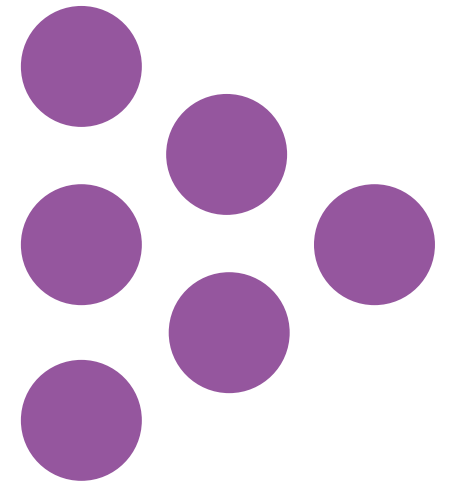

STEM Teacher Recruitment and Retention

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About NFER



We are the leading independent provider of education research and insights, working to create an excellent education for all children and young people

The future of children and young people is critically linked to the quality and level of education they receive. We create research evidence and assessments that inform policy makers and strengthen practice in the classroom to improve their outcomes.

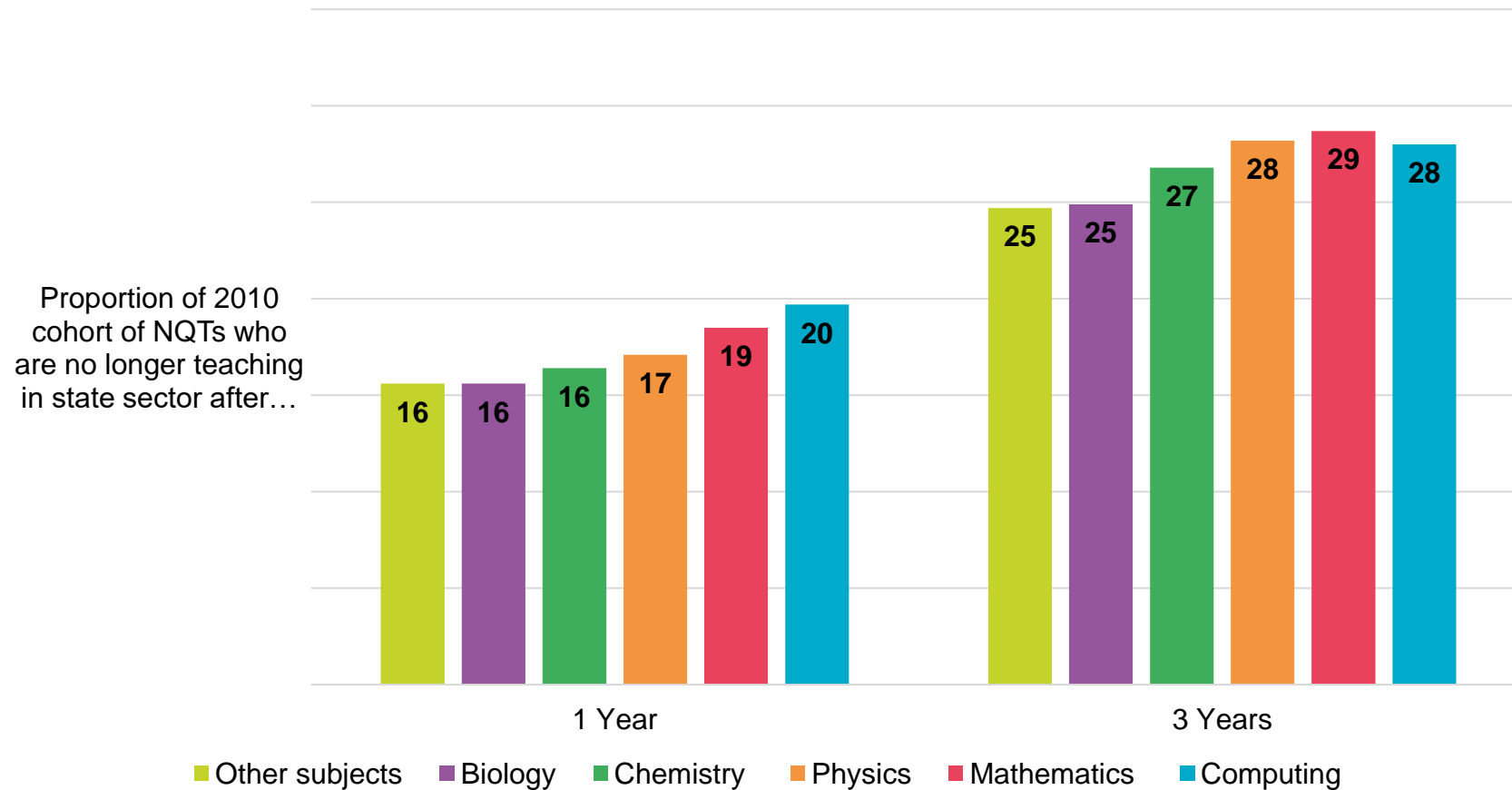
Overview

1. Trends and recent developments in STEM teacher recruitment and retention
2. Policy approaches for improving STEM teacher supply
3. The important role of science technicians in science education

Background

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- **Increasing teacher demand due to growing secondary pupil numbers**
 - **Strong prospects in graduate labour market outside of teaching**
 - High leaving rates of STEM teachers, particularly early in their careers
 - Under-recruitment to teacher training in STEM subjects
 - **Fall in real-terms teacher pay and erosion of competitiveness vs other professions**
 - **Generous training bursaries to encourage recruitment**
 - **Recent early-career retention payments**

