

Press release: UK-built satellite shines first light on air pollution

Launched into orbit on 13 October, the Sentinel-5 Precursor monitors the atmosphere to help us understand the spread of key pollutants and their impact on our changing planet.

The prime contractor for the development and manufacture of the satellite, which is part of Europe's world-leading environmental monitoring programme – Copernicus, was Airbus Defence and Space, based in Stevenage, Hertfordshire.

One of the first images shows nitrogen dioxide over Europe. Caused largely by traffic and the combustion of fossil fuel in industrial processes, the high concentrations of this air pollutant can be seen over parts of the Netherlands, the Ruhr area in western Germany, the Po Valley in Italy and parts of Spain.

Science Minister, Jo Johnson, said:

"After only a few weeks in orbit, this UK-built satellite is delivering real results, shining a light on air quality and demonstrating the important role of the UK's space sector in tackling global challenges.

"Our Industrial Strategy, published earlier this week, sets out a bold vision for the UK to become the world's most innovative nation and highlights our commitment to work with industry to capture 10% of the global space market by 2030."

One of the first images from the Copernicus Sentinel-5P mission shows nitrogen dioxide over Europe on 22 November 2017.

Another of the first images from Sentinel-5 Precursor shows [ash and smoke from the Mount Agung volcanic eruption on Bali](#), Indonesia, on 27 November 2017. As well as detecting different air pollutants, the mission also measures aerosols.

Data from the Sentinel satellites benefits the UK in areas such as emergency response and flooding, farming and environmental management, air quality, marine planning and fisheries. The Department for Environment Food and Rural Affairs and the UK Space Agency are championing the use of the satellite data for government policy making, scientific research and commercial services, as the data is also available to companies to create applications that help the wider economy.

The UK provides investment into the Copernicus programme through the European Union as well as additional UK Space Agency investment through the European Space Agency for the development of the Sentinel satellite technology and instruments.

Sentinel-5 Precursor is the sixth Copernicus Sentinel satellite. It carries

the most advanced multispectral imaging spectrometer to date: Tropomi, developed by Airbus DS Netherlands for the European Space Agency (ESA) and the Netherlands Space Office. This state-of-the-art instrument will map pollutants such as nitrogen dioxide, methane, carbon monoxide and aerosols, all of which affect the air we breathe and our climate.

Since the [satellite was launched](#), the instrument has been going through a planned decontamination process. Now, however, the door that kept Tropomi sealed for this purpose has been opened, allowing light to enter and the first images to be taken.

Even at this early stage in the mission's life, these first results exceed expectations. These new images offer a taster of what's in store once it has been fully commissioned for the task of mapping the entire planet every day with unprecedented accuracy, to take air-quality forecasting to a new level.

Speech: Nick Gibb: Importance of core knowledge sees return of textbooks

Over the past 7 years, the school system has seen dramatic improvements. Teachers and headteachers have been given greater control than ever before; leading free schools and academies are shining a light on what works; and a renewed focus on the importance of core knowledge has seen the first signs of a return to textbooks.

Since 2010, there has been a transformation of England's education system. The quality of education received by England's pupils has improved dramatically, with 1.9 million more pupils taught in good or outstanding schools than in 2010.

The proportion of pupils studying at least two science GCSEs has risen from 62% to 91% since 2010, better preparing them to compete in a global 21st century marketplace.

And the accountability system has been overhauled, turning attention away from an obsessive focus on the C/D borderline towards ensuring that all pupils make as much progress as possible. The focus pre-16 has rightly returned to ensuring that all children are taught a broad and balanced academic curriculum.

Whilst the government is determined to ensure that there is a stretching and prestigious technical route for pupils post-16, we know that a knowledge-rich academic curriculum pre-16 is the best preparation for success whatever route a pupil chooses to go down. That is why 96% of non-GCSE and IGCSE qualifications have been removed from the school performance tables since 2010.

As well as removing qualifications that do not serve the best interests of pupils, we have incentivised greater take-up of GCSEs that do prepare children for the next phase of their education. Thanks to the EBacc, we have seen dramatic increases in the proportions of pupils studying core academic GCSEs.

We know that lower participation from disadvantaged pupils in these core academic subjects can negatively affect social mobility. Yet overall, disadvantaged pupils remain almost half as likely to be entered for the EBacc subjects as their non-disadvantaged peers, and the gap in EBacc subject entry persists even among the most academically able disadvantaged pupils.

