

**Edexcel GCSE**

**Statistics**

**Controlled Assessment**

**Teacher Support Book 2012**



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Statistics

# Welcome to the GCSE Statistics 2012 Controlled Assessment Teacher Support Book

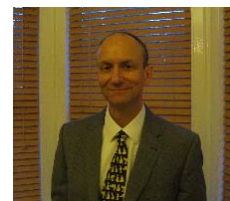
This CA Teacher Support Book has been designed to provide you with the answers to key questions that you may have during the teaching and assessment of Controlled Assessment Unit 5ST02: Statistics.

The book is divided into four sections. Inside you will find:

- Guidance on teaching the course
- Suggested resources to support your teaching.

## Expert advice from the people who know

We hope you find this document useful and look forward to working with you on our new GCSE specifications. We are on hand to answer your questions so please feel free to get in touch.



Joe Petrain  
Principal Moderator



Nathalie Bodevin  
Subject Leader

For queries related to the teaching of the specification, please visit our Ask the Expert web page: [www.edexcel.com/aboutus/contact-us](http://www.edexcel.com/aboutus/contact-us)

For any other queries, please call 0844 463 2931 or email: [TeachingMaths@pearson.com](mailto:TeachingMaths@pearson.com)

**We look forward to working with you.**

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A brief overview of controlled assessment and the controlled assessment units.

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In this section we provide you with answers to your key questions.

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In this section we provide you with information and resources to help you plan and deliver controlled assessment with confidence.

# Introduction to controlled assessment

### What's new?

QCDA has required a change from coursework to controlled assessment. The main changes are:

- Candidates carry out a task in a controlled environment. This means that teachers control the duration of activities, access to resources and the interactions between candidates.
- Teachers supervise all aspects of the work to allow them to authenticate the work with confidence.

There are two levels of supervision, formal supervision and informal supervision. Formal supervision means that all the work is done in the classroom and there is restricted access to resources such as the internet. Informal supervision means that work can be taken outside the classroom and there is no restriction on resources, but the teacher must be aware of what the candidate is doing and how they are doing it.

### What will candidates actually do?

Candidates will submit a task. The task is divided into three stages:

- In the first stage candidates produce a plan. This is done under formal supervision.
- In the second stage candidates collect, process and represent data. This is done under informal supervision.
- In the third stage candidates interpret and evaluate their findings. This is done under formal supervision.

### What is an investigation?

A statistical investigation is a task in which a candidate frames a hypothesis, which may be divided into a number of sub-hypotheses. They then collect relevant data and use statistical techniques, both diagrams and calculations, to process the data. Candidates then interpret their findings and draw conclusions, evaluating what they have done in the context of the hypothesis.

Student Notes help to introduce each task. These set the context and provide some ideas for the types of questions that could be investigated.

Candidates decide on the questions they wish to investigate and then plan and undertake the work accordingly.

# Overview of assessment

<p>Candidates submit one task. The task is chosen from one of the three tasks set each year. Tasks are changed each year.</p>	<p>Each task is done in three stages:</p> <ol style="list-style-type: none"> <li>1. Planning</li> <li>2. Collecting, processing, analysing and representing the data.</li> <li>3. Interpreting and evaluating results.</li> </ol>
<p>The controlled assessment component counts for 25% of the overall assessment.</p>	<p><b>Unit information</b></p>
<p>It is worth 40 raw marks and 100 UMS. It is submitted for moderation in the summer series of examinations but it can be assessed by the teacher at any time during the course. It is marked by the centre and externally moderated.</p>	<p>This unit must be taken in the same year as the examination.</p>
<p><b>Preparation</b> Student Notes are provided. These set the context for the task and provide ideas for suitable lines of enquiry.</p>	<p><b>Write-up</b> Candidates should be given about 12 hours under controlled conditions to complete the three stages of their task. About 1–2 hours are used to produce a plan. This is done under formal (not exam) conditions. About 8 hours are used to collect, process and represent the data. This is done under informal conditions. About 1–2 hours are used to interpret and evaluate the findings. This is done under formal conditions.</p>

### Task setting, task taking and task marking

Candidates do their task in three stages. The marking of the second stage is subdivided into Parts 2a and 2b.

#### **1. Planning (10 marks)**

This part of the work is done under formal supervision.

Candidates spend up to approximately 2 hours planning how they are going to investigate the task. Formal supervision does not mean exam conditions and candidates may discuss their planning with their teacher.

