

CBA1

A Mathematical Investigation

A Guide for Junior Cycle 2022-23 Students Only



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ONLINE SUPPORT SYSTEM FOR JC & LC MATHS

What is a CBA?

- CBA = Classroom Based Assessment
- A project carried out by students during class time
- Two CBAs in Mathematics for Junior Cycle
 - CBA 1 - Mathematical Investigation (MI)
 - CBA 2 - Statistical Investigation (SI)
 - 2022-23 students must complete CBA 1 or CBA 2 or both
- Both assessed at common level



CBA 1 (MI) Overview

- Normally takes place in 2nd year
- Choose any topic on the JC maths course
- Pose a mathematical question, investigate it, solve it
- All work is undertaken during class time
- Individual or group work is allowed for CBA 1
 - Individual reports are required
- Complete investigation and report within 3 weeks



Where do I Start?

- Check out examples of a great CBA 1
 - To help you get the overall idea of what is required
- Download our “CBA Design Template”
- Now, pick an interesting maths topic
 - e.g. applied arithmetic
- Pick a sub-topic within that
 - e.g. budgets
- Formulate a specific mathematical question
 - e.g. “How much will it cost in euro to give my bedroom a makeover?”
- Begin your investigation



CBA Design Template

- CBA 1 can be presented using a range of formats
 - Recommended: use MS Word / other document type
- Use our “CBA Design Template” document to guide you
 - Open the template and start to complete it based on your own question
 - This helps to break down the task in a manageable way
 - It also helps to ensure completeness
- Don't forget to view official examples of CBA 1



Investigating and Reporting

- Complete the following sections
 - Title Page
 - Table of Contents
 - Introduction
 - Assumptions
 - Method
 - Results
 - Discussion of Results and Data
 - Conclusion
 - CBA Self-reflection
 - References



Features of Quality for CBA 1

	Yet to Meet Expectations	In Line with Expectations	Above Expectations	Exceptional
Defining the Problem Statement	Uses a given problem statement and with guidance breaks the problem down into steps	With guidance poses a problem statement, breaks the problem down into manageable steps and simplifies the problem by making assumptions, if appropriate	With limited guidance poses a problem statement and clarifies/simplifies the problem by making reasonable assumptions, where appropriate	Poses a concise problem statement and clarifies and simplifies the problem by making justified assumptions, where appropriate
Finding a Strategy or Translating the Problem to Mathematics	Uses a given strategy	Chooses an appropriate strategy to engage with the problem	Justifies the use of a suitable strategy to engage with the problem and identifies any relevant variables	Develops an efficient justified strategy and evaluates progress towards a solution where appropriate; conjectures relationship between variables where appropriate
Engaging with the Mathematics to Solve the Problem	Records some observations/data and follows some basic mathematical procedures	Records observations/data and follows suitable mathematical procedures with minor errors; graphs and/or diagrams/ words are used to provide insights into the problem and/or solution	Records observations/data systematically, suitable mathematical procedures are followed, and accurate mathematical language, symbolic notation and visual representations are used; attempts are made to generalise any observed patterns in the solution/observation	Mathematical procedures are followed with a high level of precision, and a justified answer is achieved; solution/observations are generalised and extended to other situations where appropriate
Interpreting and Reporting	Comments on any solution	Comments on the reasonableness of the solution where appropriate and makes a concrete connection to the original question, uses everyday familiar language to communicate ideas	Checks reasonableness of solution and revisits assumptions and /or strategy to iterate the process, if necessary, uses formal mathematical language to communicate ideas and identifies what worked well and what could be improved	Deductive arguments used and precise mathematical language and symbolic notation used to consolidate mathematical thinking and justify decisions and solutions; strengths and/ or weaknesses in the mathematical representation/ solution strategy are identified

Completing Your Report

- Allow roughly one page per section
- Check against the “Features of Quality” as you go along
- CBA should be between 400-600 words (excluding tables & charts)
 - Word count is indicative but not rigid



How to Get a Great Grade in CBA 1

- Choose a topic that you are interested in
- Keep your topic simple
- Use our template
 - To make investigation & reporting more manageable
 - To ensure completeness
- Check against the “Features of Quality” as you go along
- Include visual representations of data
- Use reliable sources and keep a reference list
- Get a friend or family member to review it
- When complete, do a final check and polish-up of every section



Further Resources

- Find essential CBA and AT resources at our CBA Hub!
 - Videos
 - Examples
 - Templates
 - Links to official guidelines and resources
- Go to www.themathstutor.ie/cbahub





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