

KS3 – Corrective Mathematics (Direct Instruction)

Subject Intent

Our aim is to deliver an appropriately ambitious curriculum that secures subject knowledge through depth, breadth, and ambition for all pupils. Our carefully chosen curriculum provides atomisation, careful sequencing, alignment of content, instruction, and assessment. Pupils learn to become fluent in the fundamentals of mathematics to access complex problems and develop conceptual understanding. Pupils apply their understanding to routine and non-routine problems with increasing sophistication. We fundamentally believe in mastering and building a foundation of Mathematics to allow more complex mathematics to be taught and learnt with fidelity, accuracy, and pace.

Corrective Mathematics Subject Narrative

Pupils in the Corrective Mathematics programme learn addition, subtraction, and multiplication in the first academic year. If pupils complete the three modules, then they move onto the division module. Pupils relearn how to apply the four operations after being identified for the programme. Pupils then move onto the Direct Instruction programme, Essentials for Algebra. Remaining topics not identified in Essentials for Algebra are taught as resources created by the Athena Textbook designed by the National Lead team.

Year 7 – Please click [here](#) to view the curriculum map for Year 7 Corrective Mathematics

Year 8 – Please click [here](#) to view the curriculum map for Year 8 Corrective Mathematics

What is Direct Instruction (DI)?

Direct Instruction (DI) is a model for teaching that emphasises well-developed and carefully planned lessons designed around small learning increments and clearly defined and prescribed teaching tasks. It is based on the theory that clear instruction eliminating misinterpretations can greatly improve and accelerate learning.

Its creators, Siegfried Engelmann and Dr. Wesley Becker, and their colleagues believe and have proved, that correctly applied DI can improve academic performance as well as certain affective behaviours.

Direct Instruction operates on five key philosophical principles:

- All children can be taught.

- All children can improve academically and in terms of self-image.
- All teachers can succeed if provided with adequate training and materials.
- Low performers and disadvantaged learners must be taught at a faster rate than typically occurs if they are to catch up to their higher-performing peers.
- All details of instruction must be controlled to minimise the chance of students' misinterpreting the information being taught and to maximise the reinforcing effect of instruction.

Why does DI work?

There are three main features of DI that ensure students learn faster and more efficiently than any other program or technique available:

1 – Placement Testing

Students are placed in classes at their skill level by undertaking a placement test to establish their starting point that establishes which skills they have already mastered and which ones they need to work on. From this, students are grouped together with other students needing to work on the same skills.

2 – Teaching to Mastery

The program's structure is designed to ensure mastery of the content.

The program is organised so that skills are introduced gradually, giving children a chance to learn those skills and apply them before being required to learn another new set of skills. Only 10% of each lesson is new material. The remaining 90% of each lesson's content is a review and application of skills students have already learned but need to practise to master. Skills and concepts are taught in isolation and then integrated with other skills into more sophisticated, higher-level applications. All details of the instruction are controlled to minimise the chance of students' misinterpreting the information being taught and to maximise the reinforcing effect of instruction.

3 – Research and Field Testing.

Programs are field tested and revised before publication.

DI programs are unique in the way they are written and revised before publication. All DI programs are field tested with real students and revised based on those tests before they are ever published. This means that the program your student is receiving has already been proven to work.

Our commitment

We value the importance of education for everyone, irrespective of their background. The underpinning philosophy of Direct Instruction is that all children can learn, and it is the responsibility of educators to make sure this happens without blame or prejudice against the student. Our mission is to **ensure that by the end of the third year of the DI curriculum, all children are working at their age-expected levels and can access a full curriculum.** Therefore, using comprehensive placement testing to identify students who arrive in Key Stage 3 below the age expected levels, these students will follow the structured Direct Instruction programme. Consequently, delivering Direct Instruction programmes to the identified students will in turn accelerate their learning to reach our targets and allow the students to flourish in the later stages of their education and beyond.