What to review for the AEIS mathematics test in Singapore

Understanding the AEIS mathematics assessment

The Admissions Exercise for International Students (AEIS) is the main route for foreign students seeking admission to Singapore's mainstream primary and secondary schools. The mathematics component tests more than computational ability, it evaluates how a student applies concepts in unfamiliar contexts. Because the test uses the Singapore mathematics syllabus, students who have studied elsewhere often find the style of questioning different from what they are used to. Reviewing the right topics before test day can make the difference between a confident performance and a stressful one.

Arithmetic and number sense

Arithmetic forms the backbone of the AEIS mathematics paper. Students should be comfortable with the four basic operations (addition, subtraction, multiplication, division) applied to whole numbers, decimals and fractions. Speed and accuracy in mental calculation matter because the test has a time limit, and careless errors on simple sums cost marks. A common weakness is the order of operations, knowing when to multiply before adding, and how brackets change the calculation. Reviewing these rules with worked examples helps cement the habit of checking each step.

Beyond basic sums, students need to handle factors, multiples and prime numbers. These concepts appear in questions on divisibility and in problems that require breaking numbers into parts. The ability to find the lowest common multiple (LCM) or the highest common factor (HCF) quickly is useful for solving fraction and ratio questions later in the paper. Practice with these topics builds fluency that carries into more complex problem solving.

Fractions, decimals and percentages

The AEIS test regularly includes questions that require converting between fractions, decimals and percentages. A student might need to express a fraction as a percentage, or compare two quantities given in different forms. The key is understanding that these three representations are just different ways of describing the same relationship. For example, a question on discounts or profit margins often mixes percentages with fractions, and a student who can switch between them without hesitation will work faster and make fewer mistakes.

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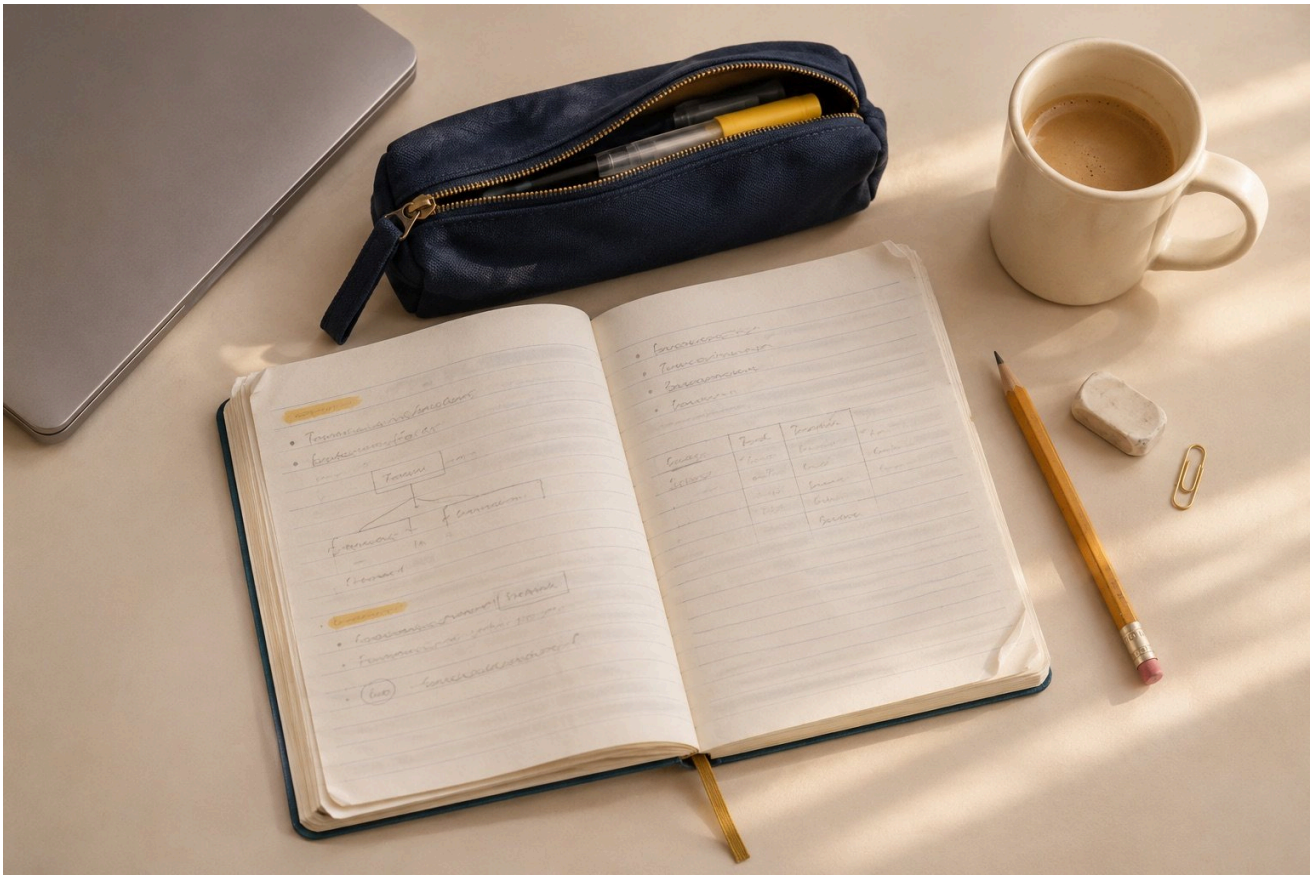
Word problems that involve fractions and percentages also test a student's ability to identify what the "whole" is. Many errors happen when a student applies a fraction to the wrong base amount. Reviewing problems where the whole changes (for instance, a price after a discount is then reduced again) teaches students to read carefully and to check what each percentage refers to. Ratio problems extend this idea, they ask for comparisons between parts and the whole, and the same careful reading is required.



