided.

4.6 Prior knowledge

This specification aims to test candidates' understanding of statistics although some prior knowledge of mathematics is assumed. Please refer to Appendix 3 of the specification for full details. In particular it is expected that students will be familiar with:

- fraction, decimal and percentage representations, including their use for comparisons and for probability
- place value, including use of standard form and appropriate rounding
- basic mathematical operations and inverse operations
- use of =, ≠, <, >, ≤, ≥ notation
- use of formulae including substitution or rearrangement (e.g. on Higher tier to find a data value given a standardised score, mean and standard deviation)
- use of axes and coordinates
- use of standard units and compound units
- the gradient and general equation for a straight line.

This assumed content will not be explicitly tested but may be expected in the context of a statistical problem.

4.7 Technology

A standard scientific calculator, as used for GCSE Mathematics, will be sufficient for candidates taking the written exams.

Candidates should be familiar with, and given opportunities during the course to make use of, statistical functions on calculators, statistical functions on spreadsheets and statistical software packages. Undertaking statistical investigations as indicated in Section 5.3 will provide these opportunities.

Questions will not be set explicitly about the methodology of using these technologies. However, for example, results from statistics software may be referred to in a question.

5. Assessment guidance

5.1 Implications of linear assessment

There will be two written exam papers taken at the end of the course. As a linear GCSE both written papers must be taken in the same exam series and at the same tier of entry. There is no longer the opportunity of doing controlled assessment several months before the exam to get that part of the assessment out of the way early.

The skills previously developed by candidates undertaking controlled assessment, particularly their understanding of the statistical enquiry cycle, remain important and will be assessed. It is expected that candidates will still undertake statistical investigations, with the skills they develop being assessed in both papers.

According to the general principles for re-taking linear GCSE exams, any candidate wishing to re-take must re-sit both papers. For school performance tables only the first attempt will count.

5.2 Assessment Objectives and weightings

AO1 55% (±3)	Demonstrate knowledge and understanding, using appropriate terminology and notation, of standard statistical techniques used to: · collect and represent information · calculate summary statistics and probabilities
AO2 25% (±3)	Interpret statistical information and results in context and reason statistically to draw conclusions
AO3 20% (±3)	Assess the appropriateness of the statistical methodologies and the conclusions drawn through the application of the statistical enquiry cycle

5.3 Paper 1 and Paper 2

There is no distinction between the content which may be assessed on Paper 1 or Paper 2. Any content may be assessed on either paper. The papers address the same assessment objectives and have equal weighting.

Paper 1 (Foundation/Higher)	Paper 2 (Foundation/Higher)
Written examination: 1 hour 30 minutes 50% of the qualification 80 marks	Written examination: 1 hour 30 minutes 50% of the qualification 80 marks
AO1: 27.5% of total assessment AO2: 12.5% of total assessment AO3: 10% of total assessment	AO1: 27.5% of total assessment AO2: 12.5% of total assessment AO3: 10% of total assessment

Assessment of statistical methods and techniques, including the drawing of conclusions from the results, addresses AO1 and AO2. As such some questions may appear similar to exam questions on the previous specification. Mark schemes for these questions will also appear to be quite similar.

Assessment of AO3 includes considering the appropriateness of statistical techniques or assessing conclusions drawn. This addresses skills previously tested in controlled assessment, and particularly the statistical enquiry cycle. Questions will address various stages of the statistical enquiry cycle including planning investigations.

It is expected that candidates will carry out statistical investigations during their course in order for them to become familiar with the statistical enquiry cycle in a meaningful way. This will see them at an advantage when addressing questions on the cycle.

Typically there will be about 15 questions in each Paper although this may vary between exam series and be different at each tier. There will be common overlapping questions on the two tiers, with the first questions on Papers 1H and 2H appearing toward the end of Papers 1F and 2F respectively.

Along with a mix of short or medium response questions, some open response questions will be included, especially at Higher tier.

Short response questions may involve a simple calculation or interpretation of a result. A *medium response* question may require a longer calculation or more in-depth interpretation. *Open response* questions will be different from questions in previous exam papers in that less guidance will usually be given. Candidates will be expected to identify appropriate statistical techniques needed to address a problem before applying them to find an answer. Therefore there is a greater need for students to develop an understanding of statistical techniques and their purpose, rather than simply the mechanical learning of standard methods. This will represent a greater challenge to candidates, making the assessment more robust than the previous specification.

5.4 Command words and answering exam questions

In written answers to questions, candidates should use correct statistical language appropriately. When asked for an 'interpretation' this should make reference to the original real-life context of the problem.

When drawing a conclusion to a problem candidates should, wherever possible, make reference to the *statistical evidence* that leads to the conclusion. For example, 'Year 9 have faster reaction times on average, *because their mean time is lower*.' (Note that questions may not always ask candidates to 'give a reason' but this should be done as a matter of course.)

As referred to a number of times in examiners' reports for previous specifications, candidates need to consider all relevant aspects in answering a question. For example, comparing distributions is a common demand in statistical work. This should usually mean comparing using an average, using a measure of spread and the consideration of skewness, with some interpretation in the context of the problem.

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