

Mathematics Departmental Self Evaluation form - 2016

DEPARTMENTAL CONTEXT

Staffing

There are currently 8 staff that teach maths in the school, of whom 6 are mathematics specialists, this includes the Head of Department and Second in Department. Three members of staff have additional responsibilities within the school, (2 Assistant Headteachers and 1 pastoral lead). The department has benefited from the appointment of a KS2/3 specialist, who is currently working with the students in the lowest sets in years 7 and 8, who require additional support in maths. The department has 1 member of staff who teaches a small number of lessons in Year 7, and is a Science specialist. This year all the maths teaching staff have their own classroom, in the suite of maths classrooms.

Setting

Students are sets for maths across the whole year. In Year 7, the boys are placed in sets within the first few weeks of school, using their Key Stage 2 attainment in maths and the results of a baseline assessment taken in the first 2 weeks. The baseline assessments and grade boundaries have been designed by the department in conjunction with several other schools in Sefton and, as with all assessments, will need to be reviewed as more information about the GCSE grades is provided. Set changes take place at any time throughout the year, though are generally looked at following each tracking input, 3 times a year, so that students are in the most appropriate set for their ability. In Years 7 and 8, students are taught in these sets for other subjects and therefore it is important to take into account the needs of other curriculum areas, when set changes take place. In Years 9 to 11, students are taught in discrete maths sets, making it easier for movements across sets. Due to the cohort size, the current Years 9 and 10 have 5 sets while all other year groups have 6 sets.

Overview

The department has not purchased any of the new textbooks published for delivering the new GCSE. At present, the department is using old textbooks, supplemented by worksheets and activities to deliver the new curriculum. In the majority of lessons, work is differentiated and set at 3 levels (green, amber or red). Homework is set once a week for all pupils, though this varies in length of time depending on ability and year group. The department is well resourced including puzzles and mysteries to consolidate learning; however, these will need to be reviewed and updated to better fit the new GCSE and Scheme of Work. A range of software is used both within the classroom and as homework.

KS4 (years 9-11)

All students in Key Stage 4 are studying for the Edexcel GCSE Mathematics examination. The department has rewritten the Schemes of Work to match the new GCSE specifications ready for first examination in 2017. Resources and activities have been created and embedded into the Scheme of Work, but this is ongoing as we continually develop more resources.

There is a significant increase in the demands of the GCSE course and the breadth of study, at both the foundation and higher tiers. The department will continue to monitor students' progress through modular and cumulative assessment. New assessments have been written to mirror the expectations for the new GCSE using the assessments and specimen papers published by Edexcel. These assessments will need to be reviewed as more information becomes available and after the first sitting of the exam in 2017. The department has worked collaboratively with other schools in Sefton to validate our grades for these assessments and this will continue to be a focus area. The department is continually reviewing the systems in place to ensure we best support our students in preparing for this more challenging qualification. Following each tracking, the progress of the students is monitored and interventions are put in place to

tackle any underperformance. Interventions also take place following each module assessments if required.

Within each year group, a cohort of students study for an additional GCSE in Statistics following the specification for the exam board Edexcel. This is taught during the students normal timetabled mathematics lessons and is currently taken at the end of Year 10. For the new GCSE specification, with the removal of the controlled assessment component, we are planning to move the sitting of this exam to the end of Year 11. The number of classes studying Statistics varies from year to year, to ensure that the extra teaching time and increased workload involved in studying for two GCSE exams, does not affect negatively the students attainment in Mathematics, particularly when we take into consideration the demands of the new GCSE. In the current Year 10, Statistics will only be offered to sets 1 and 2 – a cohort of 59 boys.

KS3 (years 7-8)

The Scheme of Work for Key Stage 3 has been rewritten, alongside the Key Stage 4 Scheme of Work, so that students are prepared for the greater challenge of the new GCSE. As in Key Stage 4, resources and activities have been embedded into the Scheme of Work, but this is being continually updated and developed. At present, students are assessed through module tests following each module. These have been based on the assessments provided by Pearson for Edexcel. The department is currently introducing more formal, cumulative assessments to raise the importance with students of the need for spiral learning and to encourage students to improve their ability to recall prior knowledge.