That is why the government has announced plans to have 75% of Year 10 pupils working towards the EBacc by 2022 and 90% of Year 10 pupils working towards the EBacc by 2025.

A recent paper from the Institute of Education found that:

- Students pursuing an EBacc-eligible curriculum at 14-16 had a greater probability of progression to all post 16 educational outcomes, while taking an applied GCSE subject had the opposite effect.
- There were no social class differences in the advantages of pursuing an EBacc-eligible curriculum which suggests that an academically demanding curriculum is equally advantageous for working class as for middle class pupils.

The government has been determined to drive up standards since taking office in 2010. In order to do so, there needed to be a focus on the system-wide options available to government, such as the accountability system.

But real change in education is driven by what happens in the classroom. In particular, what is taught to children and how effectively it is taught. Incentivising subject choices that leave open a wide array of technical and academic options post-16 is an important component of this. But so is the content of each subject.

The past decade has seen the emergence of a teacher-led drive to put 'core knowledge' at the heart of the curriculum. Influenced by the work of the great American educationalist E. D. Hirsch – who spoke at Policy Exchange in 2015 – the concept of 'cultural literacy' has gained currency.

Classroom teachers concerned about the deleterious effects of the 2007 skills-based curriculum expressed their dismay at the unsubstantiated ideological drive to focus on supposedly transferable, cross-curricula competencies.

In '7 Myths About Education', Daisy Christodoulou expertly dissected the commonly held belief that teaching transferable skills is desirable and possible. It is neither. As a result of her concise and devastating assault on the edu-myths that pervaded so much of education, the importance of domain knowledge is now much more widely understood.

Rob Peal documented the history of progressivism's expansion and domination

of all corners of the education system in his polemic 'Progressively Worse'. From Plowden and the later sweeping aside of the Black Papers, to the subversive takeover of the national curriculum project and the ideological conformism demanded by so many local education authorities, the damage inflicted on children was laid bare.

This teacher-led movement continues today. A vocal minority has formed an online community, fighting back against those who seek to return to the past. Winning converts as they go, these teachers have set the stage for important changes in classrooms all over the country. They have shifted the Overton window, as can be seen from the changing narrative of those whose influence they continue to push back.

The review of the national curriculum – led by Tim Oates – took place in this wider context. It overhauled a curriculum that was not fit for purpose, raising the bar for what was expected and putting knowledge back at the heart of schooling.

The new national curriculum insists that children should know their times tables by the end of Year 4. This is being supported by the introduction of the multiplications tables check, announced in the primary assessment consultation response earlier this year.

Work is underway to ensure that the Key Stage 2 reading assessment draws from the wider curriculum to help ensure that all children are being taught a broad and balanced, knowledge-rich curriculum that builds their wider vocabulary and best-prepares them for the rigours of secondary school.

From the high bar set by the national curriculum, innovative academy chains and leading free schools have built and are iterating demanding curricula. Take the Harris Federation, which recorded some outstanding results this year; 3 of their schools registering progress 8 scores above 1.

Time and again, when the strongest multi-academy trusts take over a failing school they turn it around. A stretching knowledge-rich curriculum and high behavioural expectations for all does work.

And there are a growing number of academy trusts and free schools demonstrating that academic excellence need not be reserved to London. This year, Dixons Trinity Academy in Bradford registered a progress 8 score of 1.22, putting it in the top 10 for progress achieved, demonstrating that geography need be no barrier to academic achievement.

Leading academies and free schools show what it is possible to achieve. They provide an evidence base for other schools to learn from. Year on year, as new secondary free schools reach their fifth year and their first set of GCSE results are published, it is becoming ever clearer what works in education.

Leading free schools and academies ensure a meticulous focus on developing coherent, well-functioning systems that save time and money, so that teachers can focus on what is important. In turn, greater focus is given to the detail of what is done in lessons.

Too often, those seeking to inform national education policy and those commenting on it miss the lessons that can be learnt from what the leading schools are doing. There is a pre-disposition to discuss the education system at the level of school-accountability or school structures. In turn, too little focus is given to what happens in the classroom, where so much attention is paid by these leading multi-academy trusts.

The reading revolution that has occurred in this country over the past 7 years has dramatically improved the education of hundreds of thousands of children. This year, there are 154,000 more children on track to be fluent readers than in 2012 thanks to the introduction of phonics.

