

agenda

NEWS AND VIEWS FROM OCR / AUTUMN 2016

Supporting education

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SHEFFIELD'S NEWEST UTC**

INTRODUCING 9 TO 1 GCSE GRADING



LIGHT BULB

MOMENT

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When they go from learning about
something new, to really understanding
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Welcome to the Autumn 2016 issue of **agenda**, OCR's termly magazine which offers a snapshot of news and views from OCR.

Whether you are in a school, college or a training organisation, I hope the Autumn term is progressing well.

During this time of considerable reform, there's plenty of information in this issue to help you keep on top of the key changes affecting our qualifications – from a brief introduction to 9 to 1 grading on all new GCSEs from summer 2017 onwards to our new guide to our vocational Cambridge Technicals range.

Maths is now the most popular A Level and OCR is the only exam board to develop two new suites of maths at A Level for 2017 which means there's something to suit you and your students. You can read about the two suites and the research behind them on pages 10-11.

Whichever OCR qualification you are teaching or planning to teach, we've got lots of support for you.

In this issue, we're delighted to include a case study about teaching OCR's new Chemistry A Level from the Head of Science at a school in Kent. We hope you also enjoy reading an interview with the Principal of the newest UTC in Sheffield about the challenge of delivering a technical and academic curriculum.

We'd like to hear your views too, so please get in touch about anything you read here via agenda@ocr.org.uk. And do let us know if you would prefer to read an online version of our magazine.

Leo Shapiro
Chief Executive, OCR

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Supporting education with OCR's Bursary Awards 2016

At the end of September, a group of talented A Level students from across the West Midlands were presented with OCR bursaries towards the costs of their studies at Cambridge University.

OCR's Bursary Scheme was set up to support a greater number of talented young people from the West Midlands to apply to Cambridge. Due to OCR's historical associations with the West Midlands, a fund exists to support education in the area. The star students who attended schools in Birmingham, Coventry, Leamington Spa, Shrewsbury, Stourbridge, Tamworth, Worcester and Warwick, came with family and teachers, to attend the presentation event held in OCR's Coventry offices.

Congratulating the students on their achievements Simon Lebus (pictured right), Chair of OCR and Chief Executive of its parent organisation Cambridge Assessment, said: "This is an exceptional group of young people, who are very worthy recipients of the OCR bursary. Not only are they high achieving academically, but every one of them has taken their studies beyond the A Level curriculum, such as by representing Britain at the Physics Olympiad. They have also shown themselves to be outstanding people, volunteering in Africa, charity fundraising and mentoring younger students. Many of them are the first in their families to go to university and I hope the OCR

bursary will go towards helping any financial pressures that could get in the way of them making the most of their study and lives at Cambridge. I am sure they will all be great successes at Cambridge and beyond."

They receive £3,000 for each year of their undergraduate studies at Cambridge, which they can use for living or tuition costs, or a combination of both. Matthew Paterson is one of two students from Shrewsbury Sixth



Form College off to Cambridge with an OCR bursary. Matthew (pictured right with fellow Shrewsbury College pupil George Williams) who started studying Maths at St Johns College this term, said: "The bursary will be the difference between struggling to survive at university and being able to enjoy it."



New Chief Executive for OCR

Leo Shapiro became Chief Executive of OCR in August 2016. He was previously Group Strategy & Development Director for OCR's parent, Cambridge Assessment, and is a member of its Corporate Board.

Since joining Cambridge Assessment in January 2015, he has developed a good understanding of OCR, having worked closely with the senior management team and with OCR's partners, including the Cambridge University Press as well as with the University itself.

Leo's priority is to guide OCR to a sustainable future by continuing the implementation of priorities and activities identified in a strategic review of OCR, completed in Spring 2016.

He brings over 20 years' senior management experience gained in the insurance, management consulting and retail sectors.

In brief

OCR at your service

The speedy resolution of enquiries about the marking of exam papers after results day in August is vital for all students, especially those with university places at stake.

We are delighted that OCR once again provided a prompt service this summer with an average turnaround time of under 3 days (2.36 days in fact) for those requesting our 'Priority Service 2' for AS and A Level papers. Improving our service for customers in this area has continued to be a focus of our activities, alongside providing clear communications to customers about the reforms brought in by Ofqual to the results enquiry system this year.

Practice makes perfect

A second set of practice papers will be available in December to help teachers prepare for assessments of the new linear qualifications that were introduced from September 2015. These papers are in addition to the practice papers released for these qualifications in Spring 2016, and the check tests that are also available to support learning and preparation for assessment. Teachers can find the new papers via individual subject pages or via the past paper finder. In addition, look out for practice papers released in Spring 2017 for students at the end of year 10 taking our new 2016 History GCSEs and our Science GCSEs.

