Monitoring practical science in schools and colleges

Appendix 4: School Staff Survey

Durham University

Prepared for the Gatsby Charitable Foundation and the Wellcome Trust

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2 School staff survey for heads of science, science teachers and science technicians - Year 1

In year 1 of the study, the school staff survey was a single survey for heads of science, science teachers and science technicians, with branching points taking each role to their relevant questions.

About your School or College

*1. School/College name (*Required)

*2. What is your school/college's postcode? (*Required)

*3. In which nation is your school/college? (*Required)

Select one.

○	England
○	Northern Ireland
○	Wales
○	Scotland

Please indicate your school or college characteristics

4. Age Range

Select one.

○	5 -19 Primary and Secondary
○	11 - 16 Secondary
○	11 - 19 Secondary
○	16 - 19 Secondary
○	FE College
○	Other

5. Funding

Select one.

○	Local authority/state funded
○	Academy/Free School
○	Independent
○	Other

6. Gender/Selectivity

Select one.

○	Boys non-selective
○	Girls non-selective
○	Mixed non-selective
○	Boys selective
○	Girls selective
○	Mixed selective

*7. Are you a science technician? (*Required)

Select one.

○	Yes	(Go to question number 91.)
○	No	(Go to question number 8.)

Current Students

8. How many students attend your school/college?

9. For schools/sixth-form colleges only:

	Number
How many 15-16 year olds attend the school?	
How many 15-16 year-olds take examinations in three separate science subjects (physics, chemistry and biology)	
How many post-16 students attend the school/college?	
How many post-16 students study one or more sciences?	

10. For FE colleges ONLY: How many students study one or more sciences at A/AS-level, Higher/Advanced Higher or academic equivalent?

11. Does your school/college offer a regular extra-curricular STEM (Science, Technology, Engineering, Mathematics) club that includes practical work in science?

Select one.

○	Weekly or fortnightly
○	Monthly
○	Annually or few times a year
○	Don't have a club

*12. Are you Head of a Science Department? (*Required)

Select one.

○	Yes	(Go to question number 13.)
○	No	(Go to question number 29.)

Departmental Structure

13. Does the school/college have separate departments for Physics, Chemistry and Biology?

Select one.

○	Yes	(Go to question number 14.)
○	No	(Go to question number 15.)

14. Please indicate your department

Select one.

○	Physics
○	Chemistry
○	Biology

15. Please indicate the number of students studying PHYSICS

	Number
Number of 11 – 14 year-olds	
Number of students doing GCSEs/Nationals or equivalent in the subject	
Number of students doing AS/A/Higher/Advanced Higher or equivalent in the subject	

16. Please indicate the number of students studying CHEMISTRY

	Number
Number of 11 – 14 year-olds	
Number of students doing GCSEs/Nationals or equivalent in the subject	
Number of students doing AS/A/Higher/Advanced Higher or equivalent in the subject	

17. Please indicate the number of students studying BIOLOGY

	Number
Number of 11 – 14 year-olds	
Number of students doing GCSEs/Nationals or equivalent in the subject	
Number of students doing AS/A/Higher/Advanced Higher or equivalent in the subject	

Staffing

18. How many science teachers (full-time equivalent, FTE) teach in the school/college?

19. How many teachers (FTE) teach each of these subjects?

	Number
Physics	
Chemistry	
Biology	

20. How many technicians (FTE) in total support science in your school/college?

21. How many technicians (FTE) support each of these subjects?

	Number
Physics	
Chemistry	
Biology	

22. Are any technician positions currently unfilled?

Select one.

○	Yes
○	No

Department Budget

23. What is the current annual budget (excluding staff salaries) allocated to science from your school/college?

	£
Budget for the Science Department/ALL specialist departments	
If applicable, budget for YOUR SPECIALIST SUBJECT/DEPARTMENT only	

24. What was LAST YEAR'S annual budget (excluding staff salaries) allocated to science from your school/college?

	£
Budget for the Science Department/ ALL specialist departments	
If applicable, budget for YOUR SPECIALIST SUBJECT/DEPARTMENT only	

25. Please state the proportions of your department budget allocated to these areas of expenditure (Note: Percentages do not need to add up to 100%)

	Proportion allocated (%) of total
Consumables and equipment for practical work	
Photocopying/reprographics - for hard copy worksheets, examinations etc.	
ICT - software, hardware, data logging	
Science-specific professional development	

Laboratories

26. How many laboratories are available in your school/college?

	Number of laboratories
Physics laboratories	
Chemistry laboratories	
Biology laboratories	
General science laboratories	

27. To what extent are science lessons taught in their appropriate laboratories, i.e. physics lessons in laboratories with physics equipment etc? PLEASE NOTE: Post 16 category - In FE Colleges this applies to AS/A2/Highers/Advanced Highers or academic equivalent ONLY

Select one per row.

	All lessons	*Most lessons*	*About half of the lessons*	*A few lessons*	*None*
11 – 14s	○	○	○	○	○
14 – 16s	○	○	○	○	○
Post 16	○	○	○	○	○

28. How satisfied are you with the following factors in your department for delivering high quality practical work?

Select one per row.

	Very satisfied	*Satisfied*	*Neither satisfied nor dissatisfied*	*Dissatisfied*	*Very dissatisfied*
The department has sufficient laboratory facilities	○	○	○	○	○
The department has sufficient equipment and consumables	○	○	○	○	○
The department has sufficient technical support	○	○	○	○	○
The department has a sufficient budget	○	○	○	○	○
The teachers have sufficient competency	○	○	○	○	○
Teachers are offered sufficient professional development	○	○	○	○	○

Practical Work Teaching this current year

Practical work is defined in this study as:

"A learning activity in which students observe, investigate and develop an understanding of the world around them, through direct, hands-on, experience of phenomena or manipulating real objects and materials."

29. Have you received any professional development related to teaching science practical work in the current academic year?

Select one.

○	Yes	(Go to question number 30.)
○	No	(Go to question number 31.)

30. Please indicate the number of days

The next questions relate to teaching specific age groups (11 – 14, 14 – 16, Post-16). Please answer questions for each age group you teach.

31. Are you teaching A/AS/Advanced Highers/Highers to Post-16 students in schools or colleges in the current academic year?

Select one.

○	Yes	(Go to question number 32.)
○	No	(Go to question number 47.)

Please indicate ONE science subject and Post-16 qualification you are teaching this year and answer all questions about teaching with this subject and qualification in mind.

32. SUBJECT

Select one.

○	Physics
○	Chemistry
○	Biology
○	Other (Please specify):

33. QUALIFICATION

Select one.

○	A-level
○	Advanced Highers
○	AS-level
○	Highers
○	Other (Please specify):

34. Please specify the Awarding Organisation whose specification you are following for this qualification:

Select one.

○	AQA
○	Edexcel
○	OCR
○	CIE
○	IB
○	CCEA
○	ICAAE
○	WJEC
○	SQA
○	Other (Please specify):

35. How much timetabled time (in hours) is allocated to the selected Post-16 subject and qualification each week?

Hours

36. Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year. (Please use decimals if necessary, e.g. 3.5)

	Number of hours each week
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

37. For your selected subject and Post-16 qualification, approximately how many days are allocated to each of these activities in an academic year?

	Days in a year
Outdoor practical work/fieldwork	
Off-site visits to science related industry, museums etc.	

38. Has the number of days for these activities changed since the last academic year?

Select one per row.

	Increased	*Decreased*	*Stayed about the same*
Outdoor practical work	○	○	○
Off-site visits	○	○	○

39. For your selected subject and Post-16 qualification, approximately how many practical science activities will a student carry out during the current year?

40. Has the number of practical work activities/experiments altered since last year?

Select one.

○	Increased
○	Decreased
○	Stayed the same

41. For your selected subject and Post-16 qualification, how much lesson time (in hours) is allocated to preparing for and carrying out practical work assessment required by the Awarding Organisation in the current academic year?

Hours

42. Please indicate how often the students in the selected subject and Post-16 qualification work individually, in pairs or in groups when carrying out practical work activities/experiments

Select one per row.

	Always	*Most of the time*	*About half the time*	*Seldom*	*Never*
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

43. Please indicate how frequently students in the selected subject and Post-16 qualification do the following in their practical work activities/experiments.

Select one per row.

	All activities	*Most activities*	*About half of the activities*	*A few activities*	*No activities*
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

44. For the selected subject and Post-16 qualification, please compare and rate the impact of these factors on choosing what practical work to include in your lessons

Select one per row.

	High Impact - 5	*4*	*3*	*2*	*No impact - 1*
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

45. For your selected subject and Post-16 qualification, please compare and rate the importance of these aims in your practical work teaching

Select one per row.

	High importance - 5	*4*	*3*	*2*	*No importance - 1*
To develop practical skills for laboratory work	○	○	○	○	○
To learn the principles of scientific inquiry	○	○	○	○	○
To develop team-working and problem-solving skills	○	○	○	○	○
To motivate and engage students	○	○	○	○	○
To prepare students for future science-related jobs	○	○	○	○	○
To develop conceptual understanding	○	○	○	○	○
To develop students' creativity and critical thinking	○	○	○	○	○

46. Please rate how well you think students in your selected subject are prepared for practical activities/experiments when they start the Post-16 phase.