Ratio and proportion

Ratio questions appear frequently in the AEIS mathematics paper, often combined with fractions or percentages. A typical question might give a ratio and ask for the value of one part when the total is known, or it might require finding the change in a ratio after an amount is added or removed. These questions test a student's ability to set up an equation from a word problem and solve it systematically.

Proportion questions, including direct and inverse proportion, also appear. Students should understand that if one quantity doubles, the other might double (direct proportion) or halve (inverse proportion). The AEIS test does not expect formal definitions, but it does expect students to recognise the relationship and calculate correctly. Reviewing real-world examples, such as the cost of items in a set or the time needed for a certain number of workers to finish a job, makes these concepts concrete and easier to recall under test conditions.

Geometry and measurement

Geometry in the AEIS test covers properties of shapes, area and perimeter, volume of solids, and angle calculations. Students should know the formulas for area and perimeter of squares, rectangles, triangles and circles, and for volume of cubes, rectangular prisms and cylinders. The test often presents these in problems that require multiple steps, for instance, finding the area of a composite shape by adding or subtracting simpler shapes.

United Ceres College is also on Twitter.

Angle work includes complementary, supplementary and vertically opposite angles, as well as angles in triangles and quadrilaterals. A common question gives a diagram with a few angles marked and asks for the missing one. The trick is to use the relationships between angles without measuring, the answer comes from reasoning, not from the diagram's scale. Practising with a variety of diagrams trains a student to spot which relationship applies.

For measurement, students need to convert between units (metres to centimetres, litres to millilitres) and to apply these conversions in problems. The AEIS test does not rely on memorised conversion factors, it provides them if needed, but fluency in using them saves time. A student who practises converting units as part of everyday problems will find these questions straightforward.

Word problems and problem-solving strategies

The AEIS mathematics paper is known for its emphasis on word problems. These questions present a scenario and ask the student to extract the relevant numbers, decide on an operation, and carry out the calculation. The difficulty often lies not in the arithmetic but in understanding what the problem is asking. A student who can restate the problem in simpler terms and identify the key relationship will have a clear path to the solution.



One effective strategy is to draw a diagram or a table. For problems involving distance, speed and time, a simple sketch showing the journey can clarify what is given and what is missing. For ratio problems, drawing a bar model (common in Singapore mathematics) helps visualise the parts. Students should also practise checking whether an answer makes sense, if a calculation gives a negative value for a length, or a speed that seems too high or too low, it is worth re-reading the problem.

Mental calculation and estimation

The AEIS test includes a section where calculators are not allowed. In this part, mental calculation and estimation are essential. Students should be able to add and subtract three-digit numbers in their heads, multiply and divide by single-digit numbers, and work with simple fractions. Estimation, rounding numbers to the nearest ten or hundred and doing a quick approximate calculation, helps catch obvious errors and provides a check on the final answer.

Practising mental calculation daily, even for a few minutes, builds speed. Simple drills, such as adding prices from a shopping list or working out change mentally, make the skill automatic. On test day, this fluency frees up mental energy for the harder problems.

Preparing with the right resources

Students preparing for the AEIS mathematics test can benefit from working through past papers and topic-specific worksheets. These resources show the style of questioning and the level of difficulty expected. Many students also attend structured revision classes. United Ceres College, a private college in central Singapore, offers preparatory programmes for the AEIS examination. Its mathematics tuition covers the topics listed here, with an emphasis on building problem-solving skills and confidence. The college provides face-to-face and e-Learning options, allowing students to choose a format that suits their schedule.

Final review checklist

In the days before the test, a focused review can help consolidate knowledge. Here is a short checklist of areas to revisit:



- Arithmetic: order of operations, factors and multiples, mental calculation with whole numbers and decimals.
- Fractions, decimals and percentages: converting between forms, finding a percentage of a quantity, solving word problems with mixed representations.
- Ratio and proportion: setting up ratios from word problems, finding missing parts, handling direct and inverse proportion.

- Geometry: formulas for area, perimeter and volume; angle relationships; composite shapes.
- Problem-solving strategies: restating the problem, drawing diagrams, checking answers for reasonableness.

Reviewing each topic with a few practice problems ensures that the steps are fresh and the common pitfalls are remembered. On the day of the test, a clear mind and a methodical approach are as important as the knowledge itself.

For students who want structured guidance, United Ceres College, located at 37 Middle Rd, #05-00, Singapore 188946, can be contacted at +65 8699 3609 for enquiries about its preparatory programmes.