

COMMON ENTRANCE (CE) 13+

SUBJECT GUIDE FOR FAMILIES: MATHEMATICS

CE 13+ exams are taken by pupils as part of their entrance applications to senior independent schools for entry into Year 9. **Mathematics** is one of the compulsory core subjects assessed in CE 13+ exams, along with **English** and **science**.

This guide includes an explanation of the **CE 13+ mathematics exam structure**, what knowledge and skills are assessed, and what your child can expect from each paper. It also contains **tips and tricks for using past papers as practice resources** at home, as well as links to further support to help your family throughout your admissions journey. Let's get started!

WHAT KNOWLEDGE AND SKILLS DO CE 13+ MATHEMATICS EXAMS ASSESS?

The CE 13+ mathematics exam is designed to test pupils' ability to:

- **Understand and use numbers confidently**, making connections between multiplication and division with fractions, decimals, percentages and ratios.
- **Solve a wider range of problems**, including complex properties of numbers and arithmetic and problems demanding efficient written and mental methods of calculation.
- **Use the language of algebra as a means for solving a variety of problems.**
- **Demonstrate sophisticated knowledge of geometry and measures**, including the ability to classify complex shapes and the vocabulary needed to describe them.
- **Show fluency in written methods**, including long multiplication and division, and in working with fractions, decimals and percentages.
- **Apply mathematical knowledge in other subjects**, such as science and geography.

HOW ARE THE EXAMS STRUCTURED?

The CE 13+ maths exam is divided into three papers:

- **Calculator paper** (1 hour, 100 marks)
- **Non-calculator paper** (1 hour, 100 marks)
- **Mental Arithmetic Test (MAT)** (10 minutes, 40 questions)

The calculator and non-calculator papers can be taken at either **Foundation** or **Core** level. The Foundation and Core levels will pull from the same areas of the National Curriculum, but the Core papers will ask more challenging questions about each topic.

Your child's current school will usually decide which level your child will take after discussing it with prospective senior schools and assessing your child's ability.

All students will sit the **same mental arithmetic test**.

Pupils may also choose to sit the **Additional paper**. This paper is optional and used to assess high achievers.

Calculator paper (1 hour, 100 marks)

The calculator paper can be sat at either Foundation or Core level.

Marks are awarded for **showing the pupil's working**, so it is important that they display the steps they took to solve the problem. **This paper requires a calculator**. A simple scientific calculator is recommended (calculators with more advanced features, such as graph plotting and solving equations, are not permitted).

Non-calculator paper (1 hour, 100 marks)

The non-calculator paper can be sat at either Foundation or Core level.

Marks are awarded for **showing the pupil's working**, so it is important that they display the steps they took to solve the problem. **Calculators are not permitted**.

Mental Arithmetic Test (MAT) (10 minutes, 40 questions)

The mental arithmetic test includes 40 questions designed to challenge **mental processing skills**. **Calculators are not allowed**, and pupils are expected to work out the answer to each question in their heads.

Pupils are allowed to make notes and show their working out. However, in this paper, **additional marks will not be awarded for demonstrating working out**. The test is **10 minutes** long, so pupils will need to move along quickly.

Mathematics Additional paper (1 hour, 100 marks) - optional

The Additional paper delves deeper into the areas covered in the Core paper and includes some advanced topics. Calculators may be used, and **marks will be awarded for showing working out**.

WHAT IS THE DIFFERENCE BETWEEN EXAM PAPERS PUBLISHED BEFORE AND AFTER AUTUMN 2022?

ISEB introduced an updated specification in 2021. The first exams that followed this specification were held in Autumn 2022. For mathematics exams, the naming convention of the levels changed, so 'Level 1/Level 2/Level 3' became 'Foundation/Core/Additional'.

The naming convention for mental arithmetic stayed the same, but mental arithmetic papers from Autumn 2022 onwards **do not contain a listening component**.

Past papers from the earlier specification (for exams up until Summer 2022) remain valid and valuable practice resources for any upcoming CE 13+ mathematics exams.

You can find more detailed information regarding the mathematics specification via this link:

www.iseb.co.uk/assessments/common-entrance/mathematics.

HOW IS THE EXAM MARKED?

CE 13+ mathematics exams can be marked in two ways:

- **Internally:** The exam is marked by your child's current school and the results are sent to the senior school.
- **Externally:** The exam is marked by the senior school your child is applying to.

HOW CAN MY CHILD BEST PREPARE FOR THIS EXAM?

Pupils can prepare for their CE 13+ mathematics exam in a variety of ways, and your child's teachers will have done an excellent job in teaching the knowledge and skills that will be assessed. **Practice** and **familiarisation** with the format and structure of the exams can help build their confidence ahead of exam day.

PAST PAPERS

Past papers are the best form of practice for the CE 13+ mathematics papers, because they help pupils **familiarise** themselves with the exam format, **identify gaps** in their knowledge or skill set, and allow them to develop important exam techniques, i.e., **time management**. This preparation can help pupils feel confident and well-prepared when taking their real exam.

Our experts have compiled the following tips to help your child use CE 13+ mathematics past papers at home.

- **Use past papers as study guides:** Go through the paper with your textbook open. Use the content in the textbook to create model answers and compare them against the mark scheme.
- **Focus revision on the weaker areas:** Review the content tables in the ISEB mathematics specification and focus revision on specific areas of weakness.
- **Teach someone else:** Encourage your child to pretend to be a teacher and explain how to answer questions to you, their sibling, or even a pet. Teaching is a powerful way for students to engage with mathematics questions, as it helps them to simplify ideas and process problems on a deeper level.
- **Make it fun:** Play games with quickfire mental arithmetic questions as points. Make it fun and competitive, and keep score. You can take questions directly from mental arithmetic past papers, so answers are on hand for instant gratification when they get it right.
- **Practice a mix of difficulty levels:** Improve weak areas and test strengths by practising questions and topics at different levels.
- **Self-mark practice papers:** After practising completing a paper under timed exam conditions, we recommend that the pupil mark their own work with the mark scheme to understand their mistakes and check how to answer difficult questions in future.

You can use past papers in several different ways while practising at home. You can complete the papers under timed exam conditions or use them as an 'open book' exam and use the mark schemes to help form your answers. You can also use the papers as revision resources, and make sure you practice all the topics separately. There is a benefit to practising questions from all levels to build knowledge, no matter which exam level your child will take.

CE 13+ mathematics past papers are available on the [ISEB online shop for families](#).

FURTHER SUPPORT

We provide a hub of support resources, articles, FAQs, and more on registration and preparation for CE and CASE exams in our [CE Admissions Toolkit](#).

You can also access further information and direct support from ISEB through our [CE Support Portal](#). Access over 100 articles or raise a ticket with our customer success team for direct and bespoke support.