

March 2016

DUDLEY **Insight**

THE MATHEMATICS CHALLENGE GCSE RESITS



This is one of a series of papers aimed at providing our stakeholders, both internal and external, with up-to-the-minute information on how we are strategically responding to local and national challenges. The papers may be of interest to many relevant stakeholders including parents, employers and the Local Enterprise Partnership.

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CONTEXT

As highlighted in the October 2014 Insight, the college takes its responsibility to raise the mathematics skills and aspirations of young people seriously. The college has delivered a range of mathematics qualifications since 2009 including Key Skills Application of Number, Basic Skills Numeracy and more recently Functional Skills. Mathematics has formed a central part of our programmes of study since their inception, with more than 1,400 learners enrolling on mathematics qualifications each year.

A NEW CHALLENGE

In 2015, the government sought to address the national issue of under-achievement in mathematics by introducing a new policy. From September 2015, any learner enrolling at college who achieved a grade D in GCSE mathematics must study and resit their mathematics GCSE examination. This new policy forms part of the conditions of funding for all 16-18 year olds. This has created a series of challenges for the FE sector including Dudley College.



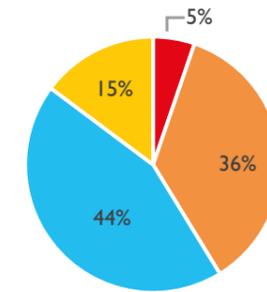
INITIAL ASSESSMENT OF LEARNERS

When learners enrol at Dudley College they complete initial and diagnostic tests to assess their levels of numeracy.

These tests assess learners for mathematics across five levels: entry level 1, entry level 2, entry level 3, level 1 and level 2. Level 2 is broadly-rated as equivalent to the achievement of a GCSE grade D. Therefore to successfully achieve a grade A* - C in a GCSE resit, we would expect learners to achieve a level 2 in their initial assessment.

The following tables demonstrate that a very small proportion of the learners assessed at the beginning of this year achieved level 2. Skills assessments demonstrate a higher proportion of learners' skills being below level 1 than we had initially anticipated. In 2014/15 these learners would have been enrolled onto an appropriate level of Functional Skills mathematics to enable them to develop their underpinning skills.

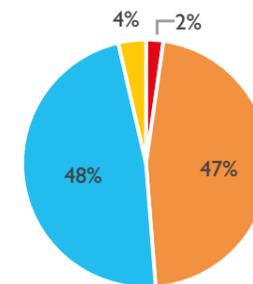
FIGURE 1: MATHEMATICS INITIAL ASSESSMENT RESULTS - WHOLE COLLEGE



- Mathematics entry level 2
- Mathematics entry level 3
- Mathematics level 1
- Mathematics level 2

The results of Initial Assessment demonstrate that 85% of all learners have mathematics skills which are below level 2 when they join the college.

FIGURE 2: MATHEMATICS INITIAL ASSESSMENT RESULTS D GRADE LEARNERS



- Mathematics entry level 2
- Mathematics entry level 3
- Mathematics level 1
- Mathematics level 2

When we analyse the results of Initial Assessment of learners enrolling who achieved a grade D in GCSE mathematics, the results demonstrate a tiny proportion of learners have skills at level 2, just 4%. With 96% of learners having mathematics skills below level 2 when they join us.

As a result government policy is challenging the college to enter learners on GCSE resits who do not demonstrate the mathematics skills or the motivation to attend a subject they have failed in previously. This represents a significant challenge to the college and the learners.

ATTENDANCE

Whilst we are working relentlessly to emphasise the importance of attendance at GCSE mathematics classes, many learners remain reluctant to attend a subject which they have experienced failure in previously and which they have not chosen to study.

The college staff are working hard with individual learners on motivation and improving their attendance, but when a student's performance in all other elements of their study is good, it is difficult to enforce any real sanctions. Compared to current college attendance of 88%, the current attendance to GCSE mathematics is 79% with 19% of absences being unauthorised. This could result in learners being entered for an examination for which they are not fully-prepared.



