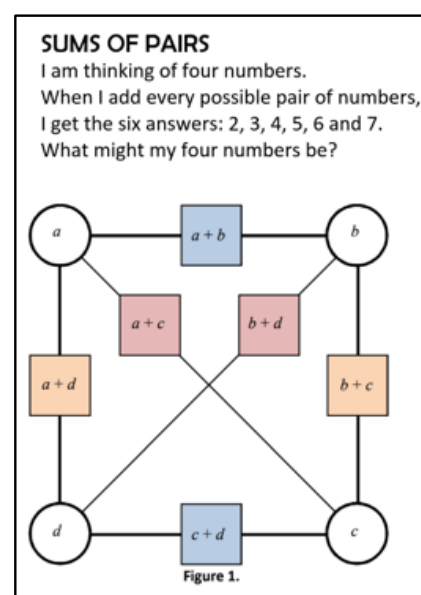


## Creative Approaches to Developing Mathematics Fluency in Secondary Classrooms

This series of three full-day workshops will showcase ways of helping students to develop fluency in important mathematical processes without subjecting them to repetitive, tedious exercises. Many mathematics teachers use exercises reluctantly, because they know that students need confident facility with important techniques, but they don't want to bore them with 'drill and kill' exercises.

My recent research suggests that rich, problem-solving tasks (which I call 'mathematical etudes' – see [www.mathematicaletudes.com](http://www.mathematicaletudes.com)), if well designed, can be just as effective as exercises for developing fluency with procedures, while at the same time giving students the opportunity to think creatively and build their conceptual understanding. We will try some etudes ourselves and discuss how they can be used effectively in the classroom. We will also consider some design principles for creating mathematical etudes.



### Session details:

Session	Date	Time	Focus
1	17 October 2018	9 am – 3.00 pm	Etudes and exercises compared <ul style="list-style-type: none"> <li>• What is a mathematical etude and how does it differ from a set of traditional exercises.</li> <li>• How can etudes be used effectively in the classroom?</li> </ul>
2	10 December 2018		Fluency in the mathematics classroom <ul style="list-style-type: none"> <li>• Share experiences from trying out etudes with your classes.</li> <li>• Draw together principles for designing etudes that are naturally self-differentiating and that are low-entry-high-ceiling.</li> </ul>
3	13 February 2019		A departmental approach to fluency <ul style="list-style-type: none"> <li>• Embedding etudes into a department's scheme of learning as a consistent approach across classes and year groups.</li> <li>• Designing etudes for all ages from Year 7 to sixth form.</li> <li>• Balancing etudes with other task genres.</li> </ul>

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