Candidates should state the hypothesis (or hypotheses) they intend to investigate.

Candidates must consider what data they want to collect and how they are going to collect it, giving reasons.

Candidates must provide a strategy for how they will process and represent the data, giving reasons.

Work must NOT be taken out of the classroom.

Candidates may use ICT but access to the internet or school intranet is NOT allowed.

When the work has been completed it is handed in to the teacher who will then mark it and give feedback to the candidate.

Candidates are allowed to modify their plans in the light of the teacher's feedback but the mark for planning **cannot** be changed. The feedback given should not give undue help.

All feedback, including agreed changes to the plan, should be recorded on the Student Record Form.

#### **2a. Collecting data (8 marks)**

This part of the work is done under informal supervision and should take place under the time constraints determined by the centre.

Candidates follow their plan and collect the data.

The task must be based on data collected from primary and/or secondary sources by the candidate, and these sources must be clearly acknowledged.

Candidates may work on their own or in groups. If candidates work in groups teachers should ensure that the individual contribution of each candidate can be assessed.

Candidates may use the internet and bring in work from outside the classroom but this must be monitored to ensure it relates to the initial plan.



## Section 2: Assessment information

### ***2b. Processing, analysing and representing data (12 marks)***

This part of the work is done under informal supervision and should take place under the time constraints determined by the centre.

Candidates should complete all work independently.

Candidates should have access to a copy of their plan and to their collected data.

Candidate access to and use of ICT should be determined by the centre.

The use of ICT, e.g. for calculations, graphs, charts or diagrams, is allowed.

### ***3. Interpreting and evaluating data (10 marks)***

This part of the work is done under formal supervision.

The candidates spend up to approximately 2 hours interpreting and evaluating their work.

Candidates must complete all work independently.

Candidates should have access to all their previous work.

Candidates may use ICT but access to the internet or the school intranet is NOT allowed.

At the end of this time, candidates hand their work in to their teacher. The teacher assesses the work using the assessment criteria for each stage.

The teacher records the marks for the work on the Student Record Form, together with any other comments or feedback such as IT problems or candidate absence.



### Planning for controlled assessment

Here are the steps teachers need to go through when undertaking the controlled assessment component of the course.

#### **Step 1**

The teacher prints off copies of the three themes, looks at them and decides which to use.

#### **Step 2**

The teacher checks the internet for useful data. A list of internet sites is given with the Teacher Notes. Examples of the data can be printed for future use.

#### **Step 3**

Introductory lesson(s) are planned to introduce the controlled assessment. The themes are discussed and Student Notes are provided as appropriate.

#### **Step 4**

Candidates are given time to think about what they are going to do. They may research the internet for suitable data sources. This should be carefully monitored by teachers as data from the internet is often unsuitable for candidates to use. Examples of suitable data (not data sets) may be taken in to the planning stage.

#### **Step 5**

The candidates plan their tasks. This is done in the classroom under formal supervision. Each candidate writes up their whole plan. If this runs over several lessons the work should be collected between lessons. Plans must not leave the classroom during this stage of the work.

## Section 2: Assessment information

### Step 6

The teacher marks the plans and gives feedback to each candidate. If the candidate has not planned sensibly or has failed to plan work commensurate with their ability the teacher may give feedback to the candidate which allows them to revise their original plan. The feedback must be given in such a way as not to constitute undue help. The mark for planning cannot be changed.

The Student Record Form (see below) is an important part of the assessment process. It gives the external moderator a snapshot of the interactions between teachers and candidates.

The front of the Student Record Form.

#### Student Record Form / Authentication Form

Candidate name: _____	<b>Total mark out of 40:</b> _____
Candidate number: _____	
Centre name: _____	
Centre number: _____	

Planning (10 marks)	Date completed	
<b>Teacher's advice to student</b>		
<b>Student's changes to initial plan</b>		

## Section 2: Assessment information

### **Step 7**

The candidate revises their plan in the light of the teacher's feedback. Any changes to the original plan must be agreed by the teacher and recorded on the Student Record Form.

### **Step 8**

The candidates collect data according to their plans.

### **Step 9**

The candidate processes, analyses and represents their data. If at this stage the candidate should wish to pursue a line of enquiry not identified in the plan this must be agreed by the teacher and recorded on the Student Record Form.

### **Step 10**

Candidates use all their work to interpret and evaluate their findings. This is done in the classroom under formal supervision. If this runs over several lessons the work should be collected between lessons.