The success of this policy is a victory for evidence over dogma. And it is a policy that other countries are seeking to replicate; as a result of the success enjoyed in England, Australia is looking at adopting the same evidence-based approach to early reading instruction.

However, appreciating the true scale of what has been achieved thanks to the phonics reforms requires an understanding of what difference has been made in the classroom.

We supported teachers to adopt evidence-based approaches to teaching early literacy by providing matched-funding for phonics resources and through the dissemination of best practice across the country. Consequently, the views of teachers about reading instruction slowly began to change.

By 2013, about two-thirds of primary teachers surveyed by the government agreed that using systematic synthetic phonics was important. Our reforms have been successful only because the intervention we are promoting – systematic synthetic phonics – works, and has decades of international evidence behind it.

Without the drive to promote the evidence in favour of phonics and change perceptions and practice in the classroom, the policy would not have been such a dramatic success.

The question that should be at the forefront of a policymaker's mind is: how is this going to change what happens in the classroom? This question is certainly at the centre of my thinking, as can be seen from the adoption of two important policies from top performing jurisdictions in the Far East:

- The introduction of Teaching for Mastery, adopting and adapting Shanghai's approach; and
- The re-introduction of textbooks into classrooms, drawing on the success of Singapore.

Thanks to the work of the teacher-led maths hubs, we now have 281 Mastery Specialists, working in 789 schools. By 2023, we expect 11,000 primary and secondary schools to be involved in the Teaching for Mastery programme. This teacher-led programme takes important aspects from the pedagogy that characterises the successful East Asian approach to maths teaching and translates it to English classrooms.

The national curriculum has raised expectations for primary schools and the evidence-based Teaching for Mastery approaches provide teachers with the tools they need to meet these expectations, exemplifying the important relationship between system-level and classroom-level in delivering successful policies that change what is happening in the classroom.

A key lesson that we have taken from the success of the Far East is the importance of textbooks. We know – thanks to the work of Tim Oates – that top performing jurisdictions have high-quality textbooks that work coherently with the curriculum.

In *Why Textbooks Count*, he makes clear the stark differences in our approach to textbooks and those of the highest performing jurisdictions. In England, only 10% of pupils' teachers use maths textbooks as the basis for their teaching compared to 70% in Singapore.

Textbooks provide the detailed knowledge implicit in the national curriculum programmes of study, which are succinct and broad descriptions of the content that needs to be taught. For example, the Key Stage 2 Science Curriculum requires 9-year-old pupils to be taught that "unsupported objects fall towards the Earth because of the force of gravity". This could be taught superficially or in a way that conveys a genuine understanding of the science involved. Herein lies the power of textbooks.

But despite their importance, textbooks have been on the decline for a long time in England's classroom. Ideological hostility to the use of textbooks, particularly in primary schools, developed in the 1970s. Their replacement with work sheets and hundreds of thousands of bespoke written lesson plans has added to teacher workload, detracted from coherence and negatively affected standards. But this long term movement away from the use of textbooks might be about to go into reverse.

Thankfully, the last few years has seen a number of high quality textbooks come to the market to support the new national curriculum. Responding to the demands of the new national curriculum and demands from primary schools for Teaching for Mastery materials, publishers are again writing knowledge-rich textbooks.

The latent demand for textbooks has grown over the past few years. The online curriculum debates centred on the role of knowledge organisers – led by the likes of Jon Brunskill and Joe Kirby – is evidence of interest in how knowledge can and should be sequenced and presented to pupils.

And increasingly, teachers like Robert Orme and Robert Peal have taken to writing their own textbooks. Drawing on the international evidence, these materials – honed in their own classrooms – are returning the textbook to the heart of schooling.

History and Religious Education have such a wealth of stories, characters, events and places that should be common currency for all. Textbooks are crucial for translating the framework of knowledge outlined by the national curriculum and bringing it to life.

The best textbooks do not recommend activities, prescribe schemes of work, take up space with enormous images, or offer guidance on writing style or exam technique. Those are all things teachers can do, and often enjoy resourcing.

Instead, they provide something teachers will always struggle to create on their own – high quality, considered, extended prose pitched ambitiously, but not unrealistically, which can form the basis for lessons and schemes of work.

The textbooks being launched tonight do just that. They are a bridge from the national curriculum that enables teachers to build the cultural literacy of their pupils and introduce them to the ‘best that has been thought and said’.

