1. **Tackle the science attainment gap.** Disadvantaged pupils make poor progress in science at every stage of their school career. The gaps grow particularly strongly between ages 5-7 and ages 11-16, which coincide with particularly significant times in cognitive development. Pupils from disadvantaged homes are much less likely than their peers to get good grades in science and to go on to take a science subject at A-level and beyond.

2. **Recruit and retain the best science teachers.** There is currently a shortage of science teachers in secondary schools in England:
   - Recruitment targets continue to be missed for physics, chemistry and maths teachers;
   - Science teachers are more likely to leave the profession than non-science teachers, particularly within their first five years of teaching;
   - The proportion of schools reporting at least one teacher vacancy across all science subjects has increased since 2010.

   High-quality teaching is a powerful driver of educational equity: schools need to invest in their science teachers’ development to recruit and retain them.

3. **Support all science teachers to improve their practice.** Subject-specific CPD is more effective than generic, pedagogic CPD. However, teachers in England are less likely to engage in subject-specific CPD than those in other high-performing countries. Schools should support teachers to develop their science subject knowledge, especially those teaching outside of their science specialism.

4. **Use science to help students learn across the curriculum, including literacy and numeracy.** Science involves learning a whole new language – the language of science – so introduce pupils to scientific literature (e.g. popular science books, news articles, even fiction) to explain new concepts and introduce vocabulary, not only in science lessons but also as part of whole-class reading and small-group teaching.

5. **Open the doors to rewarding and interesting careers pupils aspire to.** Young people from poorer homes are more likely to be uncertain about the qualifications they need to access their chosen career and get the skills they need. Whether they dream of becoming – for example – doctors or vets, Formula 1 engineers or software developers, microbiologists or psychologists, students will need good science grades to achieve their ambitions.

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2. Department for Education, Initial Teacher Training: trainee census, 2016-17
3. Education Datalab, Improving Science Teacher Retention, Wellcome Trust, 2017
4. Department for Education, Analysis of school and teacher level factors relating to teacher supply, 2017
5. Ibid.
7. ‘Why science and literacy are the perfect match’, Megan Dixon (TES, 11 Jan 2019)