

Press release: Earthquakes on Mars

A new mission to Mars involving UK science will be the first to study the heart of the Red Planet and measure 'Marsquakes' from its surface.

The NASA InSight mission, which stands for Interior Exploration using Seismic Investigations, Geodesy and Heat Transport, is due to launch from California aboard a United Launch Alliance Atlas V rocket at 12.05pm (BST) today (Saturday 5 May).

The InSight Lander will use cutting-edge instruments to delve beneath the surface and investigate the interior of Mars to improve our understanding of how such planets formed. It will also study tectonic activity and meteorite impacts, both of which could provide valuable knowledge about these events on Earth.

The UK Space Agency has invested £4 million in one of the key instruments onboard; the short period Seismometer (SEIS-SP). This will be on the surface of Mars to measure seismic waves from Marsquakes. Scientists expect to detect anywhere between a dozen and a hundred of these tremors up to 6.0 on the Richter scale over the course of two years.

Sam Gyimah, Science Minister, said:

The UK is playing an important role in this exciting mission to unlock the deepest secrets of our nearest neighbour in the solar system. An instrument that started life in a London university laboratory will end it on the surface of Mars detecting quakes and meteor strikes for the first time.

It's a great example of the importance of international collaboration and our work with the space sector as part of our Industrial Strategy, to ensure the UK remains at the forefront of pioneering science and exploration.

Prof Tom Pike from Imperial College London is leading a team with Dr Simon Calcutt from Oxford University and support from STFC RAL Space, to the work on SEIS-SP.

Prof Tom Pike said:

It's been enormously challenging to put together such a small sensor with the performance we need to detect Marsquakes. We've had the support of the UK Space Agency, and their considerable patience. Now we finally get to see our microseismometers leave the launch pad, next stop Mars.

The spacecraft is due to arrive on the surface of Mars on 26 November. The mission will conduct six science investigations on and below the surface of Mars to uncover the evolutionary history that shaped all of the rocky planets in the inner solar system.

The UK instrument will work together with seismometers from France, as well as major contributions from Switzerland, Germany and the US. Other instruments on board include RISE, a precision radio tracking of the lander that can determine the direction and motion of the rotation of Mars and the HP3 (Heat Flow and Physical Properties Probe) which will study heat flow by embedding a temperature sensor under the surface of Mars.

The UK space sector is playing a leading role in efforts to explore the solar system with additional collaborative projects including the ExoMars mission which will search for evidence of life on Mars using a rover on the surface and a spacecraft in orbit above it. The rover is designed and built in Britain by Airbus for launch in 2020 and the spacecraft recently returned the first photos from its new orbit showing an ice-filled, Martian crater.

The UK Space Agency, University of Leicester and Airbus are also involved in a mission to the closest planet to the Sun, Mercury, called BepiColombo, which is due to launch later this year.

The InSight launch will be [streamed live by NASA](#)

News story: Royal Navy gets first unmanned minesweeping system

Following a period of successful trials the demonstrator system could go on to be used by the Royal Navy in the future to defeat the threat of modern digital mines.

The system has been designed and manufactured by Atlas Elektronik UK in Dorset, under a £13 million contract with the Ministry of Defence which has sustained around 20 jobs and created 15 new jobs with the company.

Defence Minister Guto Bebb said:

This autonomous minesweeper takes us a step closer to taking our crews out of danger and allowing us to safely clear sea lanes of explosives, whether that's supporting trade in global waters and around the British coastline, or protecting our ships and shores. Easily transported by road, sea and air, the high-tech design means a small team could put the system to use within hours of it arriving in theatre. We are investing millions in innovative

technology now, to support our military of the future.

The system's innovative and modernised technology has the ability to defeat today's digital sea mines which can detect and target military ships passing overhead. The sweeper system, which features a "sense and avoid" capability, could also work together with other similar autonomous systems for the common goal of making our waters safer.

The project also aims to demonstrate the viability of an unmanned system that can safely and successfully clear mines and which is designed to be operated from a land or ship-based control station and can be deployed from a suitable ship or port.