Leaving rate of early-career teachers is higher among STEM teachers

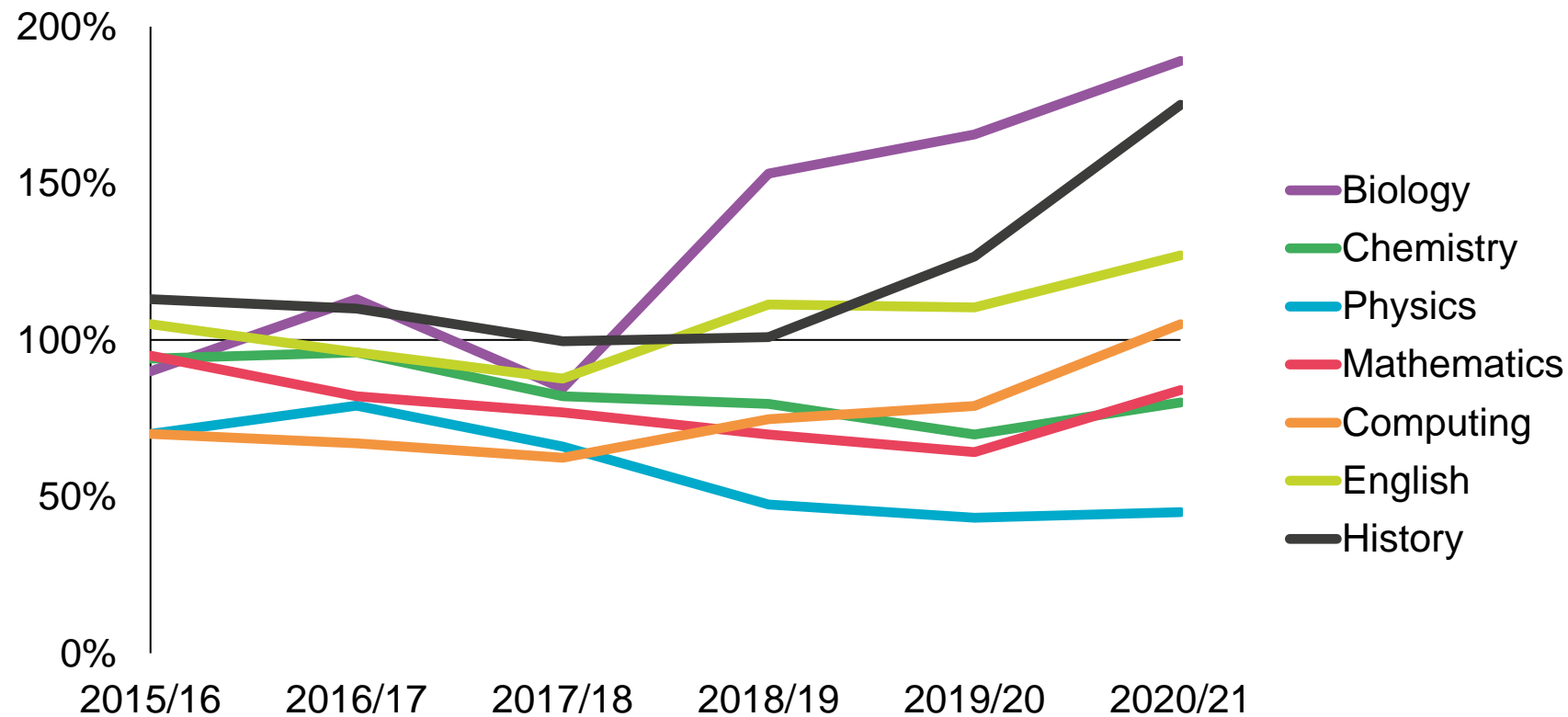


Source: DfE Teacher Analysis Compendium 4, 2018

Many STEM subjects under-recruited to teacher training up until 2020...



