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Poyi's skill adds up to top success in chess challenge

By Katie Macleod

Every person plays to their strengths, but Poyi Law plays his to perfection: the 16-year-old Nicolson Institute student is a truly amazing mathematician.

Despite only starting his fifth year of secondary school this month, Poyi has already achieved Higher Maths - he skipped the Standard Grade - and sat his Advanced Higher qualification earlier this summer.

Poyi has won countless academic prizes and certificates, not only for mathematics (though there are many), but also Computing, Physics and Technical Studies. He is a regular entrant in the Leeds Maths University Challenge, recently beat a Chess Grandmaster at her own game, and is currently preparing for the pre-entry exam at Cambridge University.

"I noticed I was quite good at basic arithmetic in Primary Three; I just thought about it more than most people then," says Poyi of the first time he began to notice his interest and ability in maths. He adds that "it was nothing special" - an addition that is indicative of his down-to-earth, unassuming nature.

His mother Winnie remembers him scribbling numbers on a kitchen blackboard as a toddler, but at the time she just thought he was lucky. It wasn't until Poyi won the Stornoway Primary Maths Prize in Primary 7 - as well as the title of Proxime Accessit - that Winnie Law realised just how clever her only son was. "I didn't realise, I really didn't," she says.

Poyi's interest in mathematics has been "quite consistent" throughout the years, although it really began to develop after the discovery early on in Secondary Three that he was capable of much more advanced work than the Standard Grade curriculum had to offer.

Feeling inquisitive on the topic of powers and numbers one day, Poyi decided to do some online research into logarithms. It was later, while contemplating a Standard Grade textbook problem on

the topic of compound interest, and wondering how to achieve an accurate answer, that Poyi remembered his research. His solution was to use what he had learned about logarithms, thereby solving a simple problem with a complex method - and instigating his instant transition to Higher Maths.

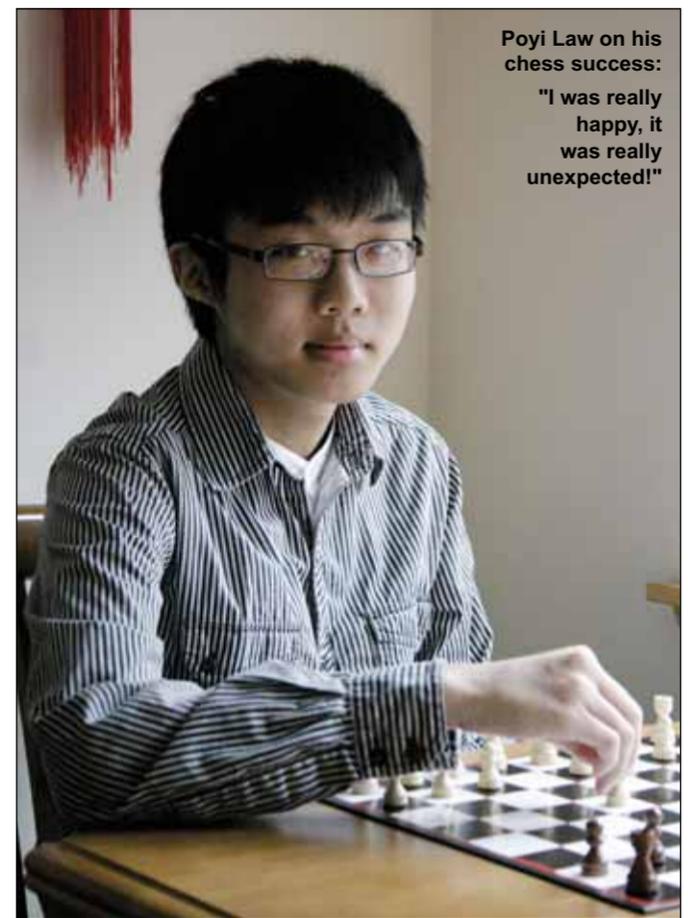
"Poyi was always the most able student in the year," says Principal Teacher of Maths Angus Mackay. "It was in third year, when he started using logs to solve percentage problems - that doesn't come into the syllabus until fifth year - that was when we decided to really push him. He's extremely gifted, he's got a real passion for it and he's a pleasure to work with."