Online set text surgeries for GCSE (9–1) English Literature teachers

OCR's new online set text surgeries for GCSE English Literature aim to facilitate teachers linking up, no matter where they are geographically, to share successful classroom strategies and pedagogical hints and tips. An OCR English subject specialist will manage each online session but these are driven by teachers for teachers. As well as taking away some practical and creative ideas for helping students to find pathways through their set texts, the hope is that teachers will feel enthused and reassured that they are indeed 'on the right track'.

The idea for the set text surgeries first came about in response to a teacher's request to link up with other schools teaching *Great Expectations* for OCR's new GCSE English Literature. Subject Specialist Kate Newton explained: "I put the teacher in touch with another school that I knew had tackled Dickens's classic with their Year 10 students, with some success and, dare I

say it, even enthusiasm. It was fantastic to read the candidates' feedback, thread through



as it was with enthusiasm and genuine appreciation of Dickens's storytelling powers and vivid characterisations."

Like all the GCSE (9-1) English Literature qualifications, OCR's new GCSE requires learners to read and respond to whole texts in closed text exams: compulsory course reading includes a 19th century novel and a Shakespeare play.

Kate continued: "While there's no substitute for face-to-face contact, the reality is that we're



increasingly looking to embrace online technologies to meet customer needs. Teachers are work heavy and time poor – so logging on for a free hour long webinar at the end of the school day can be an appealing alternative to negotiating time off timetable and dipping into the precious departmental CPD pot to travel to an external training or networking event."

www.ocr.org.uk/english

You can sign up via cpdhub.ocr.org.uk for the following free online set text surgeries, all held from 4-5pm:

Modern texts
6 December

Poetry anthology
19 January

Shakespeare
28 February

Reform Update: The latest on new GCSEs and AS/A Levels

After helping teachers around the country to get off to a flying start with 37 new OCR GCSEs and AS/A Level qualifications in September 2016, the accreditation process for the third raft of our reformed qualifications for first teaching from 2017 is going smoothly.

Last, but definitely not least, we're looking forward to offering teachers new GCSEs in the following subjects: Ancient History, Business, Classical Civilisation, Design & Technology, Economics, Film Studies, Media Studies and Psychology.

At AS/A Level, we're preparing to offer teachers qualifications in Ancient History, Classical Civilisation, Design & Technology, Film Studies, Geology, Law, and Media Studies.

In addition, OCR is the only exam board to offer the choice of two suites of new Maths and Further Maths AS and A Levels. On pages 10 to 11, you can read a special feature about our development of two new suites of Level 3 Maths qualifications and the research that shaped our work. One suite builds upon our current OCR specification and the other has been developed in collaboration with longstanding partners Mathematics in Education and Industry (MEI). This gives schools the option to choose the qualification structure that best suits their students, and the widest possible range of optional pathways in Further Maths.



Supporting teaching

To help teachers of OCR's new GCSEs and AS/A Levels, we offer:

- An extensive range of free teaching and learning resources including delivery guides and schemes of work www.ocr.org.uk/reformresources
- Subject specialists to answer your questions, email subject@ocr.org.uk (eg maths@ocr.org.uk)
- A range of CPD from online to face to face to suit your needs, see www.cpdhub.ocr.org.uk
- Mark schemes and sample papers to help teachers and students to prepare for exams

Introducing 9 to 1 grading for new GCSEs

On 24 August 2017, all students in England will receive results graded in numbers ranging from 9 to 1, with 9 being the highest, instead of A* to G, for their performance in reformed English Literature, English Language and Maths GCSEs.

A key feature of the government's reform of qualifications, the 9 to 1 grading system will be applied more extensively in August 2018 for the grading of reformed GCSE qualifications in subjects including biology, chemistry, physics, computer science, religious studies, music, geography and history which were introduced in September 2016. Exams in a third tranche of GCSE subjects, which will start in 2017, will be graded 9 to 1 for the first time in August 2019. Up until 2019 therefore, students may receive their GCSE results in a mix of new 9 to 1 grades and the current A* to G system, depending on the subjects they study.

How does 9 to 1 and A* to G equate?

There isn't a one-to-one mapping between the new numeric grades, and the current A*–G grades, but the two systems will be aligned at key grades:

- Grade 1 (lowest grade) will be aligned to the bottom of the current grade G, so that approximately the same number of students who currently get grade G or better will get a grade 1 or better.
- **The bottom of grade 4 will be aligned to the bottom of grade C, so approximately the same number of students who currently get a grade C or above will get a grade 4 or above.**
- The bottom of grade 7 is aligned to the bottom of grade A.