Over the last four months, the system has been put through its paces by Atlas Elektronik and Defence Equipment and Support team members and the Royal Navy's Maritime Autonomous Systems Trials Team (MASTT).

The system was tested against a number of performance requirements, for example, how well it cleared mines, whether the autonomous system could successfully avoid obstacles and the overall system performance.

Brigadier Jim Morris Royal Marines – Assistant Chief of the Naval Staff in Maritime Capability, and Senior Responsible Officer for the Mine Counter Measures and Hydrographic Capability (MHC) programme said:

The Mine Countermeasures and Hydrographic Capability Combined Influence Minesweeping system is the Royal Navy's first fully autonomous capability demonstrator and paves the way for the introduction of this technology across the full range of maritime capabilities.

Combined Influence Minesweeping is a critical component of the Mine Countermeasures capability. This autonomous system will restore the Royal Navy's sweep capability, enabling it to tackle modern digital mines that may not otherwise be discovered in challenging minehunting conditions.

This autonomous sweep system represents a fundamental step in the Navy's transition to autonomous offboard systems to counter the threat posed to international shipping by the sea mine; we look forward to commencing demonstration of the associated minehunting system in 2019.

The handover of the system to the Royal Navy is a significant milestone for the Mine Countermeasures and Hydrographic Capability (MHC) programme, which aims to de-risk maritime autonomous systems and introduce these new technologies into the Royal Navy.

Director Ships Support Neal Lawson, of the MOD's procurement organisation, Defence Equipment and Support, said:

The autonomous minesweeper offers a commander the ability to defeat mines that cannot be countered by current hunting techniques and significantly reduces the risk to crew members in pressured and time-constrained operations.

The system can offer greater flexibility and upgradability, allowing the Royal Navy to respond better to the sea-mine threat in the long-term and operate more effectively around the world and I'm therefore delighted to be back here at Bingleaves, where I started my MOD career 29 years ago, to mark the handover of this critical programme.

An autonomous minesweeper system that can safely clear sea lanes of mines has been handed over to the Royal Navy, Defence Minister Guto Bebb has announced. Crown copyright.

The system will now undergo a series of more detailed trials with the Royal Navy.

The Royal Navy has a proud history of minesweeping, dating from World War One when even the likes of fishing trawlers were converted for use, dragging a chain from the vessel to clear German mines. Today, with far more sophisticated equipment, the service is still called upon to clear the waters of ordnance and maintains a world-leading role in minehunting, training alongside allies in the Mediterranean and the Gulf.

The MOD has committed 1.2% of the £36bn defence budget, supported by a dedicated £800m Innovation Fund, to cutting-edge science and technology.

An autonomous minesweeper system that can safely clear sea lanes of mines has been handed over to the Royal Navy, Defence Minister Guto Bebb has announced. Crown copyright.

[News story: Topics for discussions on the Future Framework at forthcoming meetings](#)

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News story: Newcastle seed business flourishes thanks to exporting

Seedcell manufacture biodegradable pods filled with different vegetable or herb seeds, allowing customers to sustainably grow their own produce at home. Each pod is pushed into the soil, where the seeds gets the correct amount of food and water to ensure germination.

Since 2017 the company has been working with advisers at the Department for International Trade (DIT), to help increase sales and target new overseas markets.

Its products are now sold in France, Malta and Italy, and Seedcell now has plans to export to the US and Australia within the next 12 months.

Launched in 2014 with just 1 employee, Managing Director Dan Robson now employs 3 full-time and 2 part-time members of staff thanks to the company's exporting success.

Dan Robson, said:

Exporting was a natural progression for the business, due to the UK weather. We decided to sell our products in places where sunshine is almost guaranteed and where people were more likely to be out enjoying their gardens.

A bad winter in the UK has had a direct impact on our sales, therefore exporting has been transformative for the business.

We worked with DIT to explore new territories and the team advised us on how we should adjust our packaging to suit overseas markets. Our main challenge was adapting to different languages, but thanks to DIT's advice, we found a solution by printing our instructions on each pod as an image, rather than a text description. This helped to give our products a universal 'language' that people in all markets could understand.

