

A level Pure Mathematics *by David Miles*

photocopiable activities to enhance and consolidate understanding

Book Review by Sue Childs

This is one of those books that every sixth form maths teacher should have on their bookshelf. Twenty-three photocopiable activities of the ‘Tarsia’ matching style covering a wide range of topics from the **AS and A level Pure Mathematics Syllabus**. With typical suggested durations between 30 and 80 mins these are ideal lesson ready activities suitable for both individuals and groups.

The earlier activities such as ‘**Equation of a Circle Unknown**’, ‘**Simultaneous Equations Loop**’ and ‘**Surds Triangle**’ are straightforward with plenty of confidence building practice around a single idea. Perfect for embedding a new AS topic, these could also be usefully used as stretching challenges for higher GCSE candidates or in a sixth form introduction/transition course.

As the activities progress the topics become more challenging expanding the breadth of ideas while providing plenty of scaffolded instructions. ‘**Tangents and Normal Trios**’ combines polynomial differentiation with the binomial expansion and simultaneous equations and ‘**Stationary Points Match**’ follows on with identifying and classifying maximums, minimums and points of inflection. ‘**Logarithms and indices duck**’ help untangle the tricky topic of logarithms, bases and indices. Not only providing practice all these activities help embed mathematical language and notation into student learning.

Later activities are more complex, no longer just a simple matching but requiring evaluation and analysis, finding missing information, odd ones out or ordering solutions. Topics include ‘**Trigonometric Equations**’, ‘**Implicit Differentiation**’, ‘**Newton Raphson Dyads**’ through methods of integration to the final ‘**Differential Equations Trapezium**’.

Once completed the activities can be used as revision sheets or more interestingly as starting points for further discussion and development. ‘Find another..’ ‘What is the same what is different?’ The only limit is the teacher’s or student’s imagination.

So, a seemingly straightforward book with boundless possibilities suitable for both teachers new to sixth form and for those with years of experience. A true set of low threshold high ceiling activities, adaptable and stretching for all sixth form mathematicians.