Press release: High tech system promotes wildlife around Devon and Cornwall roads

Images from space and computer wizardry have helped Highways England develop a ground breaking approach to promoting wildlife habitat along trunk roads in Devon and Cornwall.

Satellite photos and earth observation techniques have been combined with Highways England wildlife data in a software system that can predict areas where biodiversity schemes will pack the biggest punch.

And the system is proving so successful it has been nominated for an environmental award from CIRIA Big Diversity Challenge.

Highways England's ecologist, Leo Gubert, explained:

> It sounds complicated but essentially the software crunches our data on habitats and species together with information on the surrounding landscape to find the best locations for habitat creation and enhancement schemes as well as landscape management projects.
>
> We look at the populations and habitat connectivity for wildlife such as dormice, bats, endangered butterflies and also species of plants that are of conservation priority and then decide which schemes to prioritise.

The system has been used to deliver a vast woodland and hedgerow connectivity scheme at 21 sites along the A30 and A38 in Devon and Cornwall with 10,000 native trees and shrubs filling or reducing gaps in hedgerow and woodland along the roadside. In total the planting has connected over 105 miles of habitat on the verges and wider landscape adjacent to the roads.

Tree planting scheme on the A30/A38

Last winter a heathland creation scheme was also undertaken, with a vision to connect existing heathland on important sites such as Dartmoor, Bodmin and Goss Moor.

A planting scheme promoting habitat for the super rare marsh fritillary butterfly in the Goss Moor area in Cornwall has also been delivered.

The system which was developed in conjunction with CEH (Centre of Ecology and Hydrology) picked up second place in the medium/large scale award at the Ciria BIG Biodiversity Challenge ceremony at the Royal College of Physicians in London..

Leo added:

> I am delighted we have been shortlisted amongst so many other projects. It is a perfect example of how new technologies can be a powerful tool in the decision making process maximising our efforts to enhance biodiversity on our road verges.
>
> The result can be wonderful benefits for biodiversity on the land we manage while providing a real sense of achievement for everyone involved.

Highways England is committed to a national Biodiversity Plan which is being supported by a £30 million national investment programme over the next five years.

The plan recognises road verges and associated land can be managed to provide areas of habitat, relatively free from human access that may be scarce in the surrounding landscape.

These road verges can also be used to connect fragmented habitats in the wider landscape, enabling plant and animal populations to move and interact, and so become stronger and more resilient.

General enquiries

Members of the public should contact the Highways England customer contact centre on 0300 123 5000.

Media enquiries

Journalists should contact the Highways England press office on 0844 693 1448 and use the menu to speak to the most appropriate press officer.

Press release: Cycling boss swaps office for saddle in 300-mile challenge

Phil Tyrrell’s day job at Highways England involves delivering new cycle routes to make it easier for cyclists to cross motorway junctions and use major A roads.

Now he is putting his knowledge to the test by taking part in the four-day London to Paris bike ride on his 50-year-old Claude Butler Classique,

complete with its original Brooks leather saddle.

Phil, from Standish near Wigan, is raising money for the Wigan and Leigh Hospice after his wife had to face cancer twice herself. He said:

> I remember saving up for the bike when I was 14 or 15, using my pay from a paper round, Saturday jobs at Woolworths and the Golden Egg restaurant in Chester, and pocket money.
>
> I was made up when I could finally afford to buy my Claude Butler, and remember using it as much as I could to and from school and also at weekends. I could never bring myself to get rid of it so it's moved house with us over the years, but had been left unused for years.
>
> Earlier this year, I was persuaded to do the London to Paris bike ride and raise money for the Wigan and Leigh Hospice. My wife's had to recover from cancer twice so I wanted to give something back to the hospice. Realising I needed a road bike, I decided to dig Claude out from the back of the shed and get it renovated.
>
> The bike's only got five gears but it does what I need it to and we always get to where we're going in the end. I got a local repair shop to renovate it but I asked them to keep all the scratches as that's its history – and mine.
>
> I'm feeling a bit tense about the challenge as it's a long way, but I've been out on quite a few practice rides over the past few months and the old leather saddle is surprisingly comfortable. Hopefully I'll feel the same when I reach Paris!