When we first started exporting, we had a lot of questions and initial doubts around selling overseas but DIT's experience and insights were invaluable. My main advice would be, don't walk

before you run. Do your research and with the right support, you too could benefit from exporting.

As part of its [Exporting is GREAT campaign](#), DIT is currently showcasing 30+ UK businesses – from a range of sectors and regions – to inspire and support firms up and down the country to export.

David Coppock, Regional Director for the North East, said:

Seedcell is a great example of a business that is seeing growth thanks to selling its products abroad. We've been heavily involved with the business by providing support and advice throughout its entire exporting journey and are pleased to see how successful the company has been in new markets.

We are seeing businesses of all shapes and sizes across the North East region realise the endless benefits of exporting and have 19 dedicated International Trade Advisers across the region ready to help other business like Seedcell. If you think exporting might be right for your business, please get in touch today and see how we can support you.

Business looking for support should visit great.gov.uk which gives UK businesses access to millions of pounds' worth of potential overseas business, helping them start or increase exporting.

[Speech: Secretary of State speech at the National Association of Headteachers conference](#)

I'm delighted to join you here today, and for the opportunity to speak directly to so many heads and school leaders.

Since I started this job in January, one of my first priorities was to go out and visit schools, visit nurseries, visit colleges.

You can read a lot of papers and talk to a lot of officials in the civil service – but nothing beats meeting the people who bring education to life.

And, of course, no two schools are the same but what I've seen everywhere is this enormous passion, enormous level of commitment and dedication that you just don't see in every profession.

With so many teachers telling me how deeply they enjoy what they do. The creativity. The freedom. The joy of learning, helping to develop young minds.

Looking around this conference room, I know that all of you want to lead great schools, to create a culture where teachers love their jobs and where children do their best.

As Secretary of State for Education, my simple ambition is for all children, whatever their background, to go to a good school where they are inspired to learn and can fulfil their potential.

I want us, together, to narrow the gap for the places left behind and provide better opportunities for the children who have the hardest start in life.

And in aiming for this I know that in education there is nothing more important than the people who are making it happen.

When I ask people to think back to their own days of school – about what they most remember from school, what made the difference for them, I have yet to hear anyone mention the smartboard. Or textbook, or a computer, or an exam. It is always Ms Smith or Mr Davies.

There are no great schools without great teachers and leaders.

And of course great schools thrive under great leaders – which is why I want to work with you. It's why I am determined to champion your profession.

Working with you to raise its status, helping to attract and retain more brilliant people to teach in our schools.

In short, I will do everything in my power to make sure teaching remains one of the most fulfilling jobs anyone can do.

One of my most urgent tasks is, therefore, to look at the barriers that can drive teachers, and leaders, out of the profession and may put people off in the first place.

Top of the list here is workload. Workload comes from different places.

Sometimes it can come from schools themselves, and policies on marking and data collection for example.

It can come directly from specific requirements set by government.

But it can also come indirectly from the pressures inherent in the accountability system.

And today I'm going to talk quite a lot about those pressures and about that system.

I don't need to tell anybody here that accountability is vital. Children only get one shot at an education and we owe it to them that they can get the best, where they are being let down we need to act quickly – so no one ends

up left behind.

But, that sort of action is rarely needed.

In fact, standards in our classrooms are higher than ever. 89% of schools, and 90% of your primary schools, are rated Good or Outstanding by Ofsted.

This is not to say that the system that we have right now is working perfectly.

We all know that if we went outside this room and tried explaining to someone not in the education sector, about Regional Schools Commissioners, Ofsted, MATs, coasting, below the floor – they would look pretty blank.

But what I've found from speaking to many of you these last few months is that even within the profession and within the sector, there can be confusion.

Confusion about the different actors within the system...who has the power to do what and on what basis, the exact circumstances that could lead to enforced structural or leadership change at a school.

All of this means that the spectre of our accountability system can loom large over schools.

Fear of inspection. Fear of a single set of bad results. Fear of being forcibly turned into an academy – all of this can create stress and anxiety, and that can percolate through the staff.