Select one per row.

	Very well prepared	*Well prepared*	*Marginally prepared*	*Unprepared*
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

47. Are you teaching GCSE/ National science to 14 – 16 year old students in schools or colleges in the current academic year?

Select one.

○	Yes	(Go to question number 48.)
○	No	(Go to question number 65.)

Please indicate ONE science subject and 14 – 16 qualification you are teaching this year and answer all questions about teaching with this subject and qualification in mind.

48. SUBJECT

Select one.

○	Physics
○	Chemistry
○	Biology
○	Other (Please specify):

49. QUALIFICATION

Select one.

○	National 4
○	National 5
○	Single subject GCSE
○	Double Award GCSE
○	Single Award GCSE
○	Other (Please specify):

50. Please specify the Awarding Organisation whose specification you are following for this qualification:

Select one.

○	AQA
○	Edexcel
○	OCR
○	CIE
○	IB
○	CCEA
○	ICAAE
○	WJEC
○	SQA
○	Please specify:

51. Is the year subject/group you teach set by ability?

Select one.

○	Yes	(Go to question number 52.)
○	No	(Go to question number 53.)

52. Choose one ability group you refer to when answering questions about teaching

Select one.

○	High
○	Medium
○	Low

53. How much timetabled time (in hours) is allocated to the selected subject and year group each week?

Hours

54. Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year. (Please use decimals if necessary, e.g. 3.5)

	Number of hours each week
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

55. For your selected 14 – 16 subject and qualification, approximately how many days are allocated to each of these activities in an academic year?

	Days in a year
Outdoor practical work/fieldwork	
Off-site visits to science related industry, museums etc.	

56. Has the number of days for these activities changed since the last academic year?

Select one per row.

	Increased	*Decreased*	*Stayed about the same*
Outdoor practical work	○	○	○
Off-site visits	○	○	○

57. For your selected 14 – 16 subject and qualification, approximately how many practical science activities will a student carry out during the current year?

58. Has the number of practical work activities/experiments altered since last year?

Select one.

○	Increased
○	Decreased
○	Stayed the same

59. For your selected subject and 14 -16 qualification, how much lesson time (in hours) is allocated to preparing for and carrying out practical work assessment required by the Awarding Organisation in the current academic year?

Hours

60. Please indicate how often the students in the selected 14 – 16 subject and qualification work individually, in pairs or in groups when carrying out practical work activities/experiments

Select one per row.

	Always	*Most of the time*	*About half the time*	*Seldom*	*Never*
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

61. Please indicate how frequently students in the selected 14 – 16 subject and qualification do the following in their practical work activities/experiments.

Select one per row.

	All activities	*Most activities*	*About half of the activities*	*A few activities*	*No activities*
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

62. For your selected 14 – 16 subject and qualification, please compare and rate the impact of these factors on choosing what practical work to include in your lessons

Select one per row.

	High Impact - 5	*4*	*3*	*2*	*No impact - 1*
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

63. For your selected 14 – 16 subject and qualification, please compare and rate the importance of these aims in your practical work teaching

Select one per row.

	High importance - 5	*4*	*3*	*2*	*No importance - 1*
To develop practical skills for laboratory work	○	○	○	○	○
To learn the principles of scientific inquiry	○	○	○	○	○
To develop team-working and problem-solving skills	○	○	○	○	○
To motivate and engage students	○	○	○	○	○
To prepare students for future science-related jobs	○	○	○	○	○
To develop conceptual understanding	○	○	○	○	○
To develop students' creativity and critical thinking	○	○	○	○	○

64. Please rate how well you think students in your selected subject are prepared for practical activities/experiments when they start the 14 – 16 phase.

Select one per row.

	Very well prepared	*Well prepared*	*Marginally prepared*	*Unprepared*
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

65. Are you teaching GCSE/National science to 11 – 14 year old students in the current academic year?

Select one.

○	Yes	(Go to question number 66.)
○	No	(Go to question number 82.)

Please indicate ONE timetabled subject and year group you are teaching to 11 – 14s this year and answer all questions about teaching with this subject and qualification in mind.

66. SUBJECT

Select one.

○	Physics
○	Chemistry
○	Biology
○	Science
○	Other (Please specify):

67. YEAR GROUP

Select one.

○	11 – 12s (Year 7)
○	12 – 13s (Year 8 / S1 / 1st Year)
○	13 – 14s (Year 9 / S2 / 2nd Year)

68. Is the year subject/group you teach set by ability?

Select one.

○	Yes	(Go to question number 69.)
○	No	(Go to question number 71.)

69. Choose one ability group you refer to when answering questions about teaching

Select one.

○	High
○	Medium
○	Low

70. How much timetabled time (in hours) is allocated to the selected subject and year group each week?

Hours

71. Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year. (Please use decimals if necessary, e.g. 3.5)

	Number of hours each week
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

72. For your selected 11 – 14 subject and year group, approximately how many days are allocated to each of these activities in an academic year?

	Days in a year
Outdoor practical work/fieldwork	
Off-site visits to science related industry, museums etc.	

73. Has the number of days for these activities changed since the last academic year?

Select one per row.

	Increased	*Decreased*	*Stayed about the same*
Outdoor practical work	○	○	○
Off-site visits	○	○	○

74. For your selected 11 – 14 subject and year group, approximately how many practical science activities will a student carry out during the current year?

75. Has the number of practical work activities/experiments altered since last year?

Select one.

○	Increased
○	Decreased
○	Stayed the same

76. For your selected 11 – 14 subject and year group, how much lesson time (in hours) is allocated to preparing for and carrying out statutory practical work assessment in the current academic year?

_____ Hours

77. Please indicate how often the students in the selected 11 – 14 subject and year group work individually, in pairs or in groups when carrying out practical work activities/experiments

Select one per row.

	Always	*Most of the time*	*About half the time*	*Seldom*	*Never*
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

78. Please indicate how frequently students in the selected 11 – 14 subject and qualification do the following in their practical work activities/experiments.

Select one per row.

	All activities	*Most activities*	*About half of the activities*	*A few activities*	*No activities*
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

79. For your selected 11 – 14 subject and year group, please compare and rate the impact of these factors on choosing what practical work to include in your lessons

Select one per row.

	High Impact - 5	*4*	*3*	*2*	*No impact - 1*
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

80. For your selected 11 – 14 subject and year group, please compare and rate the importance of these aims in your practical work teaching

Select one per row.

	High importance - 5	*4*	*3*	*2*	*No importance - 1*
To develop practical skills for laboratory work	○	○	○	○	○
To learn the principles of scientific inquiry	○	○	○	○	○
To develop team-working and problem-solving skills	○	○	○	○	○
To motivate and engage students	○	○	○	○	○
To prepare students for future science-related jobs	○	○	○	○	○
To develop conceptual understanding	○	○	○	○	○
To develop students' creativity and critical thinking	○	○	○	○	○

81. Please rate how well you think students in your selected subject are prepared for practical activities/experiments when they start the 11 – 14 phase.

Select one per row.

	Very well prepared	*Well prepared*	*Marginally prepared*	*Unprepared*
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

Background Information

82. Please indicate the box corresponding to your age

Select one.

○	Under 25
○	26–29
○	30–39
○	40–49
○	50–59
○	60 or older

83. Please indicate your gender

Select one.

○	Male
○	Female
○	Prefer not to say

84. Please indicate if your current teaching position is …

Select one.

○	Permanent
○	Temporary

85. Please indicate if you work....

Select one.

○	Full Time
○	Part Time

86. By the end of this academic year, how many years will you have been teaching altogether?

Number

87. Please indicate your specialist science subject

Select one.

○	Physics
○	Chemistry
○	Biology
○	Other, e.g. Earth sciences. Please specify:

88. What is the highest level of formal education you have you completed in a SCIENCE subject?

Select one.

○	Doctorate degree
○	Masters Degree
○	Post Graduate Certificate of Education or equivalent
○	Bachelor Degree
○	A level/Higher or other post-16 qualification such as BTEC, diploma, IB, NVQ
○	Other, e.g. Qualification obtained overseas; Armed Forces training; Please specify:

89. Please indicate which science subject you studied to this level.

Select all that apply.

☐	Biology - or related subject, e.g. Ecology/Marine Biology/Physiology/Zoology/Biomedical Science
☐	Physics - or related subject, e.g. Astrophysics/Electronics/Space Science
☐	Chemistry - or related subject e.g. Biochemistry/Pharmacology
☐	Earth Science/Geology/Geography
☐	Other, e.g. Engineering, Medicine, Optometry, general science

*90. Please indicate if you hold qualified teacher status in the nation where you currently work (*Required)

Select one.

○	Yes	(Go to question number 116.)
○	No	(Go to question number 116.)

Technician

Background Information

91. Please indicate the box corresponding to your age

Select one.

○	Under 25
○	26–29
○	30–39
○	40–49
○	50–59
○	60 or older

92. Please indicate your gender

Select one.

○	Male
○	Female
○	Prefer not to say

93. Please indicate if your position as technician is …

Select one.

○	Permanent
○	Temporary

94. Please indicate if your work as technician is ...

Select one.