"That was a really satisfying moment - when I was learning a higher concept than I should be, and finding it useful," says Poyi with a smile. It was on entering Higher Maths that he really began to see the application of what he was learning, from the Maths Department to the Physics lab and on to the Computing classroom.

"Before I didn't go into detail, I didn't know the specifics of logarithms, just the details. What got me looking at things in detail was starting calculus, that was the turning point for me." An amusing coincidence, given that in calculus you calculate the slope of the curves, where a turning point is an important concept.

"With calculus, optimisation and physics came up, finding the area of curved shapes, all of that was in one topic," says Poyi. "I realised that if I looked deeply enough into something I could get very good results. It was the start of my personal research into mathematics."

Since sitting his Advanced Higher in the subject, Poyi has taken his research even further and started studying university level mathematics. "Knowledge of a topic in maths is understanding all the little bits," he says, as he explains the ins and outs of his interests. First he takes on Topology, which involves looking at properties of a space which are preserved through stretching but not tearing, and then there is Group Theory, which examines the actions that preserve the symmetry of objects such as shapes: "I've



Poyi Law on his chess success:

"I was really happy, it was really unexpected!"

been looking into things like that, really abstract ideas."

At university - where he hopes to enrol a year early - Poyi is planning to focus on Pure, as opposed to Applied, Mathematics. As he explains, "Applied Mathematics you can use in the real world to build buildings or lift rockets. Pure mathematics is not necessarily applied. You have some idea, some intuitions, and you develop on that."

But Poyi isn't just magic at maths - he's an incredible chess player too. Although he knew the rules of the game for a long time, he only started playing seriously a little over a year ago, when he joined the after-school Chess Club run by Modern Languages teacher Isabel Robertson. "It's very abstract; there's no luck at all," says Poyi.

When Scottish Chess Grandmaster Keti Arakhamia-Grant landed on Lewis in June, a wide range of chess fans turned out to try their hand at a game against her. Among them was Poyi, at the time "very doubtful" that he would have any success against such a seasoned expert. He wasn't left in doubt for long.

Winnie (who was too nervous to watch for most of the tournament) noticed that Keti was standing in front of Poyi for longer than the rest; that was when the people present began to realise that Poyi was in with a chance of winning. In the end, he was one of only two islanders who beat the chess champion: "I was really happy, it was really unexpected!"

"For everyone there it was a huge thing, to play a Grandmaster - you don't get that kind of opportunity, it was fabulous," says Isabel of the June event. "But for Poyi to beat her, I was delighted, his mum and I were both delighted."

For now, Poyi is focusing on the future, primarily the pre-entry exam for Cambridge. On their recommendation, this year he will be teaching himself Advanced Higher Mechanics, for which the Nicolson Institute are providing learning materials. He will also be continuing with the chess club and euphonium lessons, as well as Physics, Computing, and Music; it's no wonder that Winnie describes her son as "very focused."

When asked, finally, what it is he enjoys about the subject he excels in, Poyi eloquently elaborates on his enthusiasm for mathematics. "Basically mathematics is like having a massive sandbox and all you have to do is follow some rules. But it's more than that, because usually the rules end up being intuitive and useful," he explains. "You can mess around with algebra all you want, but the end result is still going to be something useful. But it doesn't have to be useful; you can build your own sandcastle in the sandbox, and just look at it and say, I made that. And sometimes, what you make can be compared to great works of art."

His interests might be abstract, but his spectacular skills certainly are not: for Poyi Law, the only way is up.

The main gallery at An Lanntair on Saturday June 1 saw a host of local challengers line up to take on Ketevan Revazovna Arakhamia-Grant, the Scottish Grandmaster of chess who was born in Georgia in the former USSR. She is pictured almost opposite Poyi Law, right

