Thank you for your letter of 11 September 2013 about the recommendations of the Science and Technology Committee for practical science in schools. I apologise for the unacceptable delay in replying.

The fundamental importance of practical work as part of science education is reflected in the curriculum reforms we are currently undertaking. The new science programmes of study for key stages 1-3 include specific sections on 'working scientifically', which must always be taught alongside the subject content. We will be consulting shortly on the new programme of study for key stage 4, and we expect practical science will continue to form an integral part of GCSE science qualifications.

Excellent teaching is vital in making sure that pupils engage in high quality practical science, and my department is taking action to improve the quality of science teaching in schools. Bursaries of up to £20,000, and teacher training scholarships worth up to £25,000, are available to attract the best graduates into teaching. We are also funding the delivery of high quality continuing professional development (CPD) for science teachers through the regional network of science learning centres and local Science Learning Partnerships. These partnerships bring together Teaching Schools, other outstanding schools, higher education institutions, independent schools, employers and industry experts to deliver CPD locally. In addition to subject-specific CPD, the National STEM Centre in York also runs courses for leadership in science, which will help to spread good practice in schools.

My department is also funding the Stimulating Physics Network and the Triple Science Support Programme, both of which underpin the importance of practical work in engaging more pupils in the study of science at GCSE, A level and beyond. Together with the Department for Business, Innovation and Skills, we are also supporting the STEM Clubs and STEM Ambassadors programmes, which emphasise use of practical work to enhance students' engagement in science.
There are many resources available to schools to help them provide good quality practical work. These include a wide range which can be accessed through organisations such as the National STEM Centre, the science learned societies, the Association for Science Education, the Gatsby Charitable Foundation and the Wellcome Trust.

Determining the best method of assessing practical science within GCSEs and A levels is, of course, a matter for Ofqual. In April it announced that two grades will be awarded for the revised science A levels to be introduced from September 2015. One of these grades will reflect the direct assessment of practical work. Ofqual has found that the current assessment arrangements are not providing students with sufficiently valid, reliable and fair results. Their solution will resolve this shortcoming by freeing up awarding organisations to design innovative practical activities.

To support this approach, for the first time the A level content requires students to conduct a minimum of 12 practical activities, and sets out the techniques and apparatus that students should develop and use. These new arrangements will make sure that all students can demonstrate the key practical skills required to progress to undergraduate study.

Thank you for writing to me on this important matter. I hope my response is helpful to you.

Michael Gove