○	Full Time
○	Part Time

95. What is the highest level of formal education you have you completed in a SCIENCE subject?

Select one.

○	Doctorate degree
○	Masters Degree
○	Post Graduate Certificate of Education or equivalent
○	Bachelor Degree
○	Other 18+ qualification, e.g. BTEC Certificate/Diploma/Apprenticeship/Technical Qualification
○	A level or AS level/Higher or Advanced Higher
○	GCSE/O level/CSE/Scottish Standard
○	No formal science qualification
○	Other, e.g. Qualification obtained overseas; Armed Forces training; Please specify:

96. Are you a Registered Science Technician (RSciTech)?

Select one.

○	Yes
○	No

97. Are you working towards RSciTech registration?

Select one.

○	Yes
○	No

98. Have you received any professional development related to supporting science practical work in the current academic year?

Select one.

○	Yes	(Go to question number 99.)
○	No	(Go to question number 100.)

99. Please indicate the number of days

Number

Your role as a Technician

Practical work is defined in this study as:
"A learning activity in which students observe, investigate and develop an understanding of the world around them, through direct, hands-on, experience of phenomena or manipulating real objects and materials."

100. Please indicate if you work as a general science or specialist science subject technician

Select one.

○	General science technician
○	Specialist science subject technician

101. If applicable, please state which specialist science subject(s) you support.

Select all that apply.

☐	Physics
☐	Chemistry
☐	Biology
☐	Other (Please specify):

102. We would like to know about the tasks you do as a technician. Please indicate how often you do these tasks:

Select all that apply.

	Daily	*Weekly*	*Monthly*	*Termly*	*Annually*	*Never*
Advising a teacher how to do an experiment/use equipment	☐	☐	☐	☐	☐	☐
Photocopying worksheets for lessons	☐	☐	☐	☐	☐	☐
Discussing science curriculum requirements with a teacher	☐	☐	☐	☐	☐	☐
Setting up equipment for an experiment	☐	☐	☐	☐	☐	☐
Repairing technical equipment, e.g. oscilloscopes, microscopes	☐	☐	☐	☐	☐	☐
Planning a new experiment e.g. by constructing and/or modifying equipment	☐	☐	☐	☐	☐	☐
Filing worksheets/paper resources	☐	☐	☐	☐	☐	☐
Liaising with school senior managers about science practical equipment/resources	☐	☐	☐	☐	☐	☐
Moving furniture/textbooks	☐	☐	☐	☐	☐	☐
Setting up general IT equipment, e.g. electronic whiteboard, students' computers	☐	☐	☐	☐	☐	☐

103. Does your job include any responsibilities/roles outside the science department, either formal or informal?

Select one.

○	Yes	(Go to question number 104.)
○	No	(Go to question number 106.)

104. How much time in hours per week do you spend on your additional role(s)?

_____ Number

105. Please indicate what your additional role(s) is/are.

Select all that apply.

☐	Technician in another department
☐	School/college health and safety advisor
☐	Teaching assistant
☐	Other general role (Please specify): _____

Preparation Rooms

106. How many preparation rooms are there in your school or college?

_____ Number

107. How are preparation rooms organised?

Select one.

○	Subject-specific preparation rooms for biology, chemistry and physics
○	Preparation rooms are shared between all sciences
○	Both specialist and shared preparation rooms

108. Are any preparation rooms shared with another department (outside science)?

Select one.

○	Yes
○	No

109. Are any preparation rooms age-specific, e.g. 11 – 14, 14 – 16, post-16?

Select one.

○	Yes
○	No

110. In the preparation room(s) you use, please evaluate the following factors and facilities

Select one per row.

	Available and sufficient/working	*Available but insufficient/not working*	*Not available*	*Not relevant*
Storage space for equipment	○	○	○	○
Working surfaces to meet the needs of the department	○	○	○	○
Gas, water, electricity supply	○	○	○	○
Proximity to laboratories	○	○	○	○
Computer, internet connections and telephone	○	○	○	○
Trolley for moving equipment	○	○	○	○
Space for trolleys	○	○	○	○
First aid kit	○	○	○	○
Mechanical ventilation	○	○	○	○
A lockable, ventilated chemical store	○	○	○	○
Refrigerator/freezer	○	○	○	○
Dishwasher or laboratory glass washer	○	○	○	○
Fume cupboard	○	○	○	○
A still for distilling water	○	○	○	○
Provision for the secure storage of gas cylinders	○	○	○	○

Laboratories

111. How many laboratories are there in your school/college?

_____ Number

112. In the laboratories you assist, please indicate to what extent the following are satisfactory (available and in good working order) in relevant laboratories.

Select one per row.

	All	*Most*	*About half*	*A few*	*None*
Easy access for technicians	○	○	○	○	○
Appropriate space for class sizes	○	○	○	○	○
Good quality furnishings, e.g. benches, stools, shelving, storage	○	○	○	○	○
Fully functioning sinks and drainage	○	○	○	○	○
Roof, floor, walls in good condition	○	○	○	○	○
Basic Health and Safety standards met, e.g. eye protection, screens, fire extinguishers	○	○	○	○	○
Mechanical ventilation	○	○	○	○	○
Computers available for student use	○	○	○	○	○
Space to leave long term investigations/experiments	○	○	○	○	○
Well distributed taps	○	○	○	○	○
Well distributed power points	○	○	○	○	○
Accessible shut-offs for gas, electricity and water and an earth-leakage circuit breaker on the electrical supply	○	○	○	○	○
Provision for teacher-led demonstrations that might require gas, water and electricity.	○	○	○	○	○
An interactive whiteboard, projector etc.	○	○	○	○	○
Working blinds/curtains/light-dimming system for black outs (Physics only)	○	○	○	○	○
Fume cupboard with working gas, electricity and water supplies (Chemistry only)	○	○	○	○	○
Well distributed gas taps (Chemistry only)	○	○	○	○	○

Science Equipment

Please select the items in the following three questions that are relevant for the laboratories you serve and indicate if an item is available in working order and/or as a complete set.

113. Physics or General Science Laboratory item

Select one per row.

	Available in working order/complete set	*Available but not working/not complete set*	*Not available*	*Don't know*
Oscilloscope with spectrum analysis	○	○	○	○
Van de Graaff Generator	○	○	○	○
Air Track with air source	○	○	○	○
Electric Vacuum Pump	○	○	○	○
Class set (groups) of data loggers with sensors	○	○	○	○
Class set (groups) of ray boxes and lenses	○	○	○	○
Magnetic field observation kit (iron filings, magnets)	○	○	○	○
Class set (groups) of multimeters or volt and ammeters	○	○	○	○
Class set (groups) of Newtonmeters	○	○	○	○
Class set (groups) of magnets	○	○	○	○
Class set (groups) of tuning forks	○	○	○	○
Class set (groups) of bulbs, bulb holders and wires	○	○	○	○

114. Chemistry or General Science Laboratory item

Select one per row.

	Available in working order/complete set	*Available but not working/not complete set*	*Not available*	*Don't know*
UV Spectrophotometer	○	○	○	○
More than one digital precision balance (±0.001g)	○	○	○	○
Class set (groups) of magnetic stirrers	○	○	○	○
Class set (groups) of heating mantles	○	○	○	○
Class set (groups) of distillation apparatus	○	○	○	○
Class set (groups) of pH meters	○	○	○	○
Class set (groups) of student molecular modelling kit	○	○	○	○
Class set (groups) of ground glass gas syringe	○	○	○	○
Class set (groups) of titration equipment	○	○	○	○
Class set (groups) of Erlenmeyer flasks	○	○	○	○
Class set (groups) of Bunsen burners	○	○	○	○
Eye protection for all students	○	○	○	○

115. Biology or General Science Laboratory item

Select one per row.

	Available in working order/complete set	*Available but not working/not complete set*	*Not available*	*Don't know*
Genetic engineering kit	○	○	○	○
Digital microscope with visualizer and/or camera	○	○	○	○
Haemocytometer	○	○	○	○
Gel electrophoresis equipment and centrifuge	○	○	○	○
Class set (groups) of datalogger with sensors	○	○	○	○
Class set (groups) of optical microscopes	○	○	○	○
Water bath and thermometers	○	○	○	○
Class set (groups) of colorimeters	○	○	○	○
Class set (groups) of field work equipment	○	○	○	○
Anatomical models, e.g. eye, torso, ear, heart	○	○	○	○
Class set (groups) of dissection kit	○	○	○	○
Class set (groups) of plastic petri dishes	○	○	○	○

116. We would be pleased to hear about any other experiences of practical work in your current school or college you would like to share. We also welcome your views and opinions on how practical science might change in future years.

3 School Staff Survey for heads of science and science teachers - Year 2

In year 2 of the study, there were two separate surveys, one for heads of science and the other for science teachers. There was no survey for science technicians in year 2 of the study. Below is the survey for heads of science, which contains all the questions for science teachers. Questions asked only to heads of science are indicated next to the relevant questions.

About your School or College

*1. School/College name (*Required)

*2. What is your school/college's postcode? (*Required)

*3. In which nation is your school/college? (*Required)

Select one.

○	England
○	Scotland

Please indicate your school or college characteristics

4. Age Range

Select one.