Phil has been training for the challenge using some of the cycle routes he's been involved with planning as Highways England's head of cycling in the North West. The organisation has been given a special £100 million fund by the government to invest in 200 cycling schemes across England by 2021.

Recently completed projects in the region include new cycle paths through the busy Two Mills junction near Ellesmere Port, along the A585 near Fleetwood, and near junction 21 of the M60 alongside the A663 in Oldham. Improvements have also been made to footbridges, signs and road markings across the North West.

Phil added:

> We're committed to significantly improving safety across our road network for everyone, and want to provide cycling facilities that give people a genuine choice about whether to travel in their car or to get on a bike instead.
>
> Admittedly not everyone is going to want to use their bike for a

> 300-mile trip to Paris, but if we can encourage more people to use their bikes for local journeys then this should also improve the flow of traffic for drivers travelling longer distances.

Phil's cycling challenge between London and Paris takes place between Wednesday 19 and Saturday 22 September. More details are available at https://uk.virginmoneygiving.com/PhilipTyrrell.

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News story: Zero Emission Vehicle Summit

The UK held the world's first Zero Emission Vehicle (ZEV) Summit last week (11 to 12 September 2018), bringing together representatives from across the globe to support and collaborate on a zero emission future for transport around the world.

Ministers, officials and business leaders from over 40 countries descended on Birmingham and Bedford for the two-day event, which sought to accelerate investment in both zero emission technology and infrastructure.

The Prime Minister, Theresa May, told delegates at day one of the conference in Birmingham that she wants to see Britain "leading from the front and working with industries and countries around the world to spearhead change".

And to help support that aim, the government has pledged £106 million for research and development in zero emission vehicles, new batteries and low carbon technology.

This will be bolstered by over £500 million worth of investment, creating over 1,000 jobs across the UK.

A total of 55 people spoke at the summit, including keynotes from companies such as Nissan, who emphasised the need to focus not only on the car but on the energy network too.

Commitments made as part of the landmark summit include:

- signatories from 13 governments committing to a zero emission future for transport, through action including consumer incentives, international collaboration, integration of zero emission infrastructure into town planning and support for research and development

- the first meeting of the Electric Vehicle Energy Taskforce – a group convening government with the energy and automotive industries – to plan for future electric vehicle uptake and ensure the energy system can meet future demand in an efficient and sustainable way

- a Clean Van Commitment from 16 of the UK's largest van fleet operators to have nearly 2,400 ZEV vans by 2020 and go completely zero emission in cities by 2028

- a new £1 million fund from summit sponsors, Lex Autolease, to provide £1,000 off the first 1,000 pure electric vehicle orders from January 2019

- trials of new LEVC vans with London Fire Brigade and the Met Police

- plans for a new Degree Apprenticeship Centre at the University of Warwick which will focus on the high value manufacturing sector, backed by £10 million of government funding and with space for 1,000 students

Jesse Norman, Roads Minister said:

> No one nation can tackle the effects of climate change alone. But as a community of nations, taking global action, we can not only have a bigger impact but unlock huge shared economic opportunities.
>
> That's why the UK hosted the world's first Zero Emission Summit. We are working to create a platform for international co-operation and knowledge sharing on emissions issues, gathering together signatories from around the world to agree the Birmingham Declaration and, we hope, helping to create a cleaner, greener legacy for future generations.

Tim Porter, Managing Director of Lex Autolease, the vehicle leasing arm of Lloyds Banking Group, commented:

> As the global automotive industry goes through this transformative period, the leasing industry has a huge role to play. We have been

> working with customers for a number of years to help them upgrade to low emission vehicles – where it's the right move for them as individual drivers or fleets.
>
> One of the key benefits of leasing an electric vehicle is that customers avoid any of the potential risk associated with its future resale value. With battery technology and range continuing to improve, electric vehicles are fast becoming suitable for mainstream motorists. With this in mind, we're pleased to have announced our new £1 million fund to encourage wider take up of zero emission technology.