Postgraduate initial teacher training recruitment, compared to target



Source: DfE ITT Census, 2021

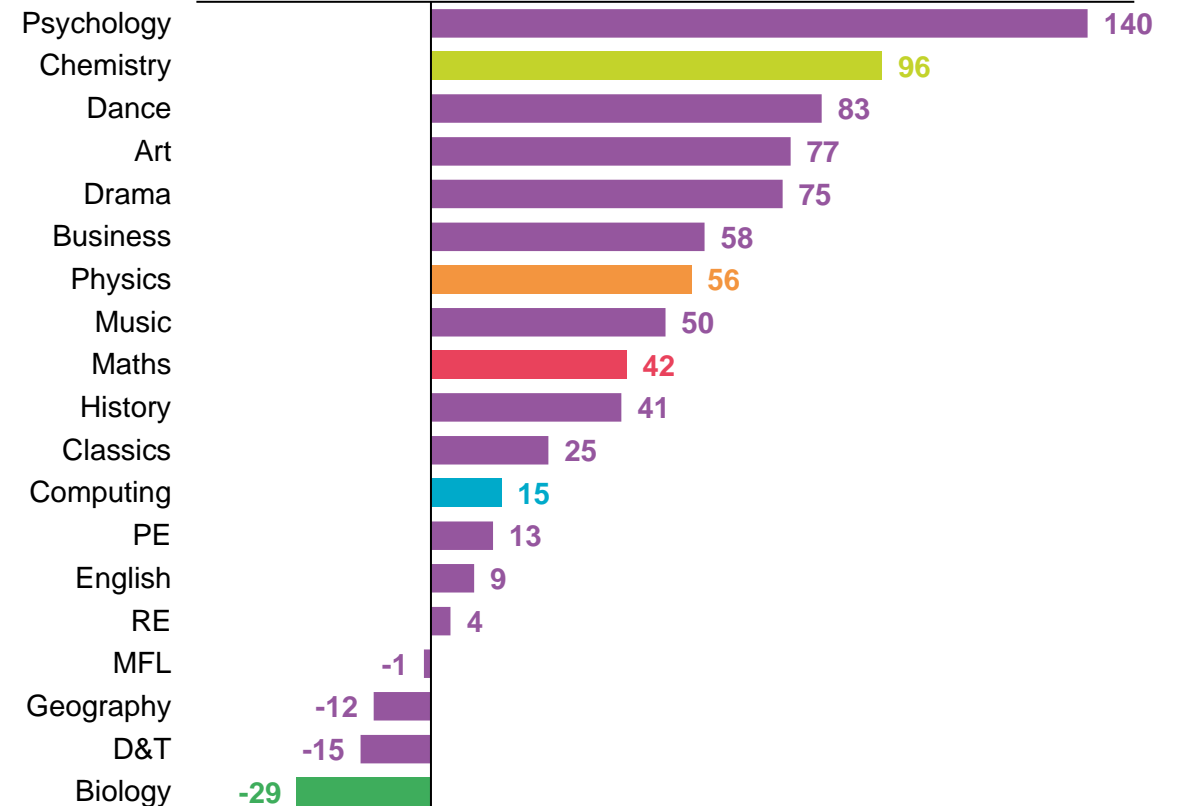
...but have seen strong growth in applications during 2021