OUR RESPONSE



We have proactively taken a number of steps to address the GCSE mathematics challenge. There has been a real 'hearts and minds' challenge with learners and some staff, in understanding the importance of mathematics. We have tackled this in a number of ways:

STAFF

- Investment in new specialist GCSE mathematics teachers.
- Development of existing mathematics staff to deliver GCSE.
- Mathematics Curriculum Manager attends staff induction for all new staff.
- Performance targets for GCSE attendance and success set for all managers and personal tutors.

LEARNERS

- The Principal sets out the expectations with learners about mathematics as part of full-time induction.
- College purchased a mathematics equipment set for all learners completing GCSE mathematics retakes.
- Attendance to GCSE is monitored and followed up by the GCSE team and personal tutors.

DELIVERY

Significant skills gaps within this cohort has led to us adopting a more flexible approach to GCSE mathematics including the following:

- The introduction of a two-year GCSE mathematics course.
- More effective use of in-class assessments and mock examinations to enable us to differentiate our approach to meet individual learner's needs by identifying those learners with significant skills gaps who need two years to achieve their grade C.
- Allowing learners likely to achieve and those who are borderline to sit the summer examinations where they have a chance of success. This means that those who are likely to achieve a grade C in year one can focus on their technical programme in year two, whilst those who are unsuccessful in year one will continue to study in year two with additional exam preparation and intervention sessions.
- Amending the approach to mock examinations to ensure learners get a 'real' experience of GCSE examinations.
- Introducing REACH week – a week where learners are taken off their usual timetable and allocated to mathematics stretch and challenge sessions.
- Implementing additional intervention classes for the lead up to exams including throughout Whitsun holidays.

OUTCOMES

This year 1,760 young people entered the college without a grade C in mathematics. All of these learners are studying either GCSE or Functional Skills mathematics as part of their programme of study. Learners with a grade D are enrolled on to a GCSE programme alongside their main programme; learners below a D grade are enrolled on to the appropriate level of Functional Skills mathematics. This has meant a significant increase in the number of learners enrolled on GCSE mathematics this year when compared to last academic year, 690% more than in 2014/15.

Last year's success rates saw a big improvement in GCSE mathematics resits. Achievement rates at A*-C improved from 34% in 2013/14 to 53.7% in 2014/15. As part of our Strategic Plan 2016-2019, we have set ourselves some challenging targets for improving the number of learners achieving high grades in GCSE mathematics resits. By 2019 we aim to improve the number of 16-18 year olds achieving grades A*-C (9-5 in future grading system) to 60% of resits.

This year sees the first big challenge in achieving this. We have set ourselves the target to achieve 40% grade A*-C in for GCSE mathematics resits. We anticipate

that 250 learners aged 16-18 and 100 adult learners will complete their GCSE resit in mathematics with us this year. Based on our target success rate for these completers, we anticipate we will have helped in the region of 100 young people and 40 adults to achieve a GCSE grade A*-C in mathematics by the end of 2015/16.

Subject to no significant changes in enrolment patterns or qualifications on entry, we anticipate the number of completers in GCSE mathematics will rise to 600 learners aged 16-18 years and remain fairly stable for adult learners in the 2016-17 academic year. Based on our target success rate for these completers, we anticipate we will help 300 young people and 50 adults achieve a GCSE grade A*-C mathematics in 2016-17. Thereafter we anticipate completion numbers to remain fairly stable with annual increases in success rates up to our ambitious target of 60%. As a result, over the life of our Strategic Plan 2016-19 we anticipate helping 700 young people and 200 adults achieve an A*-C in mathematics. If we can indeed achieve this level of performance we will have played a significant role in improving attainment levels in mathematics in our local community. Whilst daunting, we approach this challenge with confidence.



GCSE MATHEMATICS ANALYSIS 2015-16

2015-16		Summary
Total enrolled in 2015-16		700 enrolled 100 on 1 year programme 100 on year 2 of a 2 year programme 500 of a 2 year programme
Estimated total completers June 2016		350 completers 100 from 1 year programme 250 from 2 year programme (taken early)
Target passes A*-C June 2016		140 A*- C achieved Pass rate 40%

	Enrolled on 1 year programme, finishing June 2016
	Enrolled on 2 year programme, finishing June 2017
	Completers June 2016, from 1 year programme
	Early completers June 2016, from 2 year programme
	Target passes A*-C in June 2016 at 40%