The top grade 9 will be awarded using a different method. As confirmed by Ofqual on 23 September, 20% of students who achieve a mark at grade 7 or above will be awarded the grade 9. The bottom of grade 8 will be set on the mark halfway between the grade 7 and grade 9 boundaries. This new structure means

| New grading structure | Current grading structure |
|-----------------------|---------------------------|
| 9 | |
| 8 | A* |
| 7 | A |
| 6 | B |
| 5 | C |
| 4 | |
| 3 | D |
| 2 | E |
| 1 | F |
| | G |
| U | U |

that there are fewer grades for the lower ability ranges: grades 1, 2, and 3, compared to grades G, F, E and D. For the mid to high ability range, the new grading structure has more grades available, so that it will be possible to differentiate better between the most able students: As a rule of thumb, fewer students will get the new grade 9 than currently get the old A*.

What's a pass in the new 9 to 1 grading system?

Broadly the same proportion of students will receive a grade 4 and above on the new grading system as currently achieve a grade C and above. Grade C – which currently counts for inclusion on league tables – straddles all of grade 4 and the lower part of the new grade 5

(pictured above, Ofqual's postcard circulated to schools in July). Current DfE policy is that grade 5 has been identified as 'a good pass' and will count as a headline performance table measure in 2017 and 2018.

What are the standards for the new 9 to 1 grading system?

While many teachers are keen to know how well their students will perform on the new specifications, exam boards will not set grade boundaries until students have sat the first exams. Ofqual has also provided some outline grade descriptions for the new GCSEs but these only provide the broadest of indicators. Sample exam papers give teachers a feel for how the new assessments will look.

Grade boundaries will be set by examiners on the basis of statistical information. The use of statistical information is part of a method of awarding known as 'comparable outcomes' which aims to ensure that students of similar ability get the same grade in one year (such as the first year of a new qualification) as they would have received had they sat an equivalent examination in a previous year. Ofqual is using this approach 'to provide some certainty about what to expect at this time of significant change'.

Networking time



Getting out of the classroom and talking to other teachers from local schools is a great way to share ideas, share good practice and reignite subject passion. OCR hosts local teacher networking groups giving teachers the chance to: meet with colleagues; gain a deeper understanding of new specifications; receive guidance on assessment; see new teaching resources; and put burning questions to our subject specialists. Here's what one teacher said after attending a network event:

"A really useful event which is both supportive and motivating and gives me a platform to share and develop best practice."

Usually run as twilight sessions – between 4 and 6pm – there are over 25 events this term in the following subjects:

- English
- Maths
- Science
- History
- Computer Science

We've got some inspiring venues lined up too, for example, our History networking venues include the Tower of London, the Imperial War Museum Duxford and Hillsborough Castle.

To find out more, look at www.cpdhub.ocr.org.uk and search **Teacher Networks** to see all the forthcoming events.



New guide to Cambridge Technicals

OCR has produced a complete guide to Cambridge Technicals, OCR's Level 2 and Level 3 vocational qualification range for 16+ students. The 'Cambridge Technicals Explained' guide lists all the different qualifications available across the key sectors, from Art and Design to Sport and Physical Activity.

With a 2012 suite which is internally assessed and a new suite from 2016 that combines external and internal assessment, the guide helpfully provides last entry and certification dates and funding details. There's also a reminder that schools and colleges in Northern Ireland and Wales can use Cambridge Technicals. We're excited by the new Level 2 range which is designed for first teaching from September 2017.

The suite is designed to be able to support every student's lifelong learning journey. With project and research activities, the suite offers specialist pathways aligned to specific industry sectors. Level 3 Cambridge Technicals provide a high quality alternative to A Levels (and attract UCAS points), and give teachers an alternative to BTEC. The new 2016 Level 3 suite now includes an 1080GLH Extended Diploma qualification.

Find out more at www.ocr.org.uk/cambridgetechnicals



Get Started on Level 2 Cambridge Technicals

Alongside our new 2016 Level 3 Cambridge Technical vocational qualifications, we have developed a new suite of Level 2 Cambridge Technicals for students post 16, ready for first teaching from September 2017.

Designed to meet the DfE's Technical Certificate characteristics, OCR has worked with key industry employers and experts to make sure they provide the right knowledge and competence required for student progression, whether that's straight into employment, further study via a Level 3 Tech Level qualification or an apprenticeship. These qualifications include a range of mandatory and specialist pathway units, allowing students to focus on what is right for their chosen career path. They combine externally assessed content with student-focused internal assessment. Visiting moderation from OCR will provide feedback and support.

OCR's Level 2 Cambridge Technicals are available in Business, Engineering, Health and Social Care, IT, and Sport and Physical Activity.

We are running 'Get Started' CPD courses in mid 2017 for anyone preparing to teach the new Level 2 Cambridge Technical qualifications via www.cpdhub.ocr.org.uk.



Staying close to Functional Skills Reform

As part of the reform of Functional Skills (FS), OCR is contributing its expertise to the redevelopment programme through consultation responses and holding workshops with customers. Revised qualifications are scheduled to be available for first teaching in September 2018.