The summit follows the Prime Minister's ambition set out earlier this year to put the UK at the forefront of the design and manufacturing of zero emission vehicles, and for all new cars and vans to be effectively zero emission by 2040. The government's Road to Zero Strategy published in July set out a clear pathway to zero emissions, to give clarity and certainty to both industry and motorists.

The work is all part of the government's Future of Mobility Grand Challenge, outlined in its modern Industrial Strategy, aiming to help reduce greenhouse gas emissions, make travel safer, improve accessibility, and present enormous economic opportunities for the UK.

The summit was the next step in the mission to put the UK at the forefront of zero-emission technology saw industry stepping up to the challenge alongside the government.

Speech: HMCI commentary: curriculum and the new education inspection framework

What do we understand to be the real substance of education?

That was the question I posed nearly a year ago, in a commentary on the initial findings of our research into the primary and secondary school curriculum. I argued that the vast, accumulated wealth of human knowledge, and what we choose to pass on to the next generation through teaching in our schools (the curriculum), must be at the heart of education.

The research underpinning that commentary showed that there was a dearth of understanding about the curriculum in some schools. Too many teachers and

leaders have not been trained to think deeply about what they want their pupils to learn and how they are going to teach it. We saw curriculum narrowing, especially in upper key stage 2, with lessons disproportionately focused on English and mathematics. Sometimes, this manifested as intensive, even obsessive, test preparation for key stage 2 SATs that in some cases started at Christmas in Year 6. Some secondary schools were significantly shortening key stage 3 in order to start GCSEs. This approach results in the range of subjects that pupils study narrowing at an early stage and means that they might drop art, history or music, for instance, at age 12 or 13. At the same time, the assessment objectives from GCSE specifications were being tracked back to as early as Year 7, meaning many pupils spend their secondary education learning narrowed and shallow test content rather than broader and more in-depth content across a subject area.

Those of us who work in education should be clear that these practices do not represent a substantial education. The curriculum is not the timetable. Nor is it what we think might be on the exam. We all have to ask ourselves how we have created a situation where second-guessing the test can trump the pursuit of real, deep knowledge and understanding of subjects.

For our part, it is clear that as an inspectorate we have not placed enough emphasis on the curriculum. For a long time, our inspections have looked hardest at outcomes, placing too much weight on test and exam results when we consider the overall effectiveness of schools. This has increased the pressure on school leaders, teachers and pupils alike to deliver test scores above all else. Through our recent inspections and research, we have found that focusing on test and exam results can often leave little time or energy to think hard about the curriculum and how pupils should progress through it.

We need to ensure that when it comes to assessing schools' performance, we, as an inspectorate, play a role that complements performance data, not one that intensifies it. We now have an opportunity to start doing just that. This time next year, Ofsted will begin inspecting early years providers, schools and further education providers under a new framework. It is my aim that the new framework places much more emphasis than the current one on the substance of education: the curriculum.

Curriculum study – phase two

We need to assess a school's curriculum in a way that is valid, fair and reliable, and that recognises the importance of schools' autonomy to choose their own curriculum approaches. Schools taking radically different approaches to the curriculum must be able to be judged consistently. How we do this is an important question when planning the new framework and something we are already investigating in depth through our latest research work.

The findings from the 41 schools we visited for the first phase of our curriculum study already provide us with evidence of how most schools get it right, but how some get it wrong. We identified that there is a general lack of curriculum knowledge and expertise in the sector leading to some weak

practices, like curriculum narrowing and teaching to the test. We also had concerns about whether all pupils had equal access to the whole curriculum.

While understanding curriculum weaknesses in the sector is useful when thinking about the criteria of the new framework, alone it does not provide a rounded enough view of quality to be able to make accurate judgements on the curriculum. With this in mind, phase 2 of our curriculum research looked to identify positive influences on curriculum design.