Strong growth in most STEM subjects

Big bursary cut for biology

- Still likely to recruit strongly
- Likely switching into chemistry/ physics

Growth in placed applications (%), Mar 2021 vs Mar 2020



Source: UCAS Teacher Training Applications, 2021

Teacher workload and job satisfaction



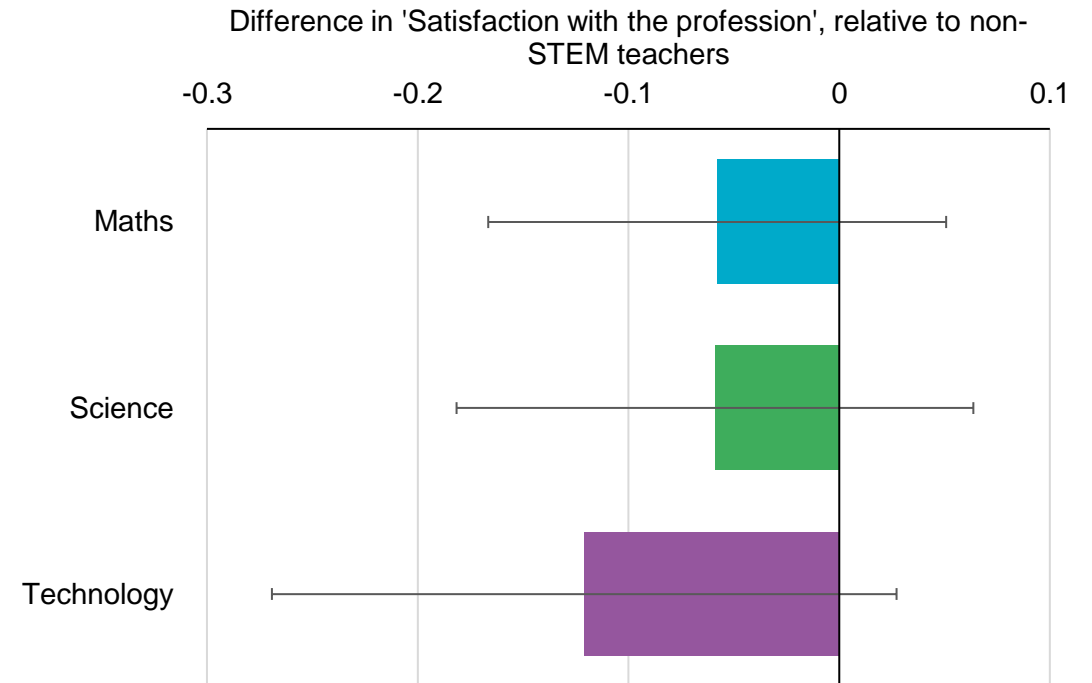
Few differences in job satisfaction and workload for STEM teachers

Workload is reason most cited by ex-teachers for why they left

- But similar for STEM and non-STEM (DfE)

