

Mathematical Investigation

Junior Cycle MATHS



What is the Mathematical Investigation?

As part of the new Junior Cycle Mathematics course students present a report on a mathematical investigation at the end of 2nd Year to showcase their research and problem-solving skills.

Each student presents a 600-800 word report on their problem question. The report must show that the topic has been well-researched, display a problem solving cycle used in their investigation and have a conclusion referring back to the original question.

Students can choose to make a poster (accompanied by a 300 word report) or present a report on their investigation. The class teacher will act as examiner and students will receive a Junior Cycle Mathematics certification for their final report.

What are the best topics to choose?
Students are free to choose their own research question. The “best” questions focus on areas that students have a particular interest in, are well-researched and concisely presented. Topics can range from phenomena around them or something that interested them from studying maths. You can focus on pricing an outfit to working out the costing on building a house. **The choice is yours.**

How long should my presentation be?

Each report should be a maximum of 800 words.

Who will the examiner be?
Maths Department

How will I be graded?
Students will receive one of four awards; See **page 2** for further details.

FRIDAY, March 6TH

- ✓ Finalise research Question
- ✓ Research well underway
- ✓ Plan done on format

FRIDAY, March 13th

- ✓ Use strategies to follow the problem solving cycle
- ✓ Data collated and graphs/ charts drawn
- ✓ 1st Draft of CBA report completed.

FRIDAY, March 20th

- ✓ Redrafting completed
- ✓ Finalising report

TUESDAY, March 24th

- ✓ Report Submitted

How is the Mathematical Investigation graded?

Students will earn one of the four following awards based on their research, problem solving and presentation skills;

- ★ Exceptional
- ★ Above expectations
- ★ In Line with Expectations
- ★ Yet to Meet Expectations

We have analyzed some examples of reports and discussed the features of a good investigation and report. We will continue to work on this as we prepare for the final drafting of the reports. Students will receive a certificate stating their achievement in the Mathematical Investigation. This certificate will form part of each student's Junior Cycle Profile of Achievement.

FEATURES OF QUALITY FOR THE MATHEMATICAL INVESTIGATION

Exceptional

- ✓ The student has posed a concise problem and simplified it by making justified assumptions
- ✓ The student has developed a justified and efficient strategy and evaluated their progress
- ✓ They have used mathematical procedure with high level of precision and justified their decisions

In line with Expectations

- ✓ Posed the question and broke it down into steps making assumption if necessary.
- ✓ The student followed suitable procedure with minor errors and used graphs/diagrams/words to represent findings
- ✓ They have assessed the solution making a connection to the original question

Above Expectations

- ✓ The student posed and simplified the problem making assumptions where necessary.
- ✓ The student followed mathematical procedures and made an attempt to generalize patterns
- ✓ They have assessed their solution and revisited the assumption if necessary

Yet to Meet Expectations

- ✓ With help constructed a problem question on their chosen topic.
- ✓ Students have followed basic procedure noting observation and data
- ✓ Students commented on their solution.

WHAT CAN BE DONE AT HOME?

Students will be preparing for their Investigation mainly in maths class but can also work on it at home. It would help student preparation if they were given a chance to:

- › Discuss their research question.
- › Analyse best methods to solve their question.
- › Look at the best forms to represent their findings.
- › Parents could give feedback and help students as they draft and redraft their report.