Ladies and Gentlemen, we can do better than this.

As members of NAHT you are, of course, doing your own thinking about accountability, and I want to work closely on this with you.

But I also wanted to come here today with something that I think itself is very important.

School leaders need better clarity on how the accountability system will operate, the consequences that can flow from it – and the roles of the actors within it.

So I am publishing today a statement that sets out key principles for how I see the system working in future – the next step will be consulting with you and colleagues on the details.

I urge everyone to read the statement in full but in essence it comes down to this:

We have many excellent schools in this country – schools with great leaders, great teachers.

And I have a clear message to these schools and their leaders – we, I trust you to get on with the job.

Ladies and Gentlemen, I trust that you know better than us – better than me, better than the Department for Education – how to improve your schools. You don't need government getting in your way.

We will, of course, take action where a school is failing – on those rare occasions where, frankly, the leadership isn't there to make the improvements needed then we must act decisively and make structural change where it's necessary.

But these are the measures of last resort – and I believe every school must be absolutely clear on the rare circumstances when this would happen – and when it wouldn't.

Ofsted is the body that can provide an independent, rounded judgement of a school's performance – data alone can't tell the whole story.

So I want to move to a system where, when it comes to educational underperformance, we only enforce academy conversion, leadership change or changing the trust a school is part of when there has been an Ofsted Inadequate judgement.

So that means we will not be forcibly turning schools into academies unless there is that judgement.

Now, I firmly believe that becoming an academy can bring enormous benefits to schools and their pupils.

Increasingly, becoming an academy also means schools coming together in a Multi Academy Trust, sharing expertise, working collaboratively, driving improvements.

Hundreds of schools every year voluntarily choose that route – to become an academy and join a Multi Academy Trust. And I want this to be a positive choice for more and more schools.

So I want to move away from forced academisation being seen as this punitive threat that can also hang over schools that are not failing.

But we must have a system that does more than just deal with failure. Which is why we will work to identify schools at risk... But we will also do so in the right way, making a clear offer of support for the current school leadership.

This support would come from Teaching Schools or other high quality school improvement providers – people with a proven track record.

I intend this to replace the current confusing system of having both a 'below-the-floor' standard and 'coasting' standards for performance.

There will be a single, transparent data trigger at which schools will be offered support in this way. We will consult on how this single measure should work.

And as I said earlier, school leaders above this threshold will know that they have full freedom to get on with their job – without interference.

What does this mean for how we work with schools?

I know that right now schools can sometimes feel accountable to multiple masters.

Regional School Commissioner representatives going into schools and performing visits that can feel a lot like inspections – making additional requests for data.

And that is something that comes about for well-intentioned reasons. But it can be confusing for schools. And I'm afraid it plays its part in helping to create a culture that drives some unnecessary workload for you and your teachers.

Ladies and Gentlemen, this will end.

Ofsted inspectors are the only people who should be inspecting schools – the clue is in the name.

Commissioners commission.

Ofsted inspectors inspect.

Which means no more RSC initiated visits that can feel like inspections with those extra demands for data, adding to bureaucracy – more time for schools to get on with the job that they're doing well.

I've been talking here about the standard of education provided in schools.

I will also be looking at how we can support schools that are in financial trouble or take action where there has been a serious breakdown of governance. I will be setting up far more robust oversight and challenge when it comes to the financial performance of academy trusts.

And there must also be improvements in the governance of MATs as they grow in size and number, and how we, on behalf of the public, hold them to account – and again, we'll seek your views on this.

The need to bear down on workload is not a new thing.

In 2014, the Department for Education launched the Workload Challenge. Thousands took part and, overwhelmingly, people talked about the sheer volume of lesson planning, marking and data management which was too often being driven by fear of inspection rather than for the benefit of the child.

Since then we have worked closely with Ofsted and others to bust myths about inspections.

I recently made a video with a clear message with myself alongside Amanda Spielman and others – committing to schools that you won't be judged for

cutting back on excessive bureaucracy.

And let me say again – neither Ofsted or DfE require you to do things like annotated seating plans, triple marking, deep marking, dialogic marking, colour coded marking, excessive monitoring of a child's progress...