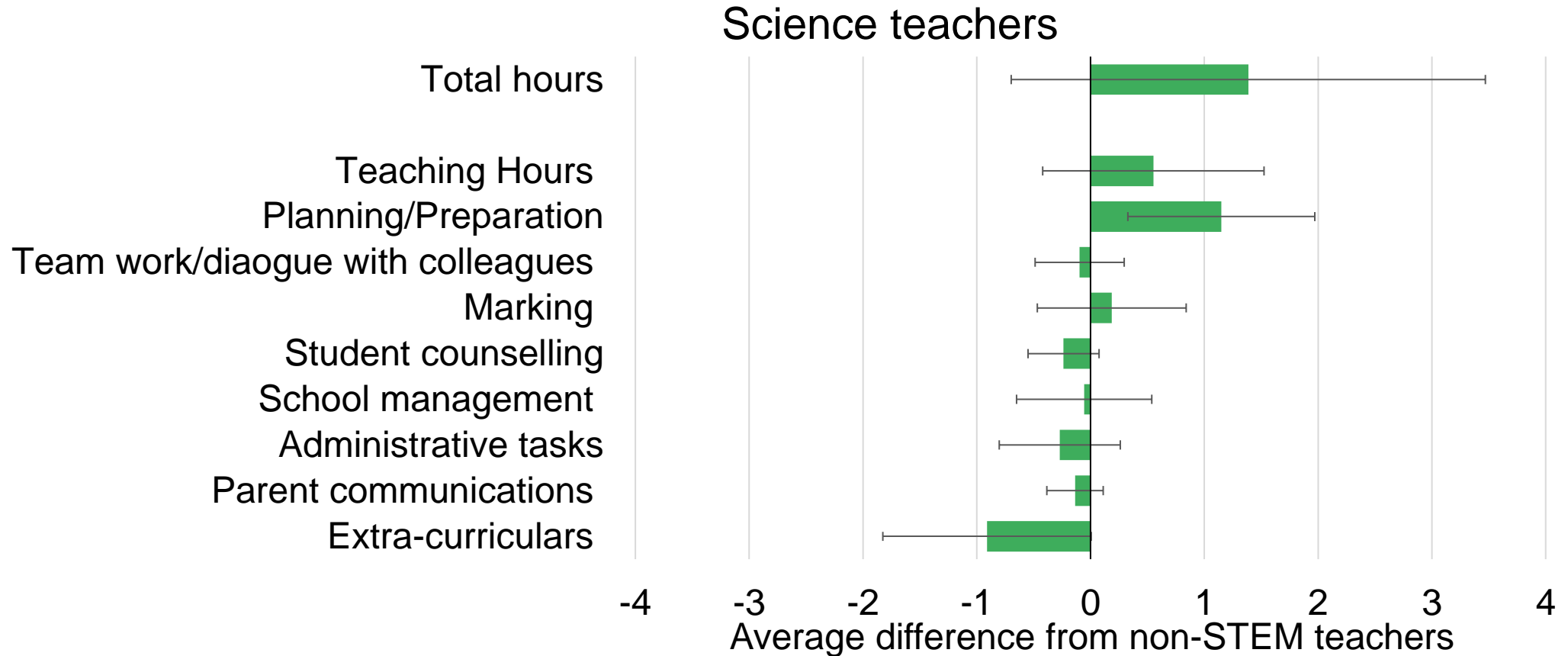
Job satisfaction is a key factor associated with teachers leaving