At the 2016 AELP Annual Conference, OCR held a joint workshop with Pye Tait Consulting on the future of Functional Skills. Pye Tait was appointed by the Education and Training Foundation (ETF), to conduct research on the qualifications and the underpinning adult literacy and numeracy standards.

OCR Sector Specialist, Ruth Carter, presented alongside

Pye Tait Director Miranda Pye (pictured), on what the redeveloped qualifications might look like and the impact on what's currently provided.

Initial research on Functional Skills, 'Making maths and English Work for all', found that the current qualifications, dating back to 2007, weren't 'broken' but there was a need to improve their relevance and content, and their recognition and credibility in the labour market. The intention is that the revised FS maths and English qualifications will be better recognised and valued by employers.

Pye Tait's report on the proposed new standards is due to be published this Autumn.

www.ocr.org.uk/fs

Creating the team behind the Olympic dream

GB's Olympians and Paralympians both had a very successful summer games but these achievements aren't simply down to the athletes themselves. The athletes are supported by a huge team behind the scenes, from coaches to psychologists to data analysts.

With GCSEs and A Levels in Physical Education, Cambridge Nationals in Sports Studies and Sports Science and Cambridge Technicals in Sport and Physical Activity, we have a qualification that will help support learners on their journey in the sector, whether that's directly into employment or into Higher Education. Who knows, maybe even helping a future Team GB or Paralympic GB member break even more records!

In a recent blog, OCR's Gareth Edwards examines the vital role sports qualifications play in creating the teams behind Olympic and Paralympic dreams. Find this and other blogs here:

www.ocr.org.uk/blog
www.ocr.org.uk/sport

Sarah Clark is principal of the brand new UTC Sheffield Olympic Legacy Park which opened in September 2016. The UTC Olympic Legacy Park is one of two twinned University Technical Colleges (UTCs) in Sheffield, a major achievement for the city.

The new College has capacity for up to 600 students aged 14 to 19 who follow a curriculum that combines academic study with a technical specialism in the areas of healthcare and sports science, and computing. The technical education is made possible by working closely with local educational partners and employers. Students can apply from across the Sheffield City region, which includes South Yorkshire and parts of North Derbyshire and Nottinghamshire.

Here Dr Clark tells agenda about her own path into education and the challenges she faces.

What has been your path into your current role?

Since studying for a PhD in Molecular Genetics and a BSc in Microbiology, I have held a variety of senior roles in education for 11 to 18-year-olds across Derbyshire and Staffordshire. Prior to joining UTC Sheffield, I was Principal and Vice Principal at Landau Forte Academy Sixth Form in Tamworth. Now, I am Principal of UTC Sheffield Olympic Legacy Park campus, which opened this September in Sheffield, South Yorkshire. The £10 million facility, for 600 students aged 14 to 19, is the city's second University Technical College (UTC). UTCs are being rolled out nationally, and are state funded and non selective. The building, curriculum and facilities have been designed with employers and are training the next generation of Britain's creatives, scientists, engineers and technicians. Sheffield's second UTC specialises in the high growth sectors of health and sport sciences, and computing, to reflect regional skills needs, and has attracted the backing of regional employers who are supporting curriculum design and delivery.

What do you like about working in the field of education?

At UTCs, students complete a technical qualification as well as GCSEs and A Levels to prepare them for great careers. I am enjoying the challenge of offering students high quality technical

qualifications as well as traditional academic qualifications, so they get the skills that employers need to grow. Through working with The Sheffield College, Sheffield Hallam University, the University of Sheffield and Sheffield Chamber of Commerce, we are attracting a rich range of employers who are offering high-quality experiences and projects within our curriculum. More than 50 employers support UTC Sheffield overall including our first campus UTC Sheffield City Centre which specialises in advanced manufacturing and engineering, and the creative and digital industries, and which was the first UTC to launch in Yorkshire and Humber in 2013.

Who do you admire in your field?

In the field of biological sciences, Robert Winston who is the Chancellor of Sheffield Hallam University. His ground breaking contributions to research have led to advances in our ability to tackle issues of infertility and also inherited illnesses. Also he has played a major role in educating the public through amazing BBC science documentaries.

Was your own experience of education a positive one and what lessons did you learn from it?

Having secured a place at Cambridge University to study geography, I became very interested in genetics. Before taking up the place I made the decision to study microbiology at the University of Bristol.

This required a U-turn involving a year out working in a hospital laboratory and teaching myself aspects of chemistry. It was a fascinating change. Microbiology is still a subject that I am very passionate about. Through studying a PhD, I also learnt to face mental challenges head on. The *Streptomyces* bacterium I was working with decided not to grow for six months – a major block to the project – but with perseverance I managed to find the solution!

What do you do when – if – you have time off?