○	5 -19 Primary and Secondary
○	11 - 16 Secondary
○	11 - 19 Secondary
○	16 - 19 Secondary
○	FE College
○	Other

5. Funding

Select one.

○	Local authority/state funded
○	Academy/Free School
○	Independent
○	Other

6. Gender/Selectivity

Select one.

○	Boys non-selective
○	Girls non-selective
○	Mixed non-selective
○	Boys selective
○	Girls selective
○	Mixed selective

Current Students

7. How many students attend your school/college?

8. For schools/sixth-form colleges only:

	Number
How many 15-16 year-olds attend the school?	
How many 15-16 year-olds take examinations in three separate science subjects (physics, chemistry and biology)	
How many post-16 students attend the school/college?	
How many post-16 students study one or more science subjects?	

9. For FE colleges ONLY: How many students study one or more science subjects at A/AS-level, Higher/Advanced Higher or academic equivalent?

Departmental structure *(head of science only)*

10. Please indicate the number of students studying PHYSICS *(head of science only)*

	Number
Number of 11-14 year-olds	
Number of students doing GCSEs/Nationals or equivalent in the subject	
Number of students doing AS/A level/Higher/Advanced Higher or equivalent in the subject	

11. Please indicate the number of students studying CHEMISTRY *(head of science only)*

	Number
Number of 11-14 year-olds	
Number of students doing GCSEs/Nationals or equivalent in the subject	
Number of students doing AS/A level/Higher/Advanced Higher or equivalent in the subject	

12. Please indicate the number of students studying BIOLOGY *(head of science only)*

	Number
Number of 11-14 year-olds	
Number of students doing GCSEs/Nationals or equivalent in the subject	
Number of students doing AS/A level/Higher/Advanced Higher or equivalent in the subject	

Staffing *(head of science only)*

13. How many science teachers (full-time equivalent, FTE) teach in the school/college? *(head of science only)*

14. How many teachers (FTE) teach each of these subjects? *(head of science only)*

	Number
Physics	
Chemistry	
Biology	

15. How many technicians (FTE) in total support science in your school/college? *(head of science only)*

16. How many technicians (FTE) support each of these subjects? *(head of science only)*

	Number
Physics	
Chemistry	
Biology	

17. Are any technician positions currently unfilled? *(head of science only)*

Select one.

○	Yes
○	No

Department Budget *(head of science only)*

18. What is the current annual budget (excluding staff salaries) allocated to science from your school/college? *(head of science only)*

	£
Budget for the Science Department	
If applicable, your science department budget carried over from last year	

19. How has the budget changed since last year? *(head of science only)*

Select one.

○	Increased
○	Decreased
○	Stayed the same

20. Please state the proportions of your department budget allocated to these areas of expenditure (Note: percentages do not need to add up to 100%) *(head of science only)*

	Proportion allocated (%) of total
Consumables and equipment for practical work	
Photocopying/reprographics - for hard copy worksheets, examinations etc.	
ICT - software, hardware, data logging	
Science-specific professional development	

Laboratories *(head of science only)*

21. How satisfied are you with the following factors in your department for delivering high-quality practical work? *(head of science only)*

Select one per row.

	Very satisfied	*Satisfied*	*Neither satisfied not dissatisfied*	*Dissatisfied*	*Very dissatisfied*
The department has sufficient laboratory facilities	○	○	○	○	○
The department has sufficient equipment and consumables	○	○	○	○	○
The department has sufficient technical support	○	○	○	○	○
The department has a sufficient budget	○	○	○	○	○
The teachers have sufficient competency	○	○	○	○	○
Teachers are offered sufficient professional development	○	○	○	○	○

Practical Work Teaching this current year

Practical work is defined in this study as:

"A learning activity in which students observe, investigate and develop an understanding of the world around them, through direct, hands-on, experience of phenomena or manipulating real objects and materials."

The next questions relate to teaching specific age groups (11-14, 14-16, Post-16). Please answer questions for each age group you teach.

22. Are you teaching AS/A level/Advanced Highers/Highers to Post-16 students in schools or colleges in the current academic year?

Select one.

○	Yes	(Go to question number 23.)
○	No	(Go to question number 38.)

Please indicate ONE science subject and Post-16 qualification you are teaching this year and answer all questions about teaching with this subject and qualification in mind.

23. SUBJECT

Select one.

○	Physics
○	Chemistry
○	Biology
○	Other (Please specify):

24. QUALIFICATION

Select one.

○	A level
○	Advanced Highers
○	AS level
○	Highers
○	Other (Please specify):

25. Please specify the Awarding Organisation whose specification you are following for this qualification:

Select one.

○	AQA
○	Edexcel
○	OCR
○	CIE
○	IB
○	CCEA
○	ICAAE
○	WJEC
○	SQA
○	Other (Please specify):

26. What is the average number of students in a class for your selected Post-16 subject and qualification?

Enter a number.

_____ students

27. How much timetabled time (in hours) is allocated to the selected Post-16 subject and qualification each week?

_____ Hours

28. Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year. (Please use decimals if necessary, e.g. 3.5)

	Number of hours each week
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

29. For your selected subject and Post-16 qualification, approximately how many days are allocated to each of these activities in an academic year?

	Days in a year
Outdoor practical work/fieldwork	
Off-site visits to science-related industry, museums, etc.	

30. Has the number of days for these activities changed since the last academic year?

Select one per row.

	Increased	*Decreased*	*Stayed about the same*
Outdoor practical work	○	○	○
Off-site visits	○	○	○

31. For your selected subject and Post-16 qualification, approximately how many practical science activities will a student carry out during the current year?

32. How has the number of practical work activities/experiments altered since last year?

Select one.

○	Increased
○	Decreased
○	Stayed the same

33. For your selected subject and Post-16 qualification, how much lesson time (in hours) is allocated to preparing for and carrying out practical work assessment required by the Awarding Organisation in the current academic year?

Hours

34. Please indicate how often the students in the selected subject and Post-16 qualification work individually, in pairs or in groups when carrying out practical work activities/experiments

Select one per row.

	Always	*Most of the time*	*About half the time*	*Seldom*	*Never*
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

35. Please indicate how frequently students in the selected subject and Post-16 qualification do the following in their practical work activities/experiments

Select one per row.

	All activities	*Most activities*	*About half of the activities*	*A few activities*	*No activities*
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

36. For the selected subject and Post-16 qualification, please compare and rate the impact of these factors on choosing what practical work to include in your lessons

Select one per row.

	High impact - 5	*4*	*3*	*2*	*No impact - 1*
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

37. Please rate how well you think students in your selected subject are prepared for practical activities/experiments when they start the Post-16 phase.

Select one per row.

	Very well prepared	*Well prepared*	*Marginally prepared*	*Unprepared*
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

38. Are you teaching GCSE/National science to 14-16 year old students in schools or colleges in the current academic year?

Select one.

○	Yes	(Go to question number 39.)
○	No	(Go to question number 54.)

Please indicate ONE science subject and 14-16 qualification you are teaching this year and answer all questions about teaching with this subject and qualification in mind.

39. SUBJECT

Select one.

○	Physics
○	Chemistry
○	Biology
○	Other (please specify):

40. QUALIFICATION

Select one.

○	National 4
○	National 5
○	Single subject GCSE
○	Double Award GCSE
○	Single Award GCSE
○	Other (please specify):

41. Please specify the Awarding Organisation whose specification you are following for this qualification:

Select one.

○	AQA
○	Edexcel
○	OCR
○	CIE
○	IB
○	CCEA
○	ICAAE
○	WJEC
○	SQA
○	Other (please specify):

42. What is the average number of students in a class for your selected 14-16 subject and qualification?

Enter a number.

_____ students

43. How much timetabled time (in hours) is allocated to the selected subject and year group each week?

_____ Hours

44. Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year. (Please use decimals if necessary, e.g. 3.5)

	Number of hours each week
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

45. For your selected 14-16 subject and qualification, approximately how many days are allocated to each of these activities in an academic year?

	Days in a year
Outdoor practical work/fieldwork	
Off-site visits to science related industry, museums etc.	

46. How has the number of days for these activities changed since the last academic year?

Select one per row.

	Increased	*Decreased*	*Stayed about the same*
Outdoor practical work	○	○	○
Off-site visits	○	○	○

47. For your selected 14-16 subject and qualification, approximately how many practical science activities will a student carry out during the current year?

48. How has the number of practical work activities/experiments altered since last year?

Select one.

○	Increased
○	Decreased
○	Stayed the same

49. For your selected subject and 14 -16 qualification, how much lesson time (in hours) is allocated to preparing for and carrying out practical work assessment required by the Awarding Organisation in the current academic year?

Hours

50. Please indicate how often the students in the selected 14-16 subject and qualification work individually, in pairs or in groups when carrying out practical work activities/experiments

Select one per row.

	Always	*Most of the time*	*About half the time*	*Seldom*	*Never*
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

51. Please indicate how frequently students in the selected 14-16 subject and qualification do the following in their practical work activities/experiments.

Select one per row.

	All activities	*Most activities*	*About half of the activities*	*A few activities*	*No activities*
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

52. For your selected 14-16 subject and qualification, please compare and rate the impact of these factors on choosing what practical work to include in your lessons

Select one per row.

