



LC HL MATHS

PAPER 2 FOCUS PROGRAM

+353 85 8457951
www.skjeducation.co
steven@skjeducation.com

1 Overview of 8-week Paper 2 Focus Program

LC HL Maths - Paper 2 Focus Program

Does geometry, trigonometry, or statistics feel like a foreign language? This 8-week Paper 2 Focus Program is specifically designed to transform confusion into mastery and anxiety into exam confidence. We don't just teach you what to learn - we teach you how to think like a mathematician. Through a science-based metacognition approach, you'll learn to visualise spatial problems, interpret statistical data, and develop proven strategies for tackling even the most complex Paper 2 questions. This isn't about memorising theorems; it's about building genuine understanding that lasts. In just 8 weeks, you'll gain the geometric intuition, statistical skills, and exam techniques needed to excel in Paper 2. Join hundreds of students who have already unlocked their maths potential and are now achieving grades they never thought possible. Your transformation starts here.

Here are links to extra questions and resources on StudyClix for this 8-week program, should you wish to use them.

Links	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Topic	Coordinate Geometry	Geometric Theorems	Trigonometry	Probability	Statistics	Distributions	Hypothesis Testing	Paper 2 Review

The program is strategically sequenced to build connections between geometry, trigonometry, and statistics, creating a cohesive understanding of applied mathematics.

- Block 1 (Weeks 1-4): Spatial Reasoning & Theoretical Foundations.**
Master the language of space and form through coordinate geometry, geometric theorems, and trigonometric principles, building a rigorous foundation for proof and application.
- Block 2 (Weeks 5-8): Data, Uncertainty, & Synthesis.** Learn the language of data and chance, progressing from descriptive statistics to powerful inferential techniques, culminating in the ability to perform and interpret a full statistical investigation.
- Interleaved Revision:** From Week 2 onwards, our spiral curriculum ensures constant revisiting of core ideas from previous weeks. This deliberate design strengthens memory, deepens understanding, and trains you to integrate concepts—a critical skill for the multi-faceted questions on Paper 2.

2 Sample Study Plan

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Review Key Terms & LO's. Watch video (30 mins)	Start Ex. Worksheet (60 mins)	Finish Ex. Work Sheet, Correct Work sheet. (75 mins)	Online Lesson (60 mins)	Error Analysis Exercise (40 mins)	Exam Q Assessment (60 mins)	Self-Correct & Prep Day (30 mins)

3 Weekly Study Resources

1. **Key Terms:** Key vocabulary, definitions and formulae required for the worksheets (i.e., a cheat sheet/quick guide to this topic).
2. **Learning Objectives & Indicative Content (aligned LC HL Maths curriculum & specification):** Clear, quantifiable, achievable **goals** for the coming week.
3. **Exercise Worksheet:** Your main learning tool. It contains clear notes, worked examples, and key questions to solidify your understanding. This can be used for 1-4 study sessions in a given week (takes 90-120 minutes to complete).
4. ***Students have an online lesson after the exercise worksheet is completed***
5. **Error-Based Analysis Exercise:** A unique exercise where you'll find and fix common mistakes, training yourself to think like an examiner.
6. **Exam Question Assessment:** A short exam-style test to check your progress and get comfortable with the format of the real thing.
7. **Self-Correction & Progress Tracking Protocol:** see below.

4 Self-Correction & Progress Tracking Protocol

(This is the **MOST IMPORTANT task of the week** – complete this on Sunday, then immediately plan the following week's study to **guarantee consistency**).

1. **Mark your work.** Use a different colour pen.
2. **For each question, categorise your result:**
 - **Fluent:** I got it right and knew why.
 - **Lucky:** I got it right but was guessing/doubtful. I could not fully explain why this is the answer/how I got it.
 - **Error:** I got it wrong.
3. **For each Error, complete this sentence:**

"The root cause of this was: I _____."
(e.g., "I confused the sine and cosine rules," or "I forgot to check assumptions for hypothesis testing.")
4. **For each Lucky answer, mark with a highlighter for later revision tests.**
5. **Action Plan:** Based on your analysis, what is **one specific thing** you will do before next week's lesson? (e.g., "Create flashcards for geometric theorems," "Redo the probability tree diagrams," "Watch a video on calculating standard deviation").
6. **Confidence Rating:** On a scale of 1-5, how confident do you now feel with this week's core concepts? (1 = Not at all, 5 = Rock Solid). Go through every Learning Objective and rank them. Continue this at the end of every week.