The video has now been watched more than 75,000 times, and I hope you will all, not only watch it but share it. And if anyone does tell you that Ofsted require this or that, please show them that video too.

There's more to come from us on this. One area which many of you have raised with me is how the pressure to collect assessment data and evidence of progress has grown dramatically over the years.

In response, I have established a workload advisory group to look into this issue and publish recommendations.

And I am pleased to announce that this group will be chaired by Professor Becky Allen and the membership will include teachers and school leaders, as well as Ofsted and the unions – and I very much welcome NAHT's commitment to take part.

I also want to urge heads and leaders to play their part.

As I visit more and more schools, I discover that there isn't a uniform story on workload – teachers' experiences are very different; and schools' policies and practices are very different too.

I urge you to ask questions like: Do we need this much data collection? What does this extra time spent marking add?

And yes, Government has responsibility too.

In our drive to raise standards these last seven years, we have made great strides together.

However, the pace of change has been fast and that is why I've said that there will be no more new statutory tests or assessments for your schools, beyond those already announced, for the rest of this parliament as I've already announced.

And I will continue to work with NAHT and others to make sure that schools successfully embed and have the time to adapt to the changes that have already been announced and are coming through.

Of course, all of us here have a shared goal of making sure teaching remains an attractive, fulfilling profession.

Yes, teacher numbers are at an all time high and more people are returning to teaching this year – but, still, we know that staff turnover is a real challenge for schools.

Actually not just for schools. With record employment there has been

increased demand for talented graduates altogether.

We've brought in schemes like the student loan reimbursement pilot for new graduates.

But we need to go further and that's why over the coming months we will be developing an overall recruitment and retention strategy.

We will take an unflinching look at the things that discourage people from coming into teaching or make them consider leaving.

We will also look at how we support teachers to get better at what they do and hone their expertise as well as career progression, whether they want to get into leadership as you have, or stay and develop in the classroom.

I particularly want to support teachers early in their careers, when I know some new teachers feel a bit like having been chucked into the deep end before they've really learnt to swim.

And so I'm pleased we are setting out our initial response to our QTS consultation today.

Following strong support, I'm happy to announce that we will be introducing an enhanced offer of support for new teachers – including extending the induction period to two years.

And we will work with the profession to develop a new early career framework that will set out all the training and mentoring a teacher is entitled to in those first years.

I am committed to working with the profession to understand how to deliver these proposals and the resources needed to make them work.

It's not just the early years though – I want teachers to be able to develop and progress through clearer career pathways, including for those, as I said, who want to stay in the classroom as experts.

You've said you want professional qualifications including in a specialist subject – so we will work with the sector to support these new qualifications.

I'm also announcing today something that has been called for by the profession for some time – a new £5 million sabbatical pilot.

This will allow more established teachers to do something else for a period, whether that's working in an industry relevant to their field or doing academic research – or indeed coming to DfE to help shape policy.

Now, finally, I want to turn to an issue which I know is top of your minds.

I certainly don't pretend I can just stand up here at this podium and say a few words that will solve all of the challenges that you face in schools today.

It is true that schools get more funding than they used to but it is also true that society asks much more of schools than we did a generation ago.

It is true that if you compare our schools to other countries... according to the latest OECD data, per pupil, our schools get more government funding than countries such as Germany.

But there have also been real cost pressures on schools – pensions, National Insurance.

So, yes, it is challenging for schools making the numbers add up and I do pledge to work with you to bear down on some of the cost pressures as best as we can.

Working closely with you to make sure schools do get the best deals possible and can target precious resources at the frontline.

I want a close, collaborative relationship with you, with this profession, whether on reforming accountability, or reducing the data burden, strengthening professional development or reducing cost pressures.

I'm clear that our retention and recruitment strategy would be nothing without your voices, your expertise... heads, teachers, support staff and unions.

We have a powerful opportunity to raise the status of this profession, for teaching to remain one of society's most fulfilling roles...meaning that every child has the chance to fulfil their potential.

And I pledge to work with you all to make this a reality.