	High impact - 5	*4*	*3*	*2*	*No impact - 1*
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

53. Please rate how well you think students in your selected subject are prepared for practical activities/experiments when they start the 14-16 phase.

Select one per row.

	Very well prepared	*Well prepared*	*Marginally prepared*	*Unprepared*
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

54. Are you teaching GCSE/National science to 11-14 year old students in the current academic year?

Select one.

○	Yes	(Go to question number 55.)
○	No	(Go to question number 70.)

Please indicate ONE timetabled subject and year group you are teaching to 11-14s this year and answer all questions about teaching with this subject and qualification in mind.

55. SUBJECT

Select one.

○	Physics
○	Chemistry
○	Biology
○	Science
○	Other (Please specify):

56. YEAR GROUP

Select one.

○	11 – 12s (Year 7)
○	12 – 13s (Year 8 / S1 / 1st Year)
○	13 – 14s (Year 9 / S2 / 2nd Year)

57. If you are in a school in England and your selected year group is 13 - 14s (Year 9), are you teaching a GCSE syllabus?

Select one.

○	Yes
○	No

58. What is the average number of students in a class for your selected 11-14 subject and year group?

Enter a number.

students

59. How much timetabled time (in hours) is allocated to the selected subject and year group each week?

Hours

60. Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year. (Please use decimals if necessary, e.g. 3.5)

	Number of hours each week
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

61. For your selected 11-14 subject and year group, approximately how many days are allocated to each of these activities in an academic year?

	Days in a year
Outdoor practical work/fieldwork	
Off-site visits to science related industry, museums etc.	

62. How has the number of days for these activities changed since the last academic year?

Select one per row.

	Increased	*Decreased*	*Stayed about the same*
Outdoor practical work	○	○	○
Off-site visits	○	○	○

63. For your selected 11-14 subject and year group, approximately how many practical science activities will a student carry out during the current year?

64. How has the number of practical work activities/experiments altered since last year?

Select one.

○	Increased
○	Decreased
○	Stayed the same

65. For your selected 11-14 subject and year group, how much lesson time (in hours) is allocated to preparing for and carrying out statutory practical work assessment in the current academic year?

_____ Hours

66. Please indicate how often the students in the selected 11-14 subject and year group work individually, in pairs or in groups when carrying out practical work activities/experiments

Select one per row.

	Always	*Most of the time*	*About half the time*	*Seldom*	*Never*
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

67. Please indicate how frequently students in the selected 11-14 subject and qualification do the following in their practical work activities/experiments.

Select one per row.

	All activities	*Most activities*	*About half of the activities*	*A few activities*	*No activities*
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

68. For your selected 11-14 subject and year group, please compare and rate the impact of these factors on choosing what practical work to include in your lessons

Select one per row.

	High impact - 5	*4*	*3*	*2*	*No impact - 1*
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

69. Please rate how well you think students in your selected subject are prepared for practical activities/experiments when they start the 11-14 phase.

Select one per row.

	Very well prepared	*Well prepared*	*Marginally prepared*	*Unprepared*
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

Background Information

70. Please indicate the box corresponding to your age

Select one.

○	Under 25
○	26–29
○	30–39
○	40–49
○	50–59
○	60 or older

71. Please indicate your gender

Select one.

○	Male
○	Female
○	Prefer not to say

72. Please indicate if your current teaching position is …

Select one.

○	Permanent
○	Temporary

73. Please indicate if you work....

Select one.

○	Full time
○	Part time

74. By the end of this academic year, how many years will you have been teaching altogether?

_____ Number

75. Please indicate your specialist science subject	
Select one.	
○	Physics
○	Chemistry
○	Biology
○	Other, e.g. Earth sciences. Please specify:

76. What is the highest level of formal education you have completed in YOUR SPECIALIST science subject?	
Select one.	
○	Doctorate degree
○	Masters degree
○	Bachelor degree
○	A level/Higher or other post-16 qualification such as BTEC, diploma, IB, NVQ
○	Other (e.g. Qualification obtained overseas; Armed Forces training); please specify:

77. What is the highest level of formal education you have completed in ANY SCIENCE subject?	
Select one.	
○	Doctorate degree
○	Masters degree
○	Bachelor degree
○	A level/Higher or other Post-16 qualification such as BTEC, diploma, IB, NVQ
○	Other (e.g. Qualification obtained overseas; Armed Forces training); please specify:

78. Please indicate which science subject you studied to this level.	
Select all that apply.	
☐	Biology - or related subject, e.g. Ecology/Marine Biology/Physiology/Zoology/Biomedical Science
☐	Physics - or related subject, e.g. Astrophysics/Electronics/Space Science
☐	Chemistry - or related subject e.g. Biochemistry/Pharmacology
☐	Earth Science/Geology/Geography
☐	Other, e.g. Engineering, Medicine, Optometry, general science

79. Please indicate if you hold a Post Graduate Certificate in Education or equivalent

Select one.

○	Yes	(Answer question number 79.1.)
○	No	

79.1 Please indicate the age range for which you trained

Select one.

○	11 - 16
○	11 - 19
○	Other:

*80. Please indicate if you hold qualified teacher status in the nation where you currently work (*Required)

Select one.

○	Yes
○	No

81. Have you received any professional development related to teaching science practical work in the current academic year?

Select one.

○	Yes	(Go to question number 82.)
○	No	(Go to question number 83.)

82. Please indicate the number of days

83. We would be pleased to hear about any other experiences of practical work in your current school or college you would like to share. We also welcome your views and opinions on how practical science might change in future years.

Prize draw

To thank you for completing the survey, we would like to invite you to enter our free prize draw to win one of five £100 Amazon gift vouchers. Your email address is required so that we can get in touch if you win. Your details will not be used to identify you as part of the survey and will not be used for marketing purposes.

84. Please select whether you would like to participate in the free prize draw to win a £100 Amazon gift voucher.

Select one.

○	Yes, I would like to participate in the free prize draw to win a £100 Amazon gift voucher.	(Answer question number 84.1.)
○	No thanks, I would not like to participate	

84.1 My email address is:

Be the first to know about next year's survey

85. We would like to add you to our priority notification list for when the survey re-opens next year. To be added to the list, please leave your email address below. Your email address will not be used to identify you within the survey data and will not be used for marketing purposes.

4 School Staff Survey for heads of science - Year 3

Practical Work in Science - Heads of Science survey

The Practical Work in Science Survey is seeking views, opinions and experiences about practical work from everyone teaching and supporting science in any secondary school or college within England and Scotland.

We are now into the final year of this exciting three-year national study. Your responses, along with the data we have collected in the last two years, will build a rich and detailed picture of how practical work in science has changed over this period. Each response is important to ensure that we represent the impact of changes in practical science to researchers and policy-makers.

The study is led by Durham University's Centre for Evaluation and Monitoring (CEM) and School of Education and is funded by the Gatsby Charitable Foundation, with a contribution from the Wellcome Trust. The project is part of an on-going programme of work by Gatsby, Wellcome and the Nuffield Foundation to understand and improve practical work in science education.

We are extremely keen to gather responses from as many heads of science, science teachers and technicians as possible within each school, so please do ask as many colleagues as possible to complete a survey. The perspective of multiple members of staff within a school gives us much richer data and will allow us to understand much more about science practical work in schools.

To thank you for completing the survey, you are invited to participate in a prize draw to win one of five £100 gift vouchers. We would also like to offer you the chance to sign up to be the first to hear about the findings of the study in spring 2018.

Many thanks for your support of the study.

Vanessa Kind, Per Kind, Helen Cramman, Karen Jones, Kirsty Younger and Helen Gray

Durham University School of Education and Centre for Evaluation and Monitoring (CEM)

Consent

Your school / college name and postcode are requested in the survey to keep track of institutions over the three-year period, but these will not be identified in any report. Names of individual respondents are not required. All information given to us, including all personal details, will be treated in the strictest of confidence in accordance with the Data Protection Act. None of your experiences or thoughts will be shared with anyone outside of the study partners without removal of all identifying information. The survey responses and results (with all personally identifiable information removed) will be made freely available at the end of the study, and will help researchers, funders, and policy makers to understand the views about practical work in science in the UK. When the survey responses and results of the study are published, your answers will be included with data provided by other people, no individual or institution will be identifiable from the research findings. The study has ethical clearance from Durham University's School of Education Research Ethics Committee and is conducted in accordance with British Educational Research Association (2011) guidelines. Participants are completing the survey on a voluntary basis and may withdraw at any time. The survey takes approximately 20 - 25 minutes to complete.

To participate in the prize draw at the end of the survey, we request that you leave an email address. This email address will only be used at the end of July to notify you if you have won one of five £100 Amazon gift vouchers. We also separately request your email address if you would like to be notified when the findings of the study are published in spring 2018. In either case, your email address will not be used to identify you within the survey data and will not be used for marketing purposes.

If you have any queries or comments about the survey or study as a whole, please contact research@cem.dur.ac.uk.

Please note that heads of science will be asked the science teacher questions in the later part of this survey and do not need to complete the separate teacher survey as well.

To start replying to the heads of science survey, click on the "Next" button below (please note that clicking on the "Next" button below indicates that you consent to participating in the survey based on the information given on this page).