- Little difference in teacher job satisfaction between subjects



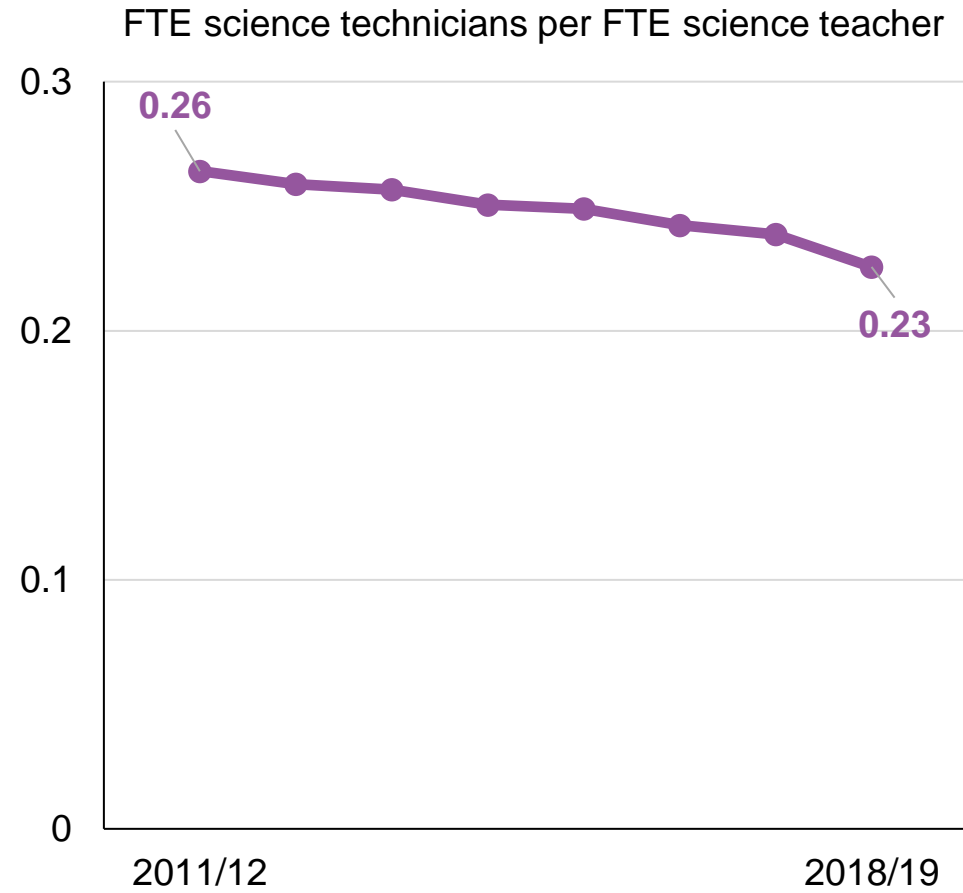
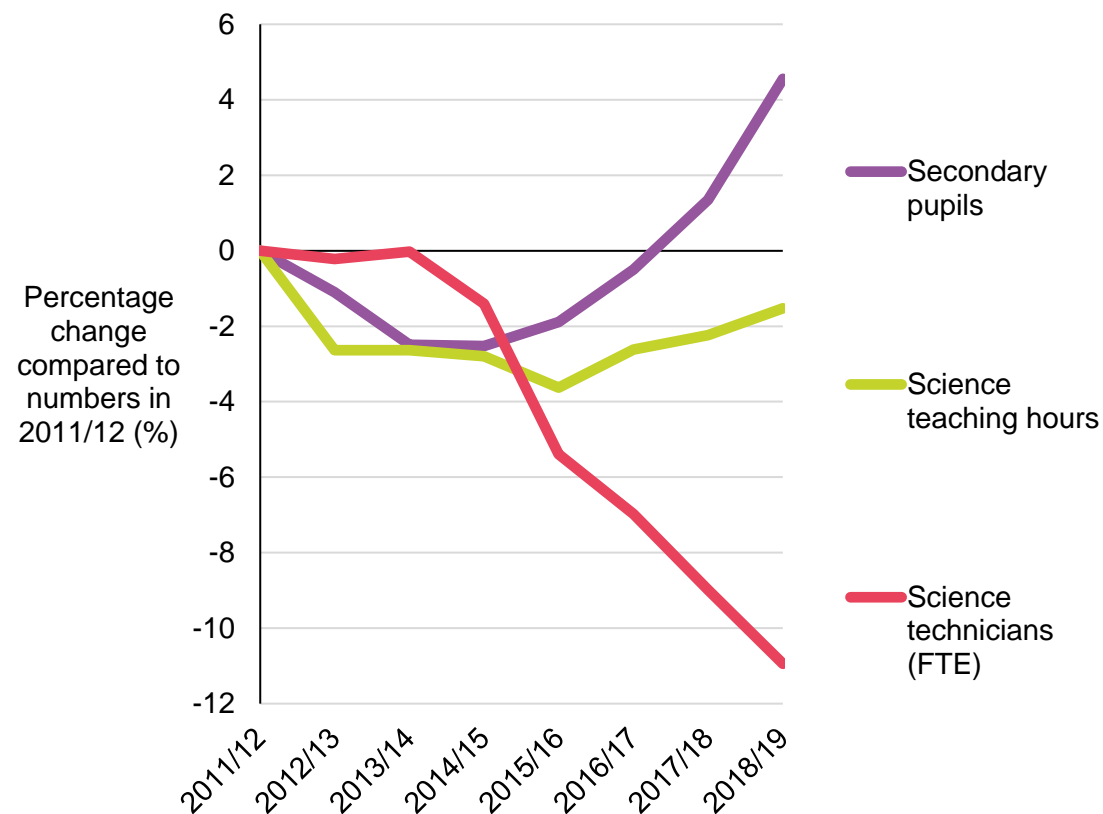
Source: NFER analysis of 2013 OECD TALIS data