OUTCOMES – Grade 2

Evidence that supports this judgement

Attainment at GCSE - Maths

	All	%	SEN	%	PP	%
No. of Candidates	168		26		28	
A*-A	40	24.2	1	3.8	2	7.1
A*-C	116	70.1	9	34.6	12	42.9

Three year trend - Maths

	2016			2015			2014		
	Achieved %	National %	GAP	Achieved %	National %	GAP	Achieved %	National %	GAP
A*-A	24.2	15.9	+8.3	23.4	17.3	+6.1	29.3	15.2	+14.1
A*-C	70.3	61.0	+10.3	77.2	63.9	+13.3	83.7	62.5	+21.2

Levels of Progress - Maths

	National	2016		2015	2014
	%	No.	%	%	%
N/A		3	1.8	1.3	1.6
BELOW 3	34	49	29.2	27.8	19.1
3+ LOP	66	116	69.9	72.2	78.8
4+ LOP	30	52	31.3	34.1	38.6

Attainment at GCSE - Statistics

	All	%	SEN	%	Disad.	%
No. of Candidates	78		2		11	
A*-A	37	47.4	2	100	6	54.5
A*-C	77	98.7	2	100	11	100

Three year trend - Statistics

	2016			2015			2014		
	Achieved %	National %	GAP	Achieved %	National %	GAP	Achieved %	National %	GAP
A*-A	47.4	17.8	+29.6	38.1	18.0	+20.1	31.93	18.2	+13.73
A*-C	98.7	70.2	+28.5	96.5	68.9	+27.6	95.80	67.3	+29.33

Levels of Progress - Statistics

	National	2016		2015	2014
	%	No.	%	%	%
N/A		0		1.8	1.68
BELOW 3	33	3	3.8	7.1	11.76
3+ LOP	67	75	96.2	91.2	86.55
4+ LOP	32	45	57.7	51.3	44.54

Areas of Strength

- In Maths, almost a quarter of the grades were at A*-A, which is above national and though this was a lower ability cohort, is in line with the 2015 figure.
- In Statistics almost half the grades were at A*-A grades, which is significantly above national.
- A*-C grades in Statistics is well above the national.
- Results were in line with predictions.

Why outcomes in the department is not the grade (above/below)

Areas for Improvement

- Reverse the 3 year decreasing trend in Maths, at A*-C. This needs to be addressed by focusing on improving the engagement of the MAPs, the lowest performing ability cohort.
- Raise the attainment and progress of disadvantaged students, through careful monitoring of tracking data and the implementation of high quality interventions.
- Review intervention strategies used and implement more targeted programmes of intervention and monitor their impact.

Current Year 11

Predictions in Maths have always been very accurate, but as with all schools, the department is less secure in our predictions for the new GCSE. We have been seeking validation of our internal mock data from other schools, local authorities and through our participation in PiXL. These predictions should be treated with caution, but we are expecting an improvement in attainment for the current Year 11, who have a more positive attitude to learning and are more engaged in lessons.

At the end of Year 10, all students participated in the PiXL exam, which validated our predictions. In Year 11, all students sat 2 mock exams, one in December, the Edexcel secure mock, and again in March, the PiXL mock. The improvement in the mock grades is shown by the first 2 tables. The 3rd table shows the grades for the 2nd mock using the PiXL suggested boundaries. These boundaries validate our current predictions for Year 11 of 80% at 4+, 61.2% at 5+ and 29.9% at 7+.

Y11 Mock 1 BHS

Grade	9	8	7	6	5	4	3	2	1	U	total
number	0	6	10	12	19	33	31	5	6	7	129
Cum %	0	4.7	12.4	21.7	36.4	62	86	89.9	94.6	100	

Y11 Mock 2 BHS

Grade	9	8	7	6	5	4	3	2	1	U	total
number	0	10	24	15	13	32	28	2	2	3	129
Cum %	0	7.8	26.4	38	48.1	72.9	94.6	96.1	97.7	100	

Y11 Mock 2 PiXL

Grade	9	8	7	6	5	4	3	2	1	U	total
number	7	5	23	15	30	25	17	3	5	0	130
Cum %	5.4	9.2	26.9	38.5	61.5	80.8	93.8	96.2	100	100	

QUALITY OF TEACHING, LEARNING & ASSESSMENT – Grade 2

Evidence that supports this judgement

As a consequence of the decrease in the results at GCSE in Maths at A*-C, we have sought external validation of our judgements on teaching and learning within the department through a series of monitoring visits and support. The first monitoring visit was in 2015 and led by the Local Authority Lead for Mathematics in Liverpool. We then had 2 further visits in 2016, by our partner school Sandbach High School and by the Coastal Schools Alliance. The feedback mirrored our own judgements. One of main areas for improvement is the progress of our MAP boys; this has been raised as a concern by other schools in the Coastal School Alliance and the department is working on a project to focus on the engagement of middle attaining boys.