I have been a member of the four-part-harmony barbershop chorus, DaleDiva, based in Cromford, Derbyshire since 2011. We have been successful competing for medals in national and international competitions including winning Channel 5's 'Don't Stop Believing' and competing this year at Eisteddfod. The regular commitment of attending weekly rehearsals, performing on stage in front of a variety of audiences and learning a new repertoire gives me a fresh focus as well as a reminder of what it's like to be a student. I also enjoy the camaraderie of being with a great bunch of like-minded women. Also, since Christmas, I have progressed from the couch to running the 5km Race for Life in Sheffield in July. I now run 8km every Sunday and I feel the benefits both mentally and physically, which sits well with the demands of the job.





If you weren't a teacher, what would you be?

I would love to be a lawyer. Through debating key issues in education for the benefit of my students and staff, and also having to understand legal requirements within this field, I have become more interested in law. I also value opportunities for students to acquire the skills to analyse information, construct arguments and become confident speakers, all highly valuable skills for a successful and confident future.

What are the greatest challenges faced by colleges such as your own over the next five years?

Balancing financial constraints whilst ensuring the highest quality curriculum and education for all students will be a challenge. However, the opportunity to work collaboratively as part of two UTCs in Sheffield provides a great opportunity for financial prudence, innovation and economy.

As a college principal, how do you know when you are doing a good job?

At the heart of the success of any business is the satisfaction of the consumer. If students are engaged and enjoying their studies, as well as securing the most competitive destinations, whether university, employment or apprenticeships, then I will know that I have been successful. If the UTC is a

preferred choice of parents, then I will know that I have been successful. If staff are able to be creative and develop professionally, whilst also delivering high quality outcomes for our students, then I will also know that I have been successful.

What achievement are you proudest of?

I feel privileged and proud to be leading such an exciting new facility that is building on the success of Sheffield's first UTC. The location of the second UTC, within the dynamic Olympic Legacy Park, an area of regeneration, is part of a broader multi-million pound investment in cutting edge facilities for healthcare technologies, sports and sports science, which will provide us with the opportunity to be a leading institution both regionally and nationally. Our students are benefiting from partnerships with The Sheffield College, Sheffield Hallam University, Sheffield Chamber of Commerce, Sheffield Teaching Hospitals NHS Foundation Trust, the University of Sheffield, Sheffield Eagles, DBL Sharks Sheffield, SIV, Sheffield City Council, Goldfish Systems, Yoomee, Mundojumbo, The Better With Data Society, Home Office, Team Active, BirchenhallHowden, Scrapbook Development and Sero Consulting.

If you were stuck in a lift with government minister, what three things would you ask for on behalf of your college?

I would want to explore what is being done to address regional differences in funding. Originating from the south-east, being educated in the comprehensive school system but living and teaching in and around the Midlands, I would be asking for a sincere commitment to addressing the north-south divide. I am also passionate about UTCs and the benefits that they bring to students and would be looking for further support by the Government on growth within this sector. Finally, I would explore the opportunities for innovation and development of entrepreneurial skills within the curriculum and how the Government can support that to further develop the workforce of the future.

$$\left(\frac{1}{y} + x\right) dx - \frac{x}{y^2} dy =$$

$$y_1 = y_1 + \int_{x_0}^{x_1} f(x, y_0) dx$$

YOUR FORMULA FOR A LEVEL MATHS SUCCESS

OCR'S NEW LINEAR QUALIFICATIONS IN MATHS

Maths is the most popular A Level taken in schools and colleges today so it's vital that the new qualifications work for teachers and students alike. We are developing two new distinct suites for A Level and Further Maths, OCR (A) and OCR B (MEI), to suit different approaches. This article explains all the basics and the support on offer to help teachers move to linear qualifications.

THE BASICS

In 2017, the spotlight of A Level reform in England is on Mathematics and Further Mathematics. There will be new specifications for A Level Mathematics and Further Mathematics, for first teaching from September 2017.

The level of demand of the new reformed qualifications is the same as the existing A Level and Further Maths qualifications.

The first assessments for AS Mathematics, A Level Mathematics and AS Further Mathematics will be in June 2018. The first assessments for Further Mathematics will be June 2019.

How are A Level and Further Maths changing?

- **Linear assessment:** All assessments for A Level and Further Maths are linear, with 100% by examination, which means that all the exams are sat at the end of the course.

- **Statistics and Mechanics are compulsory:** AS and A Level Maths have 100% prescribed content, containing both pure and applied mathematics, which means that there are no options available to choose. All AS and A Level Maths students will now be assessed on both Statistics and Mechanics.

- **Large Data Sets:** A Level students should be familiar with using large data sets to support their learning and assessment of Statistics.

- **Use of technology and calculators:** It is assumed that students will have access to appropriate technology with the use of scientific or graphical calculators available for all exams.

- **Mathematical understanding:** There is increased focus on problem solving, mathematical argument, reasoning and modelling.

- **Choices at Further Maths:** At AS Further Maths and A Level Further Maths, there are choices and options for the topics you teach. This means that you can choose topics that meet the needs and interests of your students.