We carried out a qualitative study of 23 schools, visited between January and March 2018. The schools were selected because their leaders were identified as being 'particularly invested in curriculum design'. We held an in-depth discussion with the curriculum experts at each school in order to understand their curriculum intent and how they perceived quality within their own curriculum design (see notes on research).

Curriculum intent

So what did we find?

The first thing to note about these schools is that, despite being purposively selected using the same criteria, most of them had a unique curriculum design. This was often related to the local context of the school and the variety of pupil needs. It was also related to the curriculum approach to which leaders subscribed. We have found it helpful to use 3 categories to think about these approaches, although of course each school is different and we make no value judgement about these categories.

Knowledge-led approach

In around a third of the schools, the curriculum reflected leaders' thinking about a knowledge-led approach. The leaders saw the curriculum as the mastery of a body of subject-specific knowledge defined by the school. Skills were generally considered to be an outcome of the curriculum, not its purpose. For instance, one leader described that when children are 'fluent' in knowledge – such as number bonds or 10 times tables – they can then apply them as skills. Another suggested that "the skills are the by-product of the knowledge. The knowledge is the most important thing; that is what we assess against". Knowledge acquisition, therefore, is the aim of this type of curriculum.

Curriculum leaders in these schools were clear that it is for them to decide on the 'invaluable knowledge' that they want their pupils to know as the content of the curriculum: the 'big ideas' in subjects – rather than deferring to what the GCSE syllabus or key stage 2 tests tend to assess. This often led leaders to focus on in-depth understanding of fewer topic areas rather than surface-level understanding of more content, as part of this mastery approach. These leaders also referred frequently to developments in cognitive psychology and theories of working memory as guides for their curriculum design.

Knowledge-engaged approach

Leaders in half of the schools were what we have described as ‘knowledge-engaged’. These schools were less reliant on curriculum theory than knowledge-led schools. However, knowledge was not absent; it remained a focus, albeit to varying degrees. For instance, some curriculum leaders described that “knowledge underpins and enables the application of skill”. However, a few also explained that they wanted children to learn skills alongside knowledge, ensuring that both were explicitly developed. For example, they wanted pupils to learn how to construct arguments and balance evidence alongside a knowledge of historical chronology.

Others in this category placed slightly more value on developing skill. One acknowledged the need for “a certain degree of knowledge to be delivered” before demonstrating a skill, but was clear that the skill was thought about first when mapping the curriculum. However, most of the participants did not perceive a tension between knowledge and skill, and instead saw them as intertwined. Leaders tended to value both, although emphases – and indeed language used – differed when they explained this. For these leaders, the curriculum was about how they could ensure that pupils can achieve both knowledge and skill. Within these schools, there was also a slightly stronger emphasis on cross-curricular teaching than in the knowledge-led schools. Leaders described this as important for making the curriculum relevant and meaningful to pupils and for putting knowledge into context.

Skills-led curriculums

Finally, we categorised a small group of schools as having skills-led curriculums. In these schools, the curriculum was designed around skills, learning behaviours and ‘generic knowledge’. Leaders placed an emphasis on developing the skills pupils would need for future learning, often referring to resilience, a growth mind-set and perseverance. These were explicit intentions rather than by-products of the curriculum, or developed through extra-curricular activities. Leaders in these schools placed limited value on knowledge within the content of their curriculum. Knowledge was often seen as just disconnected facts. Delivering skills was the priority.

Strengths and weaknesses

We observed strengths and weaknesses in each approach. Across all 3, we observed several weaknesses in some leaders’ descriptions of their curriculum intent. For example, one headteacher advocating a knowledge-led approach had a clear guiding idea for their curriculum design – knowledge and subjects are important – but this was only spoken about in general terms with no specifics. In contrast with other leaders who had a knowledge-led approach, they did not offer any real examples of how they or their staff plan or review the curriculum to ensure sequential, layered knowledge acquisition. In a few of the knowledge-engaged and skills-led schools, the curriculum was being conflated with preparation for exams. It was disappointing, for example, to be told by leaders that ‘reasoning skills’ in a subject were the ‘5 things you need to know to answer an exam question’ or that ‘the teaching

of facts was unnecessary’. This often led to a patchwork of curriculum fixes being supported that could be contradictory and lacking in coherence. This suggests that inspecting the ‘how’ as well as the ‘what’ of curriculum will be important in the new framework.