The new national curriculum was crucial for raising the bar and returning knowledge to the heart of schooling, but the teacher-led move back towards textbooks will be integral to ensuring that the national curriculum is as effective as we hoped.

They are yet another example of the focus that is needed on what is happening in the classroom. The government recognises the importance of textbooks, and will continue to support the development of high-quality, knowledge-rich resources. Already, work has begun on the curriculum fund announced in the manifesto, which will encourage Britain’s leading cultural institutions to develop knowledge-rich materials for our schools.

By focusing on how to support teachers to further improve what is happening in the classroom as well as the macro issues of the school system – such as the accountability system – the government is determined to build on the success of the past 7 years and ensure Britain is fit for the future.

Thank you.

[News story: Finance Bill 2017-18 legislates for Autumn Budget tax changes](#)

The Finance Bill takes steps to help young people with the cost of living, crack down on tax avoidance and evasion, and protect the environment.

Plans to introduce a Stamp Duty Land Tax relief for first-time buyers, back innovative businesses and crack down on tax avoidance and evasion took the next step forward today (1 December 2017) as the government publishes the Finance Bill 2017-18.

The Bill will legislate for tax changes announced at Autumn Budget 2017.

Mel Stride, Financial Secretary to the Treasury, said:

The UK must have an economy that is fit for the future and this Finance Bill takes important steps to deliver just that. We are backing the innovative businesses that power our economy, helping our young people to get on the property ladder and making our tax system fairer so that we can continue to fund our vital public services.

This Finance Bill takes steps to benefit young people, helping them with the cost of living and protecting our environment:

- abolishing Stamp Duty Land Tax (SDLT) for first time buyers purchasing properties worth up to £300,000, and reducing stamp duty for those buying properties worth up to £500,000
- helping to protect our environment and make our air cleaner by encouraging manufacturers to produce cleaner cars:
 - increasing by one band the amount of Vehicle Excise Duty new diesel cars pay in their first year
 - increasing existing Company Car Tax diesel supplement by 1%

It ensures our tax system is fair and collects the money we need for our vital public services by:

- removing the indexation allowance – an outdated relief for inflation which provides benefits to companies that are not available to individuals
- clamping down on tax avoidance, evasion, and non-compliance by:
 - closing loopholes in the anti-avoidance rules for offshore trusts, so that people cannot avoid paying UK tax on the benefits they withdraw from their offshore trusts
 - preventing companies from claiming unfair tax relief on their intellectual property
 - reducing online VAT evasion by making online marketplaces take more responsibility for the unpaid VAT of their sellers
 - tackling the use of disguised remuneration
 - ensuring companies are not able to claim relief for losses on the disposal of shares which do not reflect losses incurred by the wider group
 - extending landfill tax to illegal waste sites to crack down on rogue landfill site operators

And it backs the UK's innovative businesses and improves productivity by:

- doubling the annual amount an Enterprise Investment Scheme (EIS) investor can get tax relief on to £2m, when investing in knowledge-intensive companies
- doubling the amount of money that knowledge-intensive companies can receive annually through EISs and Venture Capital Trusts (VCTs) to £10

million

- stopping tax reliefs from being claimed for low-risk investments, re-directing funds towards the UK's risk-taking growing companies
- increasing the rate of R&D Expenditure Credit (RDEC) from 11% to 12%, so that companies can receive more support for research and development

Notes to editors

[The Finance Bill is published on the parliament.uk website.](https://www.parliament.uk website)

Press release: Appointments to the Social Security Advisory Committee

The new appointees are:

- David Chrimes
- Philip Jones

Existing committee member, Seyi Obakin, has also been appointed for a second term.

The appointments were made following open competition. The new members will start their 5-year terms on 1 February 2018.

Lady Buscombe said:

I am delighted to welcome David and Philip to the Social Security Advisory Committee, and to welcome Seyi back for a second term. They each have considerable knowledge and experience which will be of great value to the Committee, and I look forward to working with them.

Paul Gray, SSAC Chair, said:

These appointments bring a wide-range of expertise and skills to the committee. In particular, they will strengthen the committee's insight to how the benefit system impacts some of the most vulnerable people in our society. As Universal Credit full service continues to roll out to more complex cases, their understanding of issues affecting employers and workers will be especially valuable.

At the same time we will be losing 2 valued and highly-respected colleagues as their terms expire early next year. I would like to place on record my thanks to Rachael Badger and our vice Chair

Colin Godbold for their excellent contributions to our work over recent years, and wish them well for the future.