About your School or College

What is the name of your school/college? ✱ *Required*

What is your school/college's postcode? ✱ *Required*

Please enter a valid UK postcode.

In which nation is your school/college? ✱ *Required*

- England
- Scotland

Please indicate your school or college characteristics

Age range ✱ *Required*

- 5 – 19 Primary and Secondary
- 11 – 16 Secondary
- 11 – 19 Secondary
- 16 – 19 Secondary
- FE College
- Other

Funding ✱ *Required*

- Local authority / State-funded
- Academy / Free school
- Independent
- Other

Gender / Selectivity ✱ *Required*

- Boys non-selective
- Girls non-selective
- Mixed non-selective
- Boys selective
- Girls selective
- Mixed selective

How would you describe the status of practical work in science within your school/college?

- High (senior management prioritise practical work in science)
- Medium (senior management do not show any particular preference for practical work in science)
- Low (senior management favour other priorities over practical work in science)

Does your school/college offer a regular extra-curricular STEM (Science, Technology, Engineering, Mathematics) club that includes practical work in science?

- Weekly or fortnightly
- Monthly
- Annually or few times a year
- Never

How many students attend your school/college? ✱ *Required*

Please enter a whole number (integer).

For schools / sixth-form colleges only

	Number
How many 15-16 year-olds attend the school?	
How many 15-16 year-olds take examinations in three separate science subjects (physics, chemistry and biology)	
How many post-16 students attend the school/college?	
How many post-16 students study one or more science subjects?	

For FE colleges only

How many students study one or more science subjects at A/AS-level, Higher/Advanced Higher or academic equivalent?

Please enter a whole number (integer).

Departmental Structure

Please indicate the number of students studying PHYSICS.

	PHYSICS
Number of 11-14 year-olds	
Number of students doing GCSEs / Nationals or equivalent in the subject	
Number of students doing AS / A level / Higher / Advanced Higher or equivalent in the subject	

Please indicate the number of students studying CHEMISTRY.

	CHEMISTRY
Number of 11-14 year-olds	
Number of students doing GCSEs / Nationals or equivalent in the subject	
Number of students doing AS / A level / Higher / Advanced Higher or equivalent in the subject	

Please indicate the number of students studying BIOLOGY.

	BIOLOGY
Number of 11-14 year-olds	
Number of students doing GCSEs / Nationals or equivalent in the subject	
Number of students doing AS / A level / Higher / Advanced Higher or equivalent in the subject	

Staffing

How many science teachers (full-time equivalent, FTE) teach in the school/college? ✱ *Required*

Please enter a number.

How many teachers (FTE) teach each of these subjects?

Physics	
Chemistry	
Biology	

How many science teacher positions (FTE) in total are currently unfilled in your school/college?

Please enter a number.

How many technicians (FTE) in total support science in your school/college? ✱ *Required*

Please enter a number.

How many technicians are employed on the following basis?

	FTE
Term-time only (pro-rata)	
Term-time only (pro-rata) with additional paid time during school holidays	
Year round (term-time and school holidays)	

How many senior technicians (FTE) in total support your science department? ✱ *Required*

Please enter a number.

How many technicians (FTE) support each of these subjects?

Physics	
Chemistry	
Biology	

Are any technician positions currently unfilled?

- ○ Yes
- ○ No

How has the number of technicians (FTE) in your school/college changed within the last year?

- ○ Increased
- ○ Decreased
- ○ Stayed the same

Which of these factors have affected the number of technicians within your school/college in the last year?

- ☐ Financial
- ☐ Change in student numbers
- ☐ Long term ill health
- ☐ Failure to recruit
- ☐ Decision not to recruit after post becomes vacant
- ☐ School restructuring

- [ ] Curriculum changes
- [ ] None of the above
- [ ] Other

If you selected Other, please specify:

Department Budget

What is the current annual budget (excluding staff salaries) allocated to science from your school/college?

	£
Budget for the science department	
If applicable, your science department budget carried over from last year	

Do you have access to central funds within the school for additional purchases not covered within your departmental budget?

- Yes
- No

How has the budget changed since last year?

- Increased
- Decreased
- Stayed the same

Please state the proportions of your department budget allocated to these areas of expenditure. (Note: percentages do not need to add up to 100%)

	Proportion allocated (%) of total
Consumables and equipment for practical work	
Photocopying/reprographics - for hard copy worksheets, examinations etc.	
ICT - software, hardware, data logging	
Science-specific professional development	

Are there any other areas of science expenditure not covered above?

- Yes
- No

If yes, please state the area and proportion allocated to it:

	Area of expenditure	Proportion of funding (%)
1		
2 (optional)		
3 (optional)		

Resources

How satisfied are you with the following factors in your department for delivering high-quality practical work?

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
The department has sufficient laboratory facilities	○	○	○	○	○
The department has sufficient equipment and consumables	○	○	○	○	○
The department has sufficient technical support	○	○	○	○	○
The department has a sufficient budget	○	○	○	○	○
The teachers have sufficient competency	○	○	○	○	○
Teachers are offered sufficient professional development	○	○	○	○	○

Practical Work Teaching this current year

Practical work is defined in this study as:

"*A learning activity in which students observe, investigate and develop an understanding of the world around them, through direct, hands-on, experience of phenomena or manipulating real objects and materials.*"

The next questions relate to teaching specific age groups (11-14, 14-16, Post-16). Please answer questions for each age group you teach.

Are you teaching AS / A level or Highers / Advanced Highers to Post-16 students in schools or colleges in the current academic year? ✱ *Required*

- Yes
- No

For those teaching AS / A level / Highers / Advanced Highers

Subject: ✱ *Required*

- Physics
- Chemistry
- Biology
- Other

If you selected Other, please specify:

Qualification: ✱ *Required*

More info

- A level
- Advanced Highers
- AS level
- Highers

Please specify the Awarding Organisation whose specification you are following for this qualification.

- AQA
- Edexcel
- OCR
- CIE
- IB
- CCEA
- ICAAE
- WJEC
- SQA
- Other

If you selected Other, please specify:

What is the average number of students in a class for your selected subject and Post-16 qualification? ✱ *Required*

Please enter a number.

How much timetabled time (in hours) is allocated to the selected subject and Post-16 qualification each week? ✱ *Required*

Please enter a number.

Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year.

	Number of hours each week (please use decimals if necessary, e.g. 3.5) ✱ *Required*
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

For your selected subject and Post-16 qualification, how has the proportion of lesson time spent on practical work activities/experiments altered since the last academic year?

- Increased
- Decreased

- Stayed the same

For your selected subject and Post-16 qualification, approximately how many days are allocated to each of these activities in an academic year?

	Days in a year
Outdoor practical work/fieldwork	
Off-site visits to science-related industry, museums, etc.	

How has the number of days for these activities changed since the last academic year?

	Increased	Decreased	Stayed about the same
Outdoor practical work			
Off-site visits			

For your selected subject and Post-16 qualification, approximately how many practical science activities will a student carry out during the current year? ✱ *Required*

Please enter a number.

How has the number of practical work activities/experiments altered since last year?

- Increased
- Decreased
- Stayed the same

For your selected subject and Post-16 qualification, how much lesson time (in hours) is allocated to preparing for and carrying out practical work assessment required by the Awarding Organisation in the

current academic year?

Please enter a number.

Please indicate how often the students in the selected subject and Post-16 qualification work individually, in pairs or in groups when carrying out practical work activities/experiments.

	Always	Most of the time	About half the time	Seldom	Never
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

Please indicate how frequently students in the selected subject and Post-16 qualification do the following in their practical work activities/experiments.

	All activities	Most activities	About half of the activities	A few activities	No activities
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

For the selected subject and Post-16 qualification, please compare and rate the impact of these factors on choosing what practical work to include in your lessons.

	High impact 5	4	3	2	No impact 1
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

Please rate how well you think students in your selected subject and qualification are prepared for practical activities/experiments when they start the Post-16 phase.

	Very well prepared	Well prepared	Marginally prepared	Unprepared
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

For your selected subject and Post-16 qualification, have your students had an opportunity to plan and carry out an open-ended, extended investigation (longer than 2 weeks) involving practical work in lesson time in the last academic year?

- ○ Yes
- ○ No

In your opinion, have recent changes to practical work assessment had an impact on assessing students' practical science skills, for your selected subject and Post-16 qualification?

- ○ Positive impact
- ○ No impact
- ○ Negative impact

Do you offer Extended Project Qualifications (EPQ) in science in your school/college?

- ○ Yes
- ○ No

If yes, how many students chose to carry out an EPQ in science in the last academic year in your school/college?

Please enter a whole number (integer).

How many of these students chose to carry out an EPQ involving practical work in science in the last academic year in your school/college?

Please enter a whole number (integer).

Practical Work Teaching this current year for 14-16-year-olds

Are you teaching GCSE / National science to 14-16-year-old students in your school or college this current academic year? ✱ *Required*

- Yes
- No

For those teaching GCSE/National science to 14-16-year-old students

Please indicate ONE science subject and 14-16 qualification you are teaching this year and answer the following questions about teaching with this subject and qualification in mind. Subject: ✱ *Required*

- Physics
- Chemistry
- Biology
- Other

If you selected Other, please specify:

Qualification: ✱ *Required*

- National 4
- National 5
- Single subject GCSE
- Double Award GCSE
- Single Award GCSE
- Other

If you selected Other, please specify:

If you selected either Single subject, Double Award or Single Award GCSE, is this qualification an IGCSE?