Encouragingly, however, we were able to identify a number of potential factors of curriculum quality across the sample. Most of the curriculum leaders from the knowledge-led and knowledge-engaged schools stressed the importance of the subject as a discipline. They provided pupils with subject-specific vocabulary and knowledge that allowed them to build links and enhance their learning across other subjects. However, this was mostly not explicitly taught or forced in leaders’ curriculum design.

Nearly all the curriculum experts we spoke to considered their local context and pupil needs when building their curriculum. These were clearly expressed, particularly when schools were in competition with selective grammar schools, in areas with large refugee, asylum seeker or migrant populations and where high levels of deprivation existed. The experts tended to talk about giving their pupils the knowledge or skills that were lacking from their home environments as a core principle for their curriculum and tailored their approach accordingly. Many of the leaders in these schools saw a knowledge-led approach as the vehicle to address social disadvantage.

Crucially, these schools did not put disadvantaged pupils onto a stripped-back curriculum. Instead, most of them made strong links between reading and curriculum access. Two secondary school leaders in areas of high deprivation had included Latin and philosophy as subjects at key stage 3, of which one had made them compulsory. Primary school leaders also enriched their schools’ quality of education with well-planned regular trips to the local area and beyond that were tightly linked to their curriculums. Several headteachers commented in similar terms: “If children have never visited a castle or dug their toes in the sand at the beach, how can they write about these experiences?”

However, in a few schools, the local context appeared to lead to low expectations about what leaders believed their pupils were capable of achieving. For instance, in one school with a large cohort of pupils from deprived areas, leaders were more concerned with ‘pupil engagement’ than curriculum content. This had led to decisions in the selection of English texts that were more about catering to pupils’ interests than enabling progression through the curriculum and deepening and widening their knowledge.

Curriculum design

Curriculum design in the sample schools was a reflective process that centred on what worked or did not for each school’s pupils. Most of the experts we spoke to saw regular curriculum review and renewal as essential. Many leaders said that they often included subject leaders and teaching staff in their regular curriculum discussions.

All leaders recognised the importance of progression, although there was

variation in the progression models they explained. Some leaders appeared to have moved only superficially beyond ‘levels’. They often showed misconceptions in how they understood and applied the concept of mastery.

However, others spoke clearly about having subject-specific progression models in place that focused on progression through the content to be learned. In these cases, the curriculum was the progression model. This was rooted in what leaders expected their pupils to know at each particular stage. In a few of the primary schools, there were only progression models in place for English and mathematics, and sometimes science. Encouragingly, these often reflected progression through the national curriculum. The progression model was generally less clear for other subjects such as music, art, geography and history.

It appeared harder for schools to model progression in terms of skills. Leaders who said they had attempted to map pupils’ progress in developing skills were generally clear about what they wanted pupils to achieve, for instance, developing their problem-solving or team-working skills. However, they were less sure about how they intended to do this. They also had no secure way of knowing whether pupils had acquired the defined skills. This was often in contrast to the knowledge progression models developed in these very same schools. In these models, the sequencing and order of what pupils were expected to know were much more clearly detailed and articulated.

Most of the leaders we spoke to also valued the use of both formative and summative assessment for capturing pupils’ progression through the curriculum, although again how they applied this varied. In some schools, assessment was linked to the use of ‘flightpaths’ or ‘pathways’ that linked progress to subject-related targets that were determined on pupils’ entry to the school. Other schools appeared to have a more useful approach that used ongoing assessment to check pupils’ understanding of the main curriculum elements. They then responded appropriately through teaching. There was an expectation that the information captured from assessment was to be used not only for identifying gaps in pupils’ knowledge, skills and depth of understanding, but also to inform and improve on future curriculum design.