David Chrimes said:

I am delighted and honoured to be invited to join SSAC. I hope that my experience of disability, welfare and workforce representation will add to the considerable breadth and depth of knowledge and skill held by the committee, with whom I look forward to working.

Philip Jones said:

I am thrilled to have been appointed to SSAC. I look forward to working with the committee, government, employers and others in my area of focus in Wales to ensure we give the most vulnerable in our society, and especially disadvantaged young people, a real opportunity to show their true potential and make a positive contribution to society.

About the committee

The Social Security Advisory Committee is an independent statutory body established in 1980. It provides advice to the Secretary of State on proposals for the amendment of secondary legislation and on general social security matters.

The [Commissioner for Public Appointments](#) regulates all appointments made by the Secretary of State to SSAC. All such appointments are made in accordance with the [Governance Code for Public Appointments](#) published by the government.

SSAC members receive a daily fee of £256.80, for a time commitment of 2 to 3 days a month. The appointments are for a period of 5 years.

About the appointees

David Chrimes

Crown Advocate, Crown Prosecution Service and member of the FDA Trade Union Executive Committee. David will be the committee's representative of workers, a reserved post by statute.

Philip Jones

Director, Prince's Trust Cymru. Philip will be the committee's representative of employers, and will represent the interests of Wales. Both are reserved posts, the former by statute.

Seyi Obakin

Chief Executive Officer, Centrepont. Seyi will represent the interests of Black, Asian and minority ethnic groups, a reserved post.

Corporate report: Environment Agency 2016 data on regulated businesses in England

Updated: Corrected data on the waste crime data spreadsheet. The tonnage of waste prevented and stopped at a loading site in 2016 to 2017 was 15,113 tonnes.

These datasets support the [2016 Regulating for the environment, people and growth report](#).

Opra (operational risk appraisal)

The [Opra datasets](#) on data.gov.uk contain the Opra compliance ratings and the full Opra profiles. Installations and waste operations were scored to show how compliant these regulated sites were in 2016. The [Opra risk assessment](#) provides a rating that the Environment Agency uses to assess the risk to the environment for sites we regulate. A and B indicates good performance whilst bands D, E and F indicate poor performance.

Pollution inventory

The [pollution inventory dataset](#) on data.gov.uk contains information from the [pollution inventory](#) for each release type (to air, land and waste transfers off-site). The data is grouped by sector for the industrial activities the Environment Agency regulated in 2016.

Pollution incidents

The [pollution incidents dataset](#) provides information about incidents that met the Environment Agency category 1 and 2 impact criteria for those reported in 2016. These are the most serious environmental incidents we deal with.

Compliance assessment

The [national compliance assessment](#) and [compliance classification scheme](#) datasets on data.gov.uk contain details of compliance assessments and

breaches of permits recorded by the Environment Agency in 2016.

Enforcement action

The [prosecutions dataset](#) on data.gov.uk contains details of all prosecutions carried out in 2016 against companies by the Environment Agency. It covers all regimes we regulate. The dataset covers January 2000 to June 2017. Find out more about our [position on enforcement and sanctions](#).

Waste crime

The [waste crime summary dataset](#) contains details of the numbers, types and activities associated with illegal waste sites, large-scale illegal dumping and illegal waste exports. The data covers each financial year from 2009 (where available) to the end of March 2017.

The [waste investigations dataset](#) on data.gov.uk contains information about the Environment Agency's waste crime investigation work and outcomes. The dataset covers January 1997 to September 2017.

The [proceeds of crime dataset](#) on data.gov.uk contains details of all post-conviction confiscation orders. These are where we've recovered unlawful profits from illegal operators. The dataset covers January 2007 to July 2017.

The [illegal dumping incidents dataset](#) on data.gov.uk contains all incidents of illegal dumping (fly-tipping) reported to the Environment Agency. Illegal dumping means the illegal deposit of liquid or solid waste on land, not covered by a permit or exemption. The dataset covers January 2011 to March 2017.

Remaining landfill capacity

The [remaining landfill capacity](#) dataset on data.gov.uk provides data for the calendar year 2016. It details the reported remaining landfill capacity by operators at permitted landfill sites.

Data

We've made the data on this page available to members of the public for information. We've published each dataset under either the [open government licence](#) or the [Environment Agency conditional licence](#). Each dataset states the licence it's published under. If you use the information you must meet the conditions of the relevant licence.