Our Approach at OCR

At OCR, our aim is to develop coherent mathematics specifications (subject content, assessment and support) that help to develop mathematically informed learners of all abilities.

We provide for learners with a wide range of destinations, requiring the development of logical and critical thinking as well as subject specific knowledge to support further study or application in the workplace.

And our approach is evidence-led and research-based. Throughout the development of our new OCR specifications, we have involved the maths community, working closely with practicing teachers and consulting with lecturers and students from Higher Education.

AWAITING ACCREDITATION

Two suites of qualifications

OCR Mathematics A has been developed to provide students with a coherent course of study to develop mathematical understanding. Students are encouraged to think, act and communicate mathematically, providing them with the skills to analyse situations in mathematics and elsewhere. It is based on our experience of what works well in the classroom, providing clear subject progression and teacher support.

OCR Mathematics B (MEI) has been developed in collaboration with the education charity Mathematics in Education and Industry (MEI). MEI is a long-established, independent curriculum development body supporting mathematics teaching and learning and are specialists in AS and A Level Mathematics and Further Mathematics. This qualification has been developed to allow students to develop a deep mathematical understanding that they can draw upon during their studies and throughout their lives.

MEETING TEACHER NEEDS

Moving linear

In our discussions with teachers about A Level reform and moving from modular to linear qualifications, many have highlighted the need to develop a different approach.

Planning content coverage for a linear qualification requires a more holistic and synoptic approach. The relationship between different topics, revisiting of concepts and skills, and opportunities for formative assessment all need to be considered and planned.

Our teacher-friendly specifications have been designed specifically by teachers for teachers to use in their day-to-day teaching.

Our new editable two-year A Level scheme of work provides help for teachers to plan a holistic linear course that best meets the needs of their students. It provides guidance on building a spiralled approach to teaching A Level maths, so that topics can be revisited and built upon to help develop a deep mathematical understanding.

Linear assessment provides opportunities for longer-term development of understanding and skills. Progress is monitored through regular assessment of learning.

We are developing a new resource bank of topic-based assessments that can be used throughout a linear course to help teachers to regularly assess their students' learning and track their progress.

Three sets of practice papers, in addition to the Sample Papers, will be available to support mock examinations and revision.

Teaching Mechanics for the first time

Talking to maths teachers about A Level maths reform and the 100% prescribed content has highlighted that they may be teaching mechanics for the first time from September 2017.

Our teacher-friendly specifications provides specific help and guidance for teachers teaching mechanics for the first time. Our new Delivery Guide explains mechanics concepts and suggests teaching approaches, with specific guidance on teaching pure maths in the context of mechanics.

We are also developing a programme of CPD to support teachers new to teaching mechanics.

Working with large data sets

Large data sets are a new feature for all reformed A Level mathematics qualifications.

The purpose of the large data set is that learners experience working with real data in the classroom and explore this data using appropriate technology. It is intended to enrich the teaching and learning of statistics.

Our Delivery Guide is specifically aimed at providing help and guidance for teachers to embed large data sets in their teaching and learning of statistics. In addition, we are working with practising teachers, who are using large data sets in their teaching, to develop free classroom resources for teachers to use.

Accessing technology

It is now assumed that learners will have access to appropriate technology when studying A Level and Further Mathematics courses, such as mathematical and statistical graphing tools and spreadsheets. When embedded in the mathematics classroom, the use of technology can reduce the burden of computation, facilitate the visualisation of abstract concepts and deepen learners' overall understanding.

Learners are permitted to use a scientific or graphical calculator for all papers.

Our teacher-friendly specifications provide specific help and guidance for teachers to exemplify how to use technology to support teaching and learning.

Our mark schemes show clearly how marks are awarded for all question types, including where calculators are used.

Learn more:

www.ocr.org.uk/maths
www.mei.org.uk

RESEARCH

Research with over 4,000 university students to inform choices at Further Mathematics:

During the development of our new specifications, a study was conducted by Cambridge Assessment to investigate how university students perceive the current Mathematics A-Levels as preparation for degrees with a mathematical component. Generally, students in the physical sciences preferred mechanics; those in the biological and social sciences preferred statistics; and computer scientists preferred decision mathematics.

Most students who had taken Further Mathematics were enthusiastic about it, but there was variability in how useful it was perceived to be as preparation for university.

As a result of this research, OCR has included a choice at Further Mathematics that includes specific topics to support preparation for university, for example, partial differentiation and non-parametric statistical tests.

You can read more about this research at

www.cambridgeassessment.org.uk/insights/the-mathematics-needs-of-higher-education/





OCR'S NEW A LEVEL CHEMISTRY: TRIED AND TESTED

Jo Gaisford is Head of Science, Chemistry and Biology at Simon Langton Girls' Grammar School in Canterbury, Kent. A single sex school for 11 to 16 year olds, it has a co-educational sixth form. In 2015, Year 13 students achieved the highest percentage of A*, A* to B, and A* to C grades in the Canterbury area.



