We welcome the recognition that a well-planned and sequenced curriculum is central to a high-quality education, and that this curriculum should allow all learners to progress in their skills and knowledge. We strongly support the inclusion of learners with SEND and those from disadvantaged background in

favour learners gaining an appreciation of the individual scientific disciplines, as this can help with conceptual understanding and support learners making informed choices about further study. This should not preclude teachers helping learners to see the connections between the disciplines.

- It is reasonable to assume that GCSE Combined Science is intended to be allocated twice the timetabled lessons of a single award GCSE, and the total of the three separate science GCSEs three times that amount. However, none of the schools surveyed allocated time in those proportions. In particular, 91% of schools allocate less time to a separate science GCSE than to other single award GCSE options. This raises questions about whether adequate time is made available for learning in the sciences, and whether that learning is appropriately accessible for learners across all attainment levels.
- We also see that teaching of science GCSEs is more likely than other subjects to begin in Year 9. We would not want to see this trend result in a narrowing of the overall Key Stage 3 curriculum. However, given that this practice is widespread and the decision may be an

We are also reassured by Ofsted's intention to apply a transition period to their judgements on development of curriculum plans – we have discovered through our own curriculum vision project that this can take significant time, which teachers will have to commit alongside existing workloads. We support the suggestion in Prof Daniel Muijs' comments [5] that an extension of the transition period beyond 12 months will be considered. Some education providers are starting from a low base, and it may take several years for them to produce and embed a curriculum along the lines that Ofsted is asking for. This may especially be the case in some primaries where science has been de-prioritised in recent years [3], and where specific expertise in science is not always present. Where schools are part way through the process of developing curriculum, HMIs should be mindful of their starting point, and the way in which the requirement to develop an effective curriculum has been balanced against the requirement for senior management to be realistic about managing staff workload and to consider teacher wellbeing.

We welcome the emphasis on support for teachers in the implementation of the quality of education criteria. In particular, that leaders should 'provide effective support for those teaching outside their main areas of expertise'. This is important in the sciences where teachers are often deployed outside of their specialist science discipline. In a recent survey [2] 38% of schools reported that fewer than three teachers were allocated to a typical GCSE combined science class. Further quantitative and qualitative evidence determined that even in cases where three teachers were allocated, this does not necessarily equate to three individuals with disciplinary expertise in each of biology, chemistry and physics.

The most effective teachers have good subject knowledge [6]. A teacher trained in one science discipline does not automatically have the knowledge and expertise to teach another science discipline without further training. In situations where teachers are required to teach outside of their area of expertise, for example because of staff shortages in a particular science discipline, HMIs should check that they are given time and opportunities to develop their subject knowledge and pedagogical content knowledge in advance of having to teach the unfamiliar material.

We also believe that teaching outside their area of expertise can increase teachers' workload and consequently have a negative impact on retention. Research from the USA found that first year teachers who were given a less challenging course load and taught a single subject, were less likely to leave [7]. Therefore, we recommend that Ofsted consider the extent to which schools allow new teachers to focus on just teaching their specire gis focus on just teach(c)18 595.4 841.8 reW*nBT/TT0 10 Tf7cubject, w

Effective discipline within schools is associated with teacher satisfaction, which in turn affects retention [1]. An added advantage of separating out learners' personal development from their behaviour and attitudes is that inspectors will be able to gain more of an insight into the working conditions for staff in the school.

1. Sims, S (2017).TALIS 2013: Working Conditions, Teacher Job Satisfaction and Retention, Statistical working paper. https://dera.ioe.ac.uk/30448/1/TALIS_2013_Evidence_on_Working_Conditions_Teacher_Job_Satisfaction_and_Retention_Nov_2017.pdf

We agree with the proposed focus of section 8 inspections to cover key aspects of the quality of education criteria as well as pupil behaviour and staff workload.

However, we do not have sufficient evidence form our networks to allow us to hold an opinion about increasing the length of these inspection visits.

We are supportive of Ofsted's plan not to use schools' internal performance data for current pupils as evidence during an inspection. Excessive, unnecessary data collection can add to teachers' workload pressures. Since unmanageable workload is probably the most important factor contributing to poor teacher retention [1], we hope that this change to the inspection framework will encourage school leaders to reflect on the internal assessment data they ask their teachers to provide.

1. National Audit Office. (2017, September). *Retaining and developing the teaching workforce.* Retrieved from https://www.nao.org.uk/wp-content/uploads/2017/09/Retaining-and-developing-the-teaching-workforce.pdf