- Yes
- No

Please indicate the year group within the 14 – 16 age range that you are referring to in your answers.

- 14–15-year-olds
- 15–16-year-olds

Please specify the Awarding Organisation whose specification you are following for this qualification:

- AQA
- Edexcel
- OCR
- CIE
- IB
- CCEA
- ICAAE
- WJEC
- SQA
- Other

If you selected Other, please specify:

What is the average number of students in a class for your selected subject and 14-16 qualification? ✱
Required

Please enter a number.

How much timetabled time (in hours) is allocated to the selected subject and year group each week? ✱
Required

Please enter a number.

Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year.

	Number of hours each week (please use decimals if necessary, e.g. 3.5) ✱ *Required*
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

For your selected subject and 14-16 qualification, how has the proportion of lesson time spent on practical work activities/experiments altered since last year?

- ○ Increased
- ○ Decreased
- ○ Stayed the same

For your selected subject and 14-16 qualification, approximately how many days are allocated to each of these activities in this academic year?

	Days in a year
Outdoor practical work/fieldwork	
Off-site visits to science-related industry, museums, etc.	

How has the number of days for these activities changed since the last academic year?

	Increased	Decreased	Stayed about the same
Outdoor practical work	○	○	○

Off-site visits	○	○	○

For your selected subject and 14-16 qualification, approximately how many practical science activities will a student carry out during the current year?

Please enter a number.

How has the number of practical work activities/experiments altered since last year?

- ○ Increased
- ○ Decreased
- ○ Stayed the same

For your selected subject and 14-16 qualification, how much lesson time (in hours) is allocated to preparing for and carrying out practical work assessment required by the Awarding Organisation in the current academic year?

Please enter a number.

Please indicate how often the students in the selected subject and 14-16 qualification work individually, in pairs or in groups when carrying out practical work activities/experiments.

	Always	Most of the time	About half the time	Seldom	Never
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

Please indicate how frequently students in the selected subject and 14-16 qualification do the following in their practical work activities/experiments.

	All activities	Most activities	About half of the activities	A few activities	No activities
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

For the selected subject and 14-16 qualification, please compare and rate the impact of these factors on choosing what practical work to include in your lessons.

	High impact 5	4	3	2	No impact 1
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○

Students' behaviour	○	○	○	○	○

Please rate how well you think students in your selected subject are prepared for practical activities/experiments when they start the 14-16 phase.

	Very well prepared	Well prepared	Marginally prepared	Unprepared
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

For your selected subject and 14-16 qualification, have your students had an opportunity to plan and carry out an open-ended, extended investigation (longer than 2 weeks) involving practical work in lesson time in the last academic year?

- ○ Yes
- ○ No

In your opinion, have recent changes to practical work assessment had an impact on assessing students' practical science skills, for your selected subject and 14 – 16 qualification?

- ○ Positive impact
- ○ No impact
- ○ Negative impact

Practical Work Teaching this current year

Are you teaching GCSE / National science to 11-14-year-old students in the current academic year? ✱
Required

- Yes
- No

For those teaching 11-14-year-old students

Please indicate ONE science subject and year group you are teaching to 11-14s this year and answer all questions about teaching with this subject and year group in mind. Subject: ✱ *Required*

- Physics
- Chemistry
- Biology
- Science
- Other

If you selected Other, please specify:

Year group: ✱ *Required*

- 11-12s (Year 7)
- 12-13s (Year 8 / S1)
- 13-14s (Year 9 / S2)

If your selected year group is 13-14s (Year 9), are you teaching a GCSE syllabus?

- Yes
- No

If yes, is this qualification an IGCSE?

- Yes
- No

What is the average number of students in a class for your selected subject and 11-14 year group? ✱ *Required*

Please enter a number.

How much timetabled time (in hours) is allocated to the selected subject and year group each week? ✱ *Required*

Please enter a number.

Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year.

	Number of hours each week (please use decimals if necessary, e.g. 3.5) ✱ *Required*
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

For your selected subject and 11-14 year group, how has the proportion of lesson time spent on practical work activities/experiments altered since last year?

- Increased
- Decreased
- Stayed the same

For your selected subject and 11-14 year group, approximately how many days are allocated to each of these activities in an academic year?

	Days in a year

Outdoor practical work/fieldwork	
Off-site visits to science-related industry, museums, etc.	

How has the number of days for these activities changed since the last academic year?

	Increased	Decreased	Stayed about the same
Outdoor practical work	○	○	○
Off-site visits	○	○	○

For your selected subject and 11-14 year group, approximately how many practical science activities will a student carry out during the current year?

Please enter a number.

For your selected subject and 11-14 year group, how has the number of practical work activities/experiments altered since last year?

- ○ Increased
- ○ Decreased
- ○ Stayed the same

For your selected subject and 11-14 year group, how much lesson time (in hours) is allocated to preparing for and carrying out statutory practical work assessment in the current academic year?

Please enter a number.

Please indicate how often the students in the selected subject and 11-14 year group work individually, in

pairs or in groups when carrying out practical work activities/experiments.

	Always	Most of the time	About half the time	Seldom	Never
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

Please indicate how frequently students in the selected subject and 11-14 year group do the following in their practical work activities/experiments.

	All activities	Most activities	About half of the activities	A few activities	No activities
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

For the selected subject and 11-14 year group, please compare and rate the impact of these factors on choosing what practical work to include in your lessons.

	High impact 5	4	3	2	No impact 1
Amount of timetabled lesson time	○	○	○	○	○

Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

Please rate how well you think students in your selected subject are prepared for practical activities/experiments when they start the 11-14 phase.

	Very well prepared	Well prepared	Marginally prepared	Unprepared
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

For your selected subject and 11-14 year group, have your students had an opportunity to carry out an open-ended, extended investigation (longer than 2 weeks) involving practical work in lesson time in the last academic year?

- ○ Yes
- ○ No

In your opinion, have recent changes to practical work assessment had an impact on assessing students' practical science skills, for your selected subject and 11 – 14 year group?

- ○ Positive impact

- No impact
- Negative impact

Background Information

Please select the age range corresponding to your age.

- Under 25
- 26–29
- 30–39
- 40–49
- 50–59
- 60 or older

Please indicate your gender

- Male
- Female
- Other
- Prefer not to say

Please indicate if your current teaching position is …

- Permanent
- Temporary

Please indicate if you work....

- Full-time
- Part-time

By the end of this academic year, how many years will you have been teaching altogether?

Please enter a number.

Qualifications

Please indicate your specialist science subject.

- Physics
- Chemistry
- Biology
- Other

If you selected Other, please specify:

What is the highest level of formal education you have completed in YOUR SPECIALIST science subject?

- Doctorate degree
- Masters degree
- Bachelor degree
- A level/Higher or other post-16 qualification such as BTEC, diploma, IB, NVQ
- Other (e.g. Qualification obtained overseas; Armed Forces training)

If you chose other, please specify:

What is the highest level of formal education you have completed in ANY SCIENCE subject?

- Doctorate degree
- Masters degree
- Bachelor degree
- A level/Higher or other post-16 qualification such as BTEC, diploma, IB, NVQ
- Other (e.g. Qualification obtained overseas; Armed Forces training)

If you chose other, please specify:

Please indicate which science subject you studied to this level.

- [ ] Biology - or related subject, e.g. Ecology/Marine
- [ ] Biology/Physiology/Zoology/Biomedical Science
- [ ] Physics - or related subject, e.g. Astrophysics/Electronics/Space Science
- [ ] Chemistry - or related subject e.g. Biochemistry/Pharmacology
- [ ] Earth Science/Geology/Geography
- [ ] Other, e.g. Engineering, Medicine, Optometry, general science

Please indicate if you hold a Post Graduate Certificate in Education or equivalent.

- ○ Yes
- ○ No

If your answer was yes, please indicate the age range for which you trained.

- ○ 11-16
- ○ 11-19
- ○ Other

If you selected Other, please specify:

Please indicate if you hold qualified teacher status in the nation where you currently work. ✱ *Required*

- ○ Yes
- ○ No

Have you received any professional development related to teaching science practical work in the current academic year?

- Yes
- No

If you answered yes, please indicate the number of professional development days received.

Please enter a number.

How many further days of professional development related to teaching science practical work have you requested but not been permitted to attend?

Please enter a number.

How many further days of professional development related to teaching science practical work have you been offered by the school but were unable or chose not to attend?

Please enter a number.

We would be pleased to hear about any other experiences of practical work in science in your current school or college you would like to share. We also welcome your reflections on changes in practical work in science over the last few years.

Prize draw

PRIZE DRAW

To thank you for completing the survey, we would like to invite you to enter our free prize draw to win one of five £100 Amazon gift vouchers. Your email address is required so that we can get in touch if you win. Your details will not be used to identify you as part of the survey and will not be used for marketing purposes.

Please select whether you would like to participate in the free prize draw to win a £100 Amazon gift voucher.