In this case study, Ms Gaisford shares feedback on choosing to teach OCR's new Chemistry A Level and implementing the new practical endorsement.

Why did you choose to teach OCR's A Level Chemistry from September 2015?

"It was with trepidation that we approached A Level reform. The current system was embedded and working well and we had all of our systems and assessment in place. We liked the previous OCR specification we were teaching, so when the new specifications came out we hoped it would not be too different. We were very happy with the content and this was our main reason for choosing to stay with OCR. We hoped it would not be too different. I am delighted that we have stayed as the support has been superb."

IMPLEMENTING THE NEW PRACTICAL ENDORSEMENT

OCR's model for Practical Endorsement maps out 12 activities – or Practical Activity Groups (PAGS) – in each science.

How did you find the transition to the new approach to practical assessment?

"As a department we were concerned about the requirements for the Common Practical Assessment Criteria (CPAC) and how much recording and marking would be required. The online training for the lead teacher was simple to complete but very informative and allowed us to feel confident we had understood the CPAC guidance correctly. The availability of three experiments per PAG has allowed us to select the experiments we see as most suitable for our students and we have not felt the need to add our own, although this option is greatly welcomed."

"The students easily adapted to recording all practical work in the same way in a practical book, whether it is a PAG or not. As a teacher with more years of experience than I might care to admit, it is comforting to see practical return to the heart of science, rather than being a somewhat artificial add on with hoops to jump through. The students do not view PAG practicals any differently from others and they do not feel pressured to hit the target every time, and there can always be another opportunity to meet it. This is refreshing. The OCR PAG



Simon Langton Girls'
Grammar School, Canterbury

tracker is brilliant! It answers most of the questions that the monitor has, if you use it effectively. It is easy for all members of the department to use and the monitor liked the fact that all of our staff are trained and use it. It provides all of the information I have ever needed and more. I wouldn't change it at all."

"We had our monitor visit quite early on and we were unsure as to quite what to expect. The information from OCR gave clear expectations, but as is always the case with a new system there is always a degree of uncertainty. However, any concerns were soon diminished as our monitor was an experienced teacher who related well to the department and students. He was incredibly thorough but charming throughout and we were delighted to receive a glowing report."

"I am delighted to say that OCR has made the process as pain free as possible. We follow other examination boards for Biology and Physics and as Head of Science, Chemistry and Biology, I can hand on heart say that OCR have been the most on the ball, helpful and informative."

SUPPORT

"The information available from OCR has in every case far exceeded that provided by other examination boards and they have led the way, particularly with the CPAC lead teacher training. OCR has also introduced local network meetings. These have been a great opportunity to meet with other teachers and the subject leaders from OCR. There has been a theme to each event and a main speaker but much of each session has been given over to informal conversations and Q&A sessions which have been really helpful and informative, rather than just listening to a formal presentation. I feel I have gained a lot from these sessions, even if it is only to confirm that other centres are delivering things in a similar way and to gather a few more ideas. In fact following on from one meeting I have been working closely with another local school to share planning and assessment ideas."

www.ocr.org.uk/science

"As Head of a very large science department, I am delighted with the choice we made to remain with OCR for our A Level Chemistry. The course is well organised, the resources useful (and this is not always the case from other providers) and the support fantastic. The OCR subject specialists are in the real world with us and understand our needs as well as being very approachable. We will not be changing provider any time soon and I'm hoping to convert another subject or two to OCR. Thank you for all your support."

WHAT'S HAPPENED TO THE 'V' WORD?

PAUL STEER, OCR'S HEAD OF POLICY, EXPLORES WHAT'S IN A NAME



At this year's Conservative Party Conference, Justine Greening declared she wanted to make technical education an absolute priority. This has to be good news – it is refreshing to have a Secretary of State for Education prepared to give so much attention to courses that don't necessarily lead to GCSEs or A Levels.

Ms Greening used the phrase 'technical' five times in what was a very short speech and one that had to cover a lot of ground. 'Technical' seems to be the new word for 'vocational'. The Edge Foundation, a charitable body tasked with promoting vocational education, now says on its website: 'We are dedicated to raising the status of technical, practical and professional learning'. The term 'technical' has been brought to the fore by the recent review of technical education conducted by an expert panel chaired by Lord Sainsbury which has recommended a radical reorganising of training and qualifications into 15 routes, and a different approach to the structure of the market for qualifications. Apparently Robert Halfon, the Skills Minister, also said he much prefers the term technical to vocational. So what has happened to the 'V' word? Has it become like Voldemort in the Harry Potter books known as 'He-who-must-not-be-named'? Is this a rebrand?