### **Step 11**

The work is put together at the end of this stage and all the paperwork is completed, e.g. marks and comments entered on the Student Record Form, and signed by both teachers and candidates.

## Section 2: Assessment information

The back of the Student Record Form

Assessment Objective	Centre mark	Moderator mark	Comments (Additional comments to justify mark)
Planning (10 marks)			
Data collection (8 marks)			
Processing, analysing and representing data (12 marks)			
Interpreting and discussing data (10 marks)			

Other comments:

**DECLARATION TO BE SIGNED BY THE CANDIDATE**  
I declare that the work submitted for assessment has been carried out without assistance other than that which is acceptable under the scheme of assessment.

Signed ..... Date .....

**DECLARATION TO BE SIGNED BY THE TEACHER-EXAMINER RESPONSIBLE FOR COMPLETING THE CANDIDATE RECORD FORM**  
I declare that the task and project of the candidate in respect of the marks on this form have been kept under regular supervision and that, to the best of my knowledge, no assistance has been given apart from any which is acceptable under the scheme of assessment and has been identified and recorded.

Signed ..... Date .....

### Step 12

Teachers mark the work ready for submission. If more than one teacher is responsible for marking the work then the work must be internally moderated to ensure uniformity of assessment between all teachers and groups.

# FAQs: Preparing to teach controlled assessment

Before you can plan your teaching, you will need to have an idea of how the controlled assessment is to be assessed and what candidates have to do. Here are some important answers to frequently asked questions about controlled assessment.

### What are the levels of control?

“

Controlled assessment is completed under different levels of control, i.e. formal supervision (or high control) and informal supervision (or medium control).

Both the planning stage and the analysis and evaluation stage of the investigation are done under **high control** conditions. This means that all the work is supervised in the classroom and that it cannot be removed from the classroom. The use of the internet or school intranet is NOT permitted and must be deactivated. High control does not mean exam conditions, so candidates may discuss their planning with their teacher.

Both the data collection stage and the processing and representing data stage of the investigation are done under **medium control** conditions. This means that candidates can do the work at home or at school. The use of the internet or school intranet is permitted but must be monitored by the teacher. Teachers can ask the candidates to show their work at any time.

”

### When will I see the tasks?

“

Tasks will be put up on the website for centres about 15 months before submission, which is in early May. The controlled assessment task must be submitted in the same year that the candidate takes the written examination and the tasks are changed each year. Therefore it is essential that teachers ensure the task they select is to be submitted in the same year their candidates will take the examination.

”

### When can candidates see the task?

“

The teacher decides when it is most appropriate for candidates to start the task – typically towards the end of the course. They can choose to do this at any time from receipt of the tasks.

”

## Section 2: Assessment information

### When can the controlled assessment be offered?

“

The controlled assessment task was available for first assessment in June 2010 and is available for every summer session. The task is offered once a year and must be submitted by May in the same year as the examination.

”

### Will there be any choice?

“

Yes. Three tasks are provided each year to help you choose a topic that will best engage your candidates. It is not necessary for the whole class to do the same task.

Candidates must submit only one task for assessment.

There will be at least one task which will involve the collection of primary data, and one which will involve the collection of secondary data.

”

### What happens with resits?

“

There is only one assessment opportunity for GCSE Statistics each year. Candidates wishing to resit this qualification will need to repeat both components of the examination. Candidates must choose a theme that is current for the year of examination. Themes are changed each year.

”

### Can candidates use ICT to do their statistics?

“

Yes, the use of ICT is encouraged. Some of the uses of ICT include:

- setting up and interrogating databases
- researching the internet for secondary data
- running simulation models
- processing and representing data using statistical packages.

It should be noted, however, that for the controlled assessment task the selection of appropriate graphs or computations *with reasons* is the real emphasis of the assessment.

If ICT is used candidates should pay particular attention to the scales of their graphs.

”

## Section 2: Assessment information

### Is the controlled assessment task tiered?

“

No, each task is designed to be accessible by all candidates regardless of ability.

The Teacher Notes which accompany each task give indicative performance of candidates attempting low, medium and high demand investigations.

”

### What is formal and informal supervision?

“

Formal supervision is where the candidate is in 'direct sight' of the supervisor at all times and the use of resources is tightly prescribed.

Informal supervision is where questions or tasks are outlined, the use of resources is not tightly prescribed and assessable outcomes can be informed by group work. Supervision is confined to ensuring that the contribution of individual candidates is recorded accurately and that plagiarism does not take place. The supervisor can provide limited guidance to candidates but must not give undue help.