5 Why This System Works

- **Smarter Learning, Not More Learning:** My materials are designed using proven learning science to help you understand and retain information more effectively.
- **Build Confidence Through Mastery:** Start with the absolute essentials, ensuring you have a rock-solid foundation before moving on. No gaps, no confusion. Ask as many questions as you can.
- **You Learn How to Learn:** This program will teach you how to review your work, spot your own mistakes, and identify what you need to focus on. This is a skill that helps you in every walk of life.
- **Focus on Weaknesses:** By directing most of your time to analysing mistakes and revising difficult topics, you are forcing your brain to grow rapidly.

6 Weekly Learning Objectives

Week 1: Coordinate Geometry

- **1.1:** Define and represent points on the coordinate plane.
- **1.2:** Derive, write, and graph the equation of a line (including slope) and a circle.
- **1.3:** Apply the distance, slope, and dividing a line in a ratio formulae.
- **1.4:** Find equations of parallel and perpendicular lines.
- **1.5:** Calculate the perpendicular distance from a point to a line and the area of a triangle.
- **1.6:** Derive the equation of a tangent to a circle and determine if circles touch internally/externally.

Week 2: Geometric Theorems

- **2.1:** Define, analyse, and prove required geometric axioms, theorems, and corollaries.
- **2.2:** Solve problems using length, area, and volume formulae for 2D and 3D shapes.
- **2.3:** Understand and apply the effect of enlargements and scale factors on area and volume.
- **2.4:** Analyse and apply principles of geometry to solve real-world problems.

Week 3: Trigonometry: Rules, Functions & Identities

- **3.1:** Apply Pythagoras' Theorem and trigonometric ratios (SOH CAH TOA) in right-angled triangles.
- **3.2:** Apply the Sine and Cosine Rules to find unknown sides and angles in any triangle.
- **3.3:** Define, analyse, and evaluate sine, cosine, and tangent functions (graphical representation, period, amplitude).

- **3.4:** Identify, derive, and apply fundamental trigonometric identities.
- **3.5:** Utilise the unit circle to define trigonometric functions and derive identities.

Week 4: Probability Theory & Random Variables

- **4.1:** Define the fundamental principles and laws of probability.
- **4.2:** Identify sample spaces and construct/analyse tree diagrams.
- **4.3:** Apply set theory concepts (union, intersection, complement) to probability.
- **4.4:** Differentiate between independent and mutually exclusive events.
- **4.5:** Calculate and interpret conditional probabilities.
- **4.6:** Define and classify random variables (discrete/continuous) and calculate expectation and variance.

****Students will have a "Reading Week" between Weeks 4 and 5.****

Week 5: Data Handling & Descriptive Statistics

- **5.1:** Define and differentiate between sampling methods and data types.
- **5.2:** Organise and present data using tabulation and graphical representations (bar graphs, histograms, pie charts, scatter plots).
- **5.3:** Calculate and interpret measures of central tendency (mean, median, mode).
- **5.4:** Calculate and interpret measures of spread (range, variance, standard deviation).
- **5.5:** Interpret scatter plots and analyse correlation.

Week 6: Distributions & Introduction to Inference

- **6.1:** Define and analyse normal distributions, calculating probabilities using z-scores.
- **6.2:** Calculate probabilities using binomial and Poisson distributions.
- **6.3:** Calculate point estimates (mean, proportion) for population parameters.
- **6.4:** Explain the concept of the sampling distribution of the mean and the Central Limit Theorem.
- **6.5:** Construct and interpret confidence intervals for a population mean.

Week 7: Hypothesis Testing & Statistical Errors

- **7.1:** Explain the purpose of hypothesis testing.
- **7.2:** Formulate null and alternative hypotheses.
- **7.3:** Perform a full hypothesis test for a population mean (z-test).
- **7.4:** Identify and differentiate between Type I and Type II errors.
- **7.5:** Analyse the relationship between sample size, margin of error, and accuracy.

Week 8: Paper 2 Review

- **8.1:** Synthesise geometry and trigonometry to solve complex, multi-step problems.
- **8.2:** Synthesise probability and statistics to perform and interpret a full statistical analysis.
- **8.3:** Targeted practice on past exam questions, focusing on the structure of long questions.