Intelligent repetition of content was also valued, although its application differed between types of school. Regular retrieval was highlighted as a method to promote acquisition of core knowledge and efficient recall in the knowledge-led schools. They were comfortable with the concept that pupils need to be able to retrieve core knowledge quickly to use it efficiently and that this required practice. In the knowledge-engaged schools, content repetition tended to be a response to what the assessment data was telling them about gaps in their pupils’ understanding. Retrieval and intelligent practice were not necessarily ‘baked in’ to the curriculum, regardless of assessment information.

Finally, the evidence pointed towards the importance of leadership, and particularly forms of distributed leadership, when developing and implementing a curriculum. In most of the schools we visited, the headteachers’ enthusiastic leadership ensured a whole-school focus on the curriculum. However, this does not mean that one person should be responsible

for curriculum design. On the contrary, in a few schools, when the headteacher was the sole source of curriculum thinking, we identified potential issues regarding curriculum sustainability.

Instead, a more sustainable curriculum design appeared to be commonplace when there was potential for subject leads and classroom teachers to have an input. Some headteachers gave their subject leads a degree of autonomy to structure and plan their teaching of the curriculum because of the knowledge and expertise they had in their subject. This included setting aside time and space for staff to regularly discuss and review the content of the curriculum, albeit within the parameters determined by senior leaders through their shared vision and approach for the curriculum. This ensured that staff would not be reinventing the wheel or engaging in endless planning, but instead would be contributing to agreed curriculum principles.

Indeed, a key observation from our curriculum discussions was that senior leaders and subject leads within a school were often able to speak coherently and consistently on curriculum design. They typically shared a common language about the curriculum, which did not rely on using a mass of documents to articulate. Most of the experts in these schools lived and breathed their curriculum. In a few schools, we saw evidence that retaining specialist subject teachers appeared to be a further benefit of staff feeling that they had ownership and could contribute to curriculum decision-making.

Conclusions

Our phase 2 curriculum research shows that there are a number of approaches to curriculum design. The national curriculum provides us with an important benchmark, but beyond it the content and structure of knowledge and how this is delivered is something for school leaders to decide on. It should depend on a number of factors relevant to a particular school’s context and the knowledge and expertise of curriculum leaders.

The curriculum also gives a school purpose. Ultimately, the curriculum is the yardstick for what school leaders want their pupils to know and to be able to do by the time they leave school. It is therefore imperative that the new inspection framework has curriculum as a central focus. Yes, the current framework has curriculum tied in with leadership, in the sense that leadership should ensure that the curriculum has purpose and a clear design, but, as our research has shown, a successful curriculum is about more than just leadership. It includes how well the curriculum is implemented through well-taught and appropriately sequenced content, thoughtfully designed assessment practice and consideration of an appropriate model of progression.

Importantly, there need be no conflict between teaching a broad, rich curriculum and achieving success in exams. A well-constructed, well-taught curriculum will lead to good results because those results will be a reflection of what pupils have learned. Pupil attainment and qualifications will always remain important as one measure of a school’s effectiveness and of course hugely important to young people themselves. However, parents also need to know the substance of what their children are learning, not just in

Years 6 and 11 but throughout their time spent in school. Providing a more rounded picture of the curriculum is where inspection can play its part. It is essential, therefore, that we give curriculum greater coverage in the new framework. In the long run, a renewed focus on curriculum should reverse the current incentives that come from inspection being quite so focused on outcomes.

There are some who have suggested that because I have spoken about knowledge in the curriculum, I am advocating a pub-quiz approach to education, perhaps at the expense of developing skills or deeper understanding. This is just not true.

Without doubt, schools need to have a strong relationship with knowledge, particularly around what they want their pupils to know and know how to do. However, school leaders should recognise and understand that this does not mean that the curriculum should be formed from isolated chunks of knowledge, identified as necessary for passing a test. A rich web of knowledge is what provides the capacity for pupils to learn even more and develop their understanding.

