

32. Practice Activity: Mechanical vs. Flexible

Imagine the following experiment. Two groups of students are set the same task – they have to throw a rolled-up ball of paper into a bin from three yards. They all know they have to practise and that they will be tested on the number of successful throws they achieve at the end of the practice period. Here's the interesting bit: group 1 are told to repeat three yard throws over and over again, and group 2 are made to alternate between two yard and four yard throws over and over again.

One group is employing mechanical practice; they're doing the same thing over and over again. The second group mix up their practice just a little. The first group might quickly get better at three yard throws, of course. But what happens if the position of the bin is adjusted to three-and-a-half yards? Or four yards? Now the second group are in a better position because they've practised differently – more flexibly.

What Does This Mean for A Level Study?

The throws are like exam questions. Some students prepare for 'standard questions' only. They're great at these predictable questions – like three yard throws. But if the exam asks something slightly different, they're in trouble. They can have nightmare exam experiences. They will often say, 'The question was slightly different! It totally messed with my concentration! I didn't know what to do!' Students who practise flexibly start to think flexibly. They will say, 'The questions were a bit weird. Eventually I worked out what I needed to do though.'

So make sure you mix it up in practice. Researchers call this 'interleaved practice'; practice that forces you to switch tasks regularly. It's slower to begin with, but the long-term benefits are that you become flexible in your thinking, and you can handle unexpected questions.

So why not challenge yourself to:

- » Seek out the weirdest questions that have ever come up and try them.
- » Create strange questions.
- » Visit the website of a different exam board and try their questions instead.

Record your observations here:

Subject: Topic area:

Standard exam question	Harder variation of standard	Weirdest exam question ever!
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Now you can stay flexible in your practice!

Final Thoughts

These weird, unpredictable exam questions are sometimes referred to as 'curveballs'. They're disorientating and can derail even confident students. But challenging, flexible practice will mean you can cope.

We always fondly remember an ace mathematician we worked with. On the day of his final exam he was supremely confident – convinced there wasn't a curveball he hadn't already seen. And he was right; he didn't drop a single mark. Afterwards, when we interviewed him, it turned out the exam he'd just taken was the fifteenth paper he'd completed under timed conditions in the fortnight before the exam.

You too can be that well prepared!