Science teachers work slightly longer hours, spend more time planning/ preparing



Source: NFER analysis of 2013 OECD TALIS data

Ratio of science technicians to science teachers has fallen since 2011/12



Source: NFER analysis of School Workforce Census data, 2020

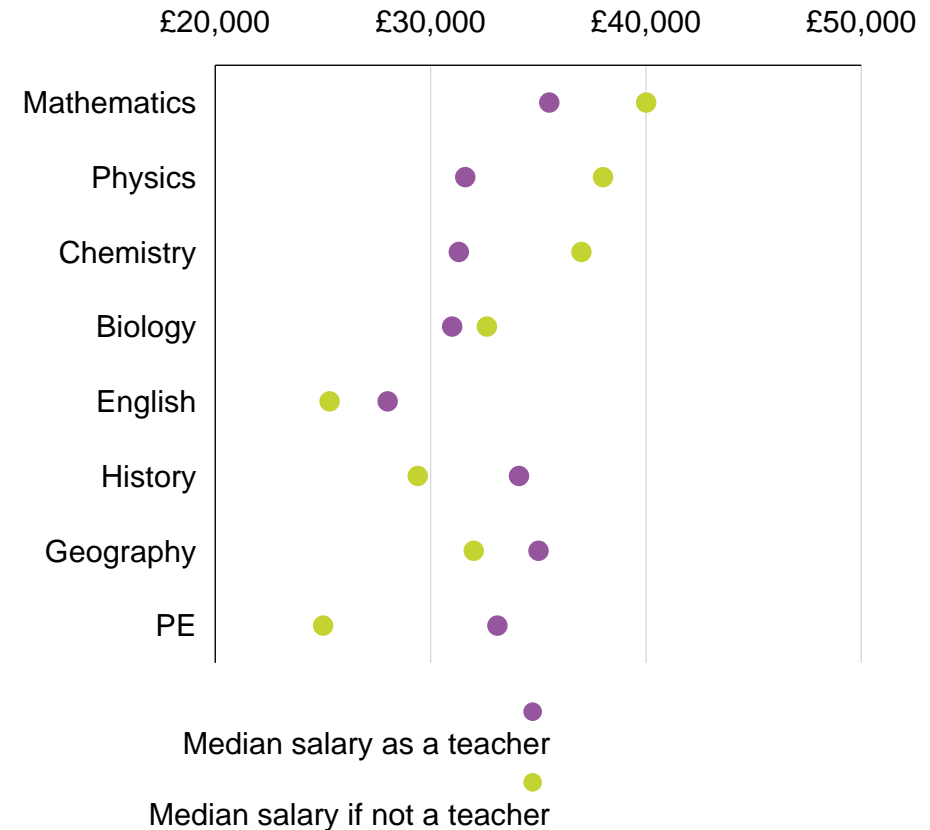
Teacher pay and outside options



Teacher pay relative to the outside option is a key factor

Pay is a more compelling explanation for STEM recruitment and retention challenges

Graduates with a STEM degree have better-paying options outside of teaching



Source: Migration Advisory Committee, 2016

Conclusions

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- **STEM teacher supply has been challenging for many years, but Covid-19 has offered a brief reprieve due to uncertainty in the wider labour market**
 - **Same challenges are likely to re-emerge as labour market recovers**

 - **What to do?**
 1. Reduce teacher workload to ensure it is manageable and sustainable
 - Marking, admin/ assessment, planning & preparation
 2. Ensure teacher pay is competitive with other professional careers
 3. Targeted financial incentives for hard-to-recruit subjects
 - Balanced between incentivising recruitment and retention in state-sector

Links

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- **Teacher Labour Market in England – 2021 Annual Report**
 - **Retaining Science, Mathematics and Computing teachers**
 - **The Science Technician Workforce in English Secondary Schools**

1946-2021

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