This does not preclude the importance of skill. Knowledge and skill are intrinsically linked: skill is a performance built on what a person knows. That performance might be physical or cognitive, but skills matter and they cannot be separated from knowledge. They are, if you like, the ‘know-how’ in applying the ‘known’. Knowledge and the capacity it provides to apply skills and deepen understanding are, therefore, essential ingredients of successful curriculum design.

Next steps

The next phase of our research will take us a step further by looking at how curriculum implementation reflects the intent behind it. This is an important next stage, because leaders having well-meaning curriculum intentions in place is not a valid indicator of curriculum quality on its own. Focusing on implementation will allow us to see just how well what is envisaged translates into practice. We are nearly at the end of this stage. We will feed the findings into the forthcoming consultation on the new framework and setting them out publicly. This ‘phase 3’ has involved thorough testing of the curriculum quality factors we have devised following the phase 1 and 2 work. We are looking to understand which factors are most closely associated with curriculum quality, to ensure that inspection assesses that which matters most.

I hope this commentary has given you some insight into the ways our research is informing our thinking. We will continue to share the findings from our research and explain how it will feed into the development of the new education inspection framework. And of course, we will consult widely on the content of the new framework. We are not rushing into this. We want to make sure that we get it right and that it has broad support from the sector. I have said in the past that I want our work as an inspectorate to be evidence-based so that we can truly be a force for improvement. Our research programme

is helping to make this happen, and I look forward to sharing more fruits of this work in future.

Notes on research

Twenty-three schools were purposively selected for phase 2 of the curriculum study. These schools were judged good or outstanding at their last full inspection and were understood to be ‘particularly invested in curriculum design’. Schools meeting this criteria were identified through published inspection reports, recent media stories and our advisory curriculum panel. More schools were identified than were possible to visit. Some schools that were identified could not be included due to clashes with the inspection schedule. Schools were also not compelled to participate. Some balancing was required to ensure that the sample covered a range of schools types with a variety of curriculum dispositions. In total, we visited 12 primary and 11 secondary schools for this research.

The study was to identify the common factors typically associated with schools invested in curriculum development. Our main research questions were:

- how do curriculum managers perceive knowledge within their curriculum?
- what do curriculum managers do when designing, implementing and evaluating the curriculum?
- how have curriculum managers developed the curriculum over time?
- is there a common conceptual language employed by curriculum managers?

The fieldwork took place between January and March 2018. Visits involved a 2-hour discussion with curriculum experts at the school to discuss their curriculum intent. Discussion groups ranged in size, from 2 senior leaders to 10 experts across subject departments. The discussion was led by an HMI and supported by an Ofsted researcher. Each discussion was audio-recorded for transcription and coding. Looking at how well the curriculum was being implemented in practice was not part of this study. HMI therefore made no judgements on the curriculum quality of these schools.

The schools contributing to the research were:

Gallions Primary School, Newham

Malvern Wyche CofE Primary School, Worcestershire

Queensbridge School, Birmingham

Fulbridge Primary School, Peterborough

Jane Austen College, Norfolk

Barking Abbey School – A Specialist Sports and Humanities College, Barking and Dagenham

Elmhurst Primary School, Newham

Bennett Memorial Diocesan School, Kent

Thomas Buxton Primary School, Tower Hamlets

Stoke Park Primary, Bristol

Huntington School, York

Featherstone Primary School, Birmingham

Feversham Primary Academy, Bradford

Tauheedul Islam Boys' High School, Blackburn with Darwen

ARK John Keats Academy, Enfield

Blakesley Church of England Primary School, Northamptonshire

Anglo European School, Essex

Hadlow Rural Community School, Kent

XP School, Doncaster

Archibald Primary School, Middlesbrough

Sandon Primary Academy, Stoke-on-Trent

Charles Darwin Academy, Norfolk

East London Science School, Newham

National Statistics: Road fuel prices: 17 September 2018

Cost of unleaded petrol (ULSP) and unleaded diesel (ULSD) in the UK as at Monday 17 September 2018.