Key strengths of the department include, secure subject knowledge and effective questioning. Observations show that behaviour is good and that teacher/student relationships are strong. Students have the confidence to contribute in the lesson and take risks without fear of failure. They have a positive attitude to their learning.

All lessons have a clear structure ensuring consistency across the department, with tiered tasks used routinely for differentiation. However, there is a concern that this formulaic structure means that there is a danger that there is insufficient variety from lesson to lesson. Engagement has been a concern with some MAP students in particular, and so the department is looking at different approaches to vary their teaching including the inclusion of more group work.

Marking by staff is regular and in line with the departmental policy and good use of 'Fix It Time' is in evidence, though this needs to be embedded more consistently across the department.

Students generally perform well in the module assessments and interventions are in place to address any underperformance. At tracking points, when cumulative assessments take place, students' ability to recall prior knowledge is a concern. This year we are including activities that will support students in this important skill, predominantly through starters and homework tasks.

Why quality of teaching, learning & assessment in the department is not the grade (above/below)

Although there are many examples of excellent teaching, learning and assessment throughout the department at all times, these examples are not consistent enough across the whole department....yet.

Areas for Improvement

- Include more varied activities and group work tasks
- Relate topics to real life and give practical examples where possible
- 5 a day lesson starters have been re-introduced on a regular basis
- Repeated homework skill tests have been implemented to aid revision
- Monday morning maths has been introduced in registration for Year 11 to consolidate previous learning
- Collaboration with Coastal Schools, two of whom will be coming into school to look at how we teach the MAPs and provide feedback and then research strategies for us to trial, for improving the engagement of our MAP boys
- develop the use of marking criteria/standards, to support peer assessment

Evidence that supports this judgement

The behaviour of the students in mathematics is good. Teachers establish good routines and have high expectations. Students of all abilities have the confidence to participate in the lesson, contributing to discussions and in many cases are eager to do so. There is a very strong and consistent use of the maths behaviour policy across all members of the department. Sanctions continue to be recorded in line with school policy, but there has been a reduction in the number recorded. The department uses merits as a positive reinforcement of good attitudes to learning and good work. This year we have introduced the class champion, as a way of improving performance in the module tests and the KS3 and KS4 certificates home have been well received. Staff are encouraged to phone or email home for positive news as well as for lack of homework, behaviour issues or other concerns. Remove is used effectively to deal with more challenging behaviour, though the need to use Remove has decreased this year.

In classes with more challenging students who may disrupt the learning of others, staff feel able to ask for support. This may include a request for MBWA support. The department runs an open door policy to ensure that support is available and good practice can be easily observed. Low level disruptions are tackled effectively.

Health and Safety are always a consideration when planning any movement around the room or with use of any equipment.

Why Behaviour and Safety is not the grade (above/below)

Results from pupil voice and parent comments show that boys feel that their maths classroom is an environment where they are able to learn and feel secure. However there is a need to increase the provision of enrichment activities to help enthuse the boys with the 'awe and wonder' of mathematics. This could be addressed in the coming year with activities including the Runshaw competition, the Edge Hill Challenge, the 100 club and possibly numeracy ninja.

EFFECTIVENESS OF LEADERSHIP & MANAGEMENT – Grade 2

Evidence that supports this judgement

There is a strong team ethic across the department led by experienced practitioners. There have been changes in the structure of the department and we have had to adapt to these changes. The Second in Department has taken on an extra roll as Lead Practitioner for Mathematics within the ITT SCITT in the local area.

The leadership lead by example, demonstrate good practice, and are always available to give advice and support, particularly to new members of the department. All members of the department operate an open door policy allowing for peer and joint observations to be carried out informally but regularly to develop teaching. The Remove system provides all staff with support with behaviour management.

The Head of Department and Second in Department have rewritten the Schemes of Work for all years in preparation for the new GCSEs and new assessment criteria are up and running, with improvements being made as each module is taught and assessed. They have worked collaboratively with other schools adopting a leading role, ensuring the systems we have in place have been validated.

The team is very important. All opinions are valued and the staff all support each other and work collaboratively on developing new resources.

Why Leadership and Management is not the grade (above/below)

The teaching within the department is still good, even with several changes in staffing within the department. The department works very much as a team with work shared, so all staff have ownership. Decisions are made following full discussions, but directed by strong leadership.

Areas for Improvement

- Decreasing results trend identified and strategies put in place to reverse. Impact already starting to be felt in current Y11 and below
- Address the lack of engagement in some lessons, particularly the MAPs
- New robust system of identification and intervention was put in place last year but needs further refinement to improve impact
- Maintain the team dynamics by ensuring members of the department who are not solely working within maths are kept fully briefed and are allocated clear tasks which support the department