”

### What is Quality of Written Communication (QWC) and how is it assessed?

“

QWC is identified in three strands:

(i) Candidates ensure the text is legible, that spelling, punctuation and grammar are accurate, and that the meaning is clear.

(ii) Candidates select and use a form and style of writing appropriate to the purpose and to the complexity of the subject matter.

(iii) Candidates organise information clearly and coherently, using specialist vocabulary when appropriate.

Opportunities for assessing QWC(ii) and QWC(iii) are identified in the assessment criteria.

QWC(i) can be assessed throughout the task.

”



# Supporting your candidates

### Which task should they do?

“

The tasks are designed to be accessible to all candidates regardless of ability, but you may decide that certain tasks may be more appropriate than others.

Factors to consider are:

- The particular interests of the candidates.
- The availability of resources such as ICT and the internet.
- The amount of time available to do the task.
- The ability of the candidates.

”

### What sort of research can candidates do?

“

Tasks will be set to provide opportunities for candidates to collect primary and/or secondary data.

The internet may be used to collect secondary data. The candidate may want to research background information about the topic they are investigating in order to compare with published ideas or statistics. The internet or a library may be a good source of information.

”

### What information is provided for the tasks?

“

Each task is accompanied by both Teacher Notes and Student Notes and Performance Indicators. The Student Notes give specific information about the task, the possible lines of enquiry and types of data that could be collected. There is also some general information about how the task will be conducted, what needs to be produced and how it should be presented at the end.

The Teacher Notes give detailed information about each task. They give examples of the sorts of questions that would lead to low, medium and high demand investigations, and an indication of the complexity of the analysis that these would generate.

Candidates should not be given access to the Teacher Notes as these give more information about the task than the Student Notes. Please note that giving the Teacher Notes to candidates is considered to be undue help.

”

# Administering the controlled assessment

### What do I do in the planning stage?

“

The planning stage should take about 1–2 hours. During this period the teacher introduces the task and the candidates decide what they will investigate.

This stage is done in the classroom. All work produced must be kept securely between lessons.

Some candidates will need guidance in choosing the questions they will pose. This is acceptable as long as it does not constitute undue help, e.g. teachers may wish to pose questions to candidates which will encourage them to increase the depth of their investigation.

The candidates write a detailed plan of what they will do, giving reasons for the choices they make. At the end of this stage the teacher collects in and marks the work.

Feedback is given to each candidate regarding the suitability of the candidate's choices. This is recorded on the Student Record Form.

Candidates may change their initial plan in the light of the teacher's comments, but the mark for planning must NOT be changed. Candidates may be given credit for these changes in later work, especially in the evaluation, if these are explained.

Extensions and other additions to the planning which are thought of by the candidate after the planning stage must be discussed with the teacher and agreed prior to implementation. These changes can only access marks in the remaining strands. This is to help avoid plagiarism and to ensure that they are the candidate's own work. The teacher should refuse to allow any extension or deviation from the plan which the candidate cannot explain and justify.

”

## Section 2: Assessment information

### What do I do in the collecting, processing and representing stage?



Collecting the data should take about 1–3 hours. During this period the candidates follow their plan and collect the data. This may be done both inside and outside the classroom. Candidates may collect primary or secondary data individually or in groups.

For candidates collecting primary data, teachers need to ensure that they consider the data collection, and particularly the potential health and safety issues which may occur during the collection period.

For candidates collecting secondary data, teachers need to consider the access to ICT resources. This may be determined by what is available in the centre.

Teachers must ensure that the contribution of individual candidates is recorded accurately.

Processing, analysing and representing the data should take about 2–4 hours. During this stage candidates follow their plan to produce calculations and representation of the data. This may be done both inside and outside the classroom.

Candidates may use statistical software to do this. In this case the focus of the assessment will centre on the choice and reasons for the particular calculations and representations. Candidates using IT to draw graphs and diagrams must consider the scales they use.

Teachers may provide limited guidance to candidates throughout this stage, but undue help must not be given. IT help may be given, e.g. using similar graphs to show how scales may be altered.



### What do I do in the interpreting and evaluating stage?



This stage is done in the classroom. Interpreting and evaluating the data should take up to 2 hours. During this stage the candidates pull all the work together to formulate a conclusion.