1 person = 100 people

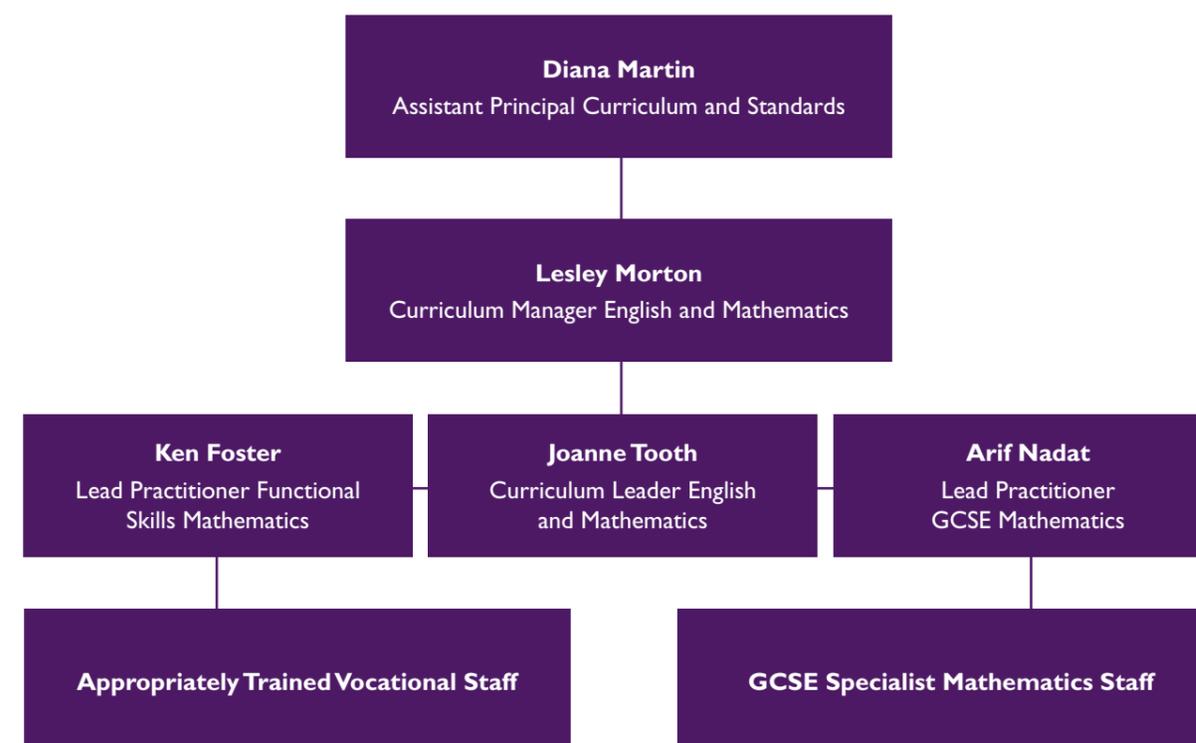
GCSE MATHEMATICS ANALYSIS 2016-17

2016-17		Summary
Estimated total enrolled in 2016-17		More than 1,000 enrolled 100 on 1 year programme 400 on 2nd year of 2 year programme 500 starting 2 year programme
Estimated total completers June 2017		700 completers 80 from 1 year programme 350 on 2nd year of 2 year programme 270 from 2 year programme (taken early)
Target passes A*-C June 2017		350 A*- C achieved Pass rate 50%

	Enrolled on 1 year programme, finishing June 2016
	Continuing on 2 year programme, finishing June 2017
	Enrolled on 2 year programme finishing June 2018
	Completers June 2017, from 1 year programme
	Completers June 2017 Year 2 of a 2 year programme
	Early completers June 2017, from 2 year programme
	Target passes A*-C in June 2017 at 50%

1 person = 100 people

GCSE MATHEMATICS DELIVERY TEAM



WHAT NEXT?

Following the examinations and results of the 2015-16 cohort, we will reflect and identify further improvements which can be made to support learners to gain their GCSE mathematics at a grade C or above and give them an excellent learning experience. If you would like to know more about the GCSE mathematics challenge, please contact:

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Diana Martin – Assistant Principal Curriculum and Standards

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