To some extent, it probably is. The term vocational has been around so long its meaning is almost lost. It has been the butt of so many reforms that it is almost embarrassing for a government to have another go at reforming vocational education. Besides which, 'technical' has a certain aura of rigour about it – if something's 'a bit technical', it's difficult to understand, isn't it?

When OCR submitted evidence to the Wolf inquiry into vocational education,

we recommended creating a 'taxonomy' of vocational qualifications. We recognised that navigating the complex landscape of vocational qualifications would always be difficult unless they could be categorised in useful ways which identified their purpose and

*Is a vocational qualification the same thing as a technical qualification?
Almost certainly not.*

target audience. Something along these lines emerged in Professor Wolf's recommendations and eventually in government policy.

The DfE now organises vocational qualifications into four categories. In order to be recognised by the DfE for performance measures, qualifications have to have certain features which vary across the categories but include having a clear purpose, progression routes, a substantial examined component and recognition from HE and employers.

The categories are:

1. **Technical Awards**
2. **Applied General**
3. **Tech Levels**
4. **Technical Certificates**

Technical Awards such as Cambridge Nationals are delivered in schools, are the size of a GCSE, and are in no way intended to give a technical grounding in a particular job. So despite their title, they aren't technical in the real sense at all.

Applied General qualifications are recognised by HE for access purposes whether for an academic or vocational degree. Most of our Cambridge Technicals fall into this category.

According to UCAS, over a quarter of students accepted to HE in 2015 held at least one Applied General in their set of qualifications. They concentrate on knowledge and skills related to a broad sector rather than preparation for specific jobs and an analysis and evaluative approach which is strongly related to the academic pathway. They are seen as an academic, rather than a technical option. DfE is conducting a review of the Applied General category.

Tech Levels (Level 3) and Technical Certificates (Level 2) are most certainly 'technical'. They are very much focussed on work-related learning and the development of technical job-related skills. These are the qualifications that Lord Sainsbury looked at in his review of technical education. Technical Certificates are often the most problematic as they are part of the offer for 16 year olds who have not achieved 'good' GCSEs and need a range of different kinds of support and motivation to develop their potential. Throwing Technical Certificates at them may not be the answer.

These four categories of vocational qualifications – the result of the most recent reform initiative – are not simple to understand, and it doesn't help that the term 'technical' is used for things that aren't, but they still fulfil important and necessary roles in the education and skills system.

Whatever new umbrella phrases we use for 'that vocational stuff', it's still important to represent accurately what's underneath the umbrella – even if what we find is a bit...technical.

Email your comments to agenda@ocr.org.uk



JOIN OCR AT THESE EXHIBITIONS AND CONFERENCES AUTUMN/WINTER 2016/7

NOVEMBER

15 – 17

AoC Annual Conference

ICC, Birmingham

OCR is returning to exhibit at the 20th Association of Colleges (AoC) Annual Conference. OCR staff will be on hand on Stand 64 with guidance and expertise on all our vocational qualifications. This year, OCR is partnering with FE Week to sponsor the popular coffee bar, where you can receive a complimentary freshly ground coffee on us!

www.aocannualconference.co.uk

JANUARY

5 – 7

ASE Annual Conference

University of Reading

OCR is delighted to support this major event in the science calendar. Aimed at the primary, secondary and further education market, the Association for Science Education (ASE) Annual Conference is an invaluable opportunity to discover resources, enhance subject knowledge and share approaches to teaching. OCR's subject specialists will be on hand at Stand C7/C8 with plenty of new ideas to excite students in the classroom and support for teaching OCR's wide range of science qualifications.

www.ase.org.uk

FEBRUARY

9 – 10

The Music & Drama Education Expo

London Olympia

OCR will be exhibiting at the Music and Drama Education Expo, the UK's largest exhibition and professional development conference in music and drama for education. As always, our enthusiastic subject experts will be available over both days at our exhibition stand to answer your questions about our new reformed qualifications. Come and see us on stand J18.

www.musicanddramaeducationexpo.co.uk

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AoC Sport in the Curriculum Conference

Loughborough University

With OCR's impressive portfolio of sports qualifications offering a choice of approaches to the study of sport, we're delighted to be exhibiting at the only national event dedicated to driving excellence in teaching and learning and supporting curriculum managers in sport and active leisure departments. Our team looks forward to welcoming visitors to Stand 20.

www.aoc.co.uk/events



To find out what CPD events we are providing in 2016/17 to support the teaching of OCR's qualifications, take a look at www.cpdhub.ocr.org.uk

To join OCR at these events, visit www.ocr.org.uk/events to find out more



NO

SWEAT

Confidence is everything in sport. So we've taken the hard work out of teaching it. With our straightforward approach students of any ability can reach their goals.

New sports qualifications are here. Our GCSE (9-1) is now accessible to more students than ever and we've reduced the amount of admin in our Cambridge Nationals and Cambridge Technicals so there's less burden on you compared to the equivalent BTECs.

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