Candidates must have access to all of their work. They may bring in work from outside the classroom but the teacher must ensure it relates to their initial (or modified) plan. Teachers should check the candidate's notes to ensure that the notes they are taking into the write-up are in note form and that they do not include any pre-prepared paragraphs.

Candidates work independently throughout this stage.

At the end of this period the candidates hand in all their work for marking. The Student Notes give information about how this should be done.

Teachers now assess the candidates' work using the assessment criteria for the task.



## Section 2: Assessment information

**Do all the groups need to do the controlled assessment task at the same time?**

“

No. When there is more than one teaching group, they can complete the controlled assessment at different times, and indeed stages, in the course.

”

**What happens if a candidate is absent?**

“

Candidates absent from either of the formally supervised stages, i.e. the planning stage and the interpreting and evaluating stage, must be given the opportunity to repeat the stage under formal supervision.

No specific action is required if candidates are absent from the informally supervised stage, but teachers may wish to give candidates extra class time, e.g. after school, if the candidate's access to particular resources is limited.

”

**Can candidates do the task on a computer?**

“

Yes, the assignment write-up can be word processed, provided the computer is checked prior to use for any saved information and provided it does not connect to the internet or intranet. A spellcheck may be used by candidates.

When work in a write-up session is completed this must be saved and retained securely by the centre. A printout of the controlled assessment is used for marking and standardisation.

If the task is to be word processed teachers should ensure that candidates use a clear and legible font, font size and page layout, e.g. Times New Roman, font size 12, 1½ line spacing and margins to allow for teacher comments.

”

**What do I do if I am unable to provide access to the internet?**

“

Access to the internet is not a necessary requirement for the controlled assessment component of the course. At least one of the set themes each year concentrates on the collection of primary data, and often secondary data may be collected from sources other than the internet, e.g. newspapers. Teachers are advised to direct their candidates to select themes that are suited to the ability of the candidates and their access to resources.

”

## Section 2: Assessment information

### What about candidates who qualify for extra time in examinations?

“

There are no restrictions as to the amount of time candidates should spend on their controlled assessment task. The times suggested in this document are for guidance only. Centres should allocate time commensurate to the ability of the candidates and the amount of curriculum time available.

”

### So, in summary...what are the main controls?

“

Each task is divided into three stages:

1. Planning
2. (a) Collecting data, (b) Processing, analysing and representing data
3. Interpreting and evaluating data.

Candidates are formally supervised for the first and final stages of the task, and informally supervised for the second stage. During formal supervision the candidates are not given access to the internet or intranet, and must complete their work independently.

During informal supervision candidates may work individually or in groups to collect their data. They may use the internet or intranet for their research. ICT may be used to represent and/or process data. Work should be monitored for plagiarism throughout.

”

# Submitting the controlled assessment

When does controlled assessment need to be submitted?

“

The controlled assessment is submitted in early May. A sample of tasks is taken for external moderation.

”

Does the work need to be standardised between groups?

“

Yes. Each centre is required to standardise across all the teachers marking the controlled assessment tasks. In cases where there is more than one teacher marking work, one teacher must be designated as being responsible for the final mark.

”

What happens if the Student Record Form is not signed?

“

Both the teacher and the candidate must sign the Student Record Form to authenticate the work. In accordance with the Code of Practice, any candidate unable to provide an Authentication Statement will receive zero credit for the controlled assessment component.

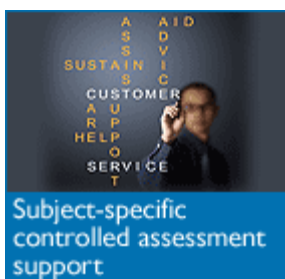
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# Supporting you with controlled assessment

Need help with controlled assessment? Our experts are on hand to support you...

Email the mathematics subject team directly at [TeachingMaths@pearson.com](mailto:TeachingMaths@pearson.com)

Call **0844 463 2931** to speak a member of the subject team for mathematics



Visit the [Mathematics Community Forum](#) to speak to other teachers, ask advice and see documents and links posted by our maths expert, Graham Cumming, and his team

Get the latest maths and statistics news, advice and reminders straight to your inbox - [sign up for email updates](#).

[Ask the Expert](#), our free email service, puts you in direct contact with a senior examiner who will help answer any subject-specific questions concerning the teaching of mathematics. They will email you within two working days of receiving your question.



You can find all the documents relating to controlled assessment below (as well as on the main [GCSE Statistics](#) page).

You should also refer to the [JCO controlled assessment guidance document](#).



