

Lesson Account 46 – Arithmetic Sequences

Name	Organisation	Age/ability range
Rob Kinnersley	Shrewsbury Sixth Form College	Year 1 Sixth Form age 16/17. Mixed ability for this course (AS Mathematics)

How was the session/task introduced?

Students had already met examples of, and notation for, arithmetic sequences. They were given any two terms of an arithmetic sequence and told which terms they were, then asked to work out the first term and the common difference (and therefore write out the sequence for the first few terms).

How was the session/task sustained?

As above, in pairs they were given for example – 3rd term is 13, 8th term is 32, what's the 1st term; 5th term is 10, 12th term is 1, what's the 20th term etc....

The various methods that students devised were then reviewed and similarities and differences in the methods were discussed e.g. some students used an informal approach whilst others devised an algebraic approach.

How was the session/task concluded?

Students setting their own problems of this type and solving them using simultaneous equations to work out the first term and the common difference.

What were the critical moments?

Thinking informally led to desire for a more formal (algebraic) method. Some argument between pairs of students about best method for solution.

What mathematics was learnt? (on plan and off plan) and what is the evidence of learning?

Algebra is an extremely powerful tool for solving problems. Ability to solve problems involving two separate terms of an AP (and later similar problems for GPs) algebraically – and how this related to the informal methods used.

How was that mathematics learnt?

Through discussion in pairs, students articulating their thoughts to the whole class. Through forming algebraic relationships and solving problems.

Other memorable outcomes

Weakest students in the group demonstrably improved their algebraic fluency/skills for problem solving. Gave fantastic insight into how different students viewed the problem. Some students still preferred “informal” methods but I tried not to worry about this.

Resources

Just pen and paper in this case.

I'm sure mini-whiteboards and excel could be used.