- ○ Yes, I would like to participate in the free prize draw to win a £100 Amazon gift voucher.
- ○ No thanks, I would not like to participate.

Please enter your email address:

Please enter a valid email address.

Be the first to know about the findings of the study

Durham University, the Gatsby Charitable Foundation and the Wellcome Trust greatly appreciate the time that you have taken to support this study. To thank you for your involvement, we would like to add you to a priority notification list so that you will be the first to know when the findings of the study are published in spring 2018. The list may be shared with the Gatsby Foundation and the Wellcome Trust for this purpose. To be added to the list, please leave your email address below. Your email address will not be used to identify you within the survey data and will not be used for marketing purposes.

Please enter a valid email address.

Thank you

Thank you for taking part. You have responded anonymously to our survey. If you would like to contact us, please send an email to research@cem.dur.ac.uk.

5 School Staff Survey for science teachers - Year 3

Practical Work in Science - Science Teachers survey

The Practical Work in Science Survey is seeking views, opinions and experiences about practical work from everyone teaching and supporting science in any secondary school or college within England and Scotland.

We are now into the final year of this exciting three-year national study. Your responses, along with the data we have collected in the last two years, will build a rich and detailed picture of how practical work in science has changed over this period. Each response is important to ensure that we represent the impact of changes in practical science to researchers and policy-makers.

The study is led by Durham University's Centre for Evaluation and Monitoring (CEM) and School of Education and is funded by the Gatsby Charitable Foundation, with a contribution from the Wellcome Trust. The project is part of an on-going programme of work by Gatsby, Wellcome and the Nuffield Foundation to understand and improve practical work in science education.

We are extremely keen to gather responses from as many heads of science, science teachers and technicians as possible within each school, so please do ask as many colleagues as possible to complete a survey. The perspective of multiple members of staff within a school gives us much richer data and will allow us to understand much more about science practical work in schools.

To thank you for completing the survey, you are invited to participate in a prize draw to win one of five £100 gift vouchers. We would also like to offer you the chance to sign up to be the first to hear about the findings of the study in spring 2018.

Many thanks for your support of the study.

Vanessa Kind, Per Kind, Helen Cramman, Karen Jones, Kirsty Younger and Helen Gray

Durham University School of Education and Centre for Evaluation and Monitoring (CEM)

Consent

Your school / college name and postcode are requested in the survey to keep track of institutions over the three-year period, but these will not be identified in any report. Names of individual respondents are not required. All information given to us, including all personal details, will be treated in the strictest of confidence in accordance with the Data Protection Act. None of your experiences or thoughts will be shared with anyone outside of the study partners without removal of all identifying information. The survey responses and results (with all personally identifiable information removed) will be made freely available at the end of the study, and will help researchers, funders, and policy makers to understand the views about practical work in science in the UK. When the survey responses and results of the study are published, your answers will be included with data provided by other people, no individual or institution will be identifiable from the research findings. The study has ethical clearance from Durham University's School of Education Research Ethics Committee and is conducted in accordance with British Educational Research Association (2011) guidelines. Participants are completing the survey on a voluntary basis and may withdraw at any time. The survey takes approximately 15 minutes to complete.

To participate in the prize draw at the end of the survey, we request that you leave an email address. This email address will only be used at the end of July to notify you if you have won one of five £100 Amazon gift vouchers. We also separately request your email address if you would like to be notified when the findings of the study are published in spring 2018. In either case, your email address will not be used to identify you within the survey data and will not be used for marketing purposes.

If you have any queries or comments about the survey or study as a whole, please contact research@cem.dur.ac.uk.

To start replying to the science teachers survey, click on the "Next" button below (please note that clicking on the "Next" button below indicates that you consent to participating in the survey based on the information given on this page).

About your School or College

What is the name of your school/college? ✱ *Required*

What is your school/college's postcode? ✱ *Required*

Please enter a valid UK postcode.

In which nation is your school/college? ✱ *Required*

- England
- Scotland

Please indicate your school or college characteristics

Age range ✱ *Required*

- 5 – 19 Primary and Secondary
- 11 – 16 Secondary
- 11 – 19 Secondary
- 16 – 19 Secondary
- FE College
- Other

Funding ✱ *Required*

- Local authority / State-funded
- Academy / Free school
- Independent
- Other

Gender / Selectivity ✱ *Required*

- Boys non-selective
- Girls non-selective
- Mixed non-selective
- Boys selective
- Girls selective
- Mixed selective

How would you describe the status of practical work in science within your school/college?

- High (senior management prioritise practical work in science)
- Medium (senior management do not show any particular preference for practical work in science)
- Low (senior management favour other priorities over practical work in science)

Does your school/college offer a regular extra-curricular STEM (Science, Technology, Engineering, Mathematics) club that includes practical work in science?

- Weekly or fortnightly
- Monthly
- Annually or few times a year
- Never

How many students attend your school/college? ✱ *Required*

Please enter a whole number (integer).

For schools / sixth-form colleges only

	Number
How many 15-16 year-olds attend the school?	
How many 15-16 year-olds take examinations in three separate science subjects (physics, chemistry and biology)	
How many post-16 students attend the school/college?	
How many post-16 students study one or more science subjects?	

For FE colleges only

How many students study one or more science subjects at A/AS-level, Higher/Advanced Higher or academic equivalent?

Please enter a whole number (integer).

Practical Work Teaching this current year

Practical work is defined in this study as:

"*A learning activity in which students observe, investigate and develop an understanding of the world around them, through direct, hands-on, experience of phenomena or manipulating real objects and materials.*"

The next questions relate to teaching specific age groups (11-14, 14-16, Post-16). Please answer questions for each age group you teach.

Are you teaching AS / A level or Highers / Advanced Highers to Post-16 students in schools or colleges in the current academic year? ✱ *Required*

- Yes
- No

For those teaching AS / A level / Highers / Advanced Highers

Please indicate ONE science subject and Post-16 qualification you are teaching this year and answer all questions about teaching with this subject and qualification in mind.

Subject: ✱ *Required*

- Physics
- Chemistry
- Biology
- Other

If you selected Other, please specify:

Qualification: ✱ *Required*

More info

- A level
- Advanced Highers
- AS level
- Highers
- Other

If you selected Other, please specify:

Please specify the Awarding Organisation whose specification you are following for this

qualification.

- AQA
- Edexcel
- OCR
- CIE
- IB
- CCEA
- ICAAE
- WJEC
- SQA
- Other

If you selected Other, please specify:

What is the average number of students in a class for your selected subject and Post-16 qualification? ✱ *Required*

Please enter a number.

How much timetabled time (in hours) is allocated to the selected subject and Post-16 qualification each week? ✱ *Required*

Please enter a number.

Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year.

	Number of hours each week (please use decimals if necessary, e.g. 3.5) ✱ *Required*
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

For your selected subject and Post-16 qualification, how has the proportion of lesson time spent on practical work activities/experiments altered since the last academic year?

- ○ Increased
- ○ Decreased
- ○ Stayed the same

For your selected subject and Post-16 qualification, approximately how many days are allocated to each of these activities in an academic year?

	Days in a year
Outdoor practical work/fieldwork	
Off-site visits to science-related industry, museums, etc.	

How has the number of days for these activities changed since the last academic year?

	Increased	Decreased	Stayed about the same
Outdoor practical work	○	○	○

Off-site visits	○	○	○

For your selected subject and Post-16 qualification, approximately how many practical science activities will a student carry out during the current year? ✱ *Required*

Please enter a number.

How has the number of practical work activities/experiments altered since last year?

- ○ Increased
- ○ Decreased
- ○ Stayed the same

For your selected subject and Post-16 qualification, how much lesson time (in hours) is allocated to preparing for and carrying out practical work assessment required by the Awarding Organisation in the current academic year?

Please enter a number.

Please indicate how often the students in the selected subject and Post-16 qualification work individually, in pairs or in groups when carrying out practical work activities/experiments.

	Always	Most of the time	About half the time	Seldom	Never
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○

Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

Please indicate how frequently students in the selected subject and Post-16 qualification do the following in their practical work activities/experiments.

	All activities	Most activities	About half of the activities	A few activities	No activities
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

For the selected subject and Post-16 qualification, please compare and rate the impact of these factors on choosing what practical work to include in your lessons.

	High impact 5	4	3	2	No impact 1
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○

Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

Please rate how well you think students in your selected subject and qualification are prepared for practical activities/experiments when they start the Post-16 phase.

	Very well prepared	Well prepared	Marginally prepared	Unprepared
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

For your selected subject and Post-16 qualification, have your students had an opportunity to plan and carry out an open-ended, extended investigation (longer than 2 weeks) involving practical work in lesson time in the last academic year?

- ○ Yes
- ○ No

In your opinion, have recent changes to practical work assessment had an impact on assessing students' practical science skills, for your selected subject and Post-16 qualification?

- Positive impact
- No impact
- Negative impact

Do you offer Extended Project Qualifications (EPQ) in science in your school/college?

- Yes
- No

If yes, how many students chose to carry out an EPQ in science in the last academic year in your school/college?

Please enter a whole number (integer).

How many of these students chose to carry out an EPQ involving practical work in science in the last academic year in your school/college?

Please enter a whole number (integer).

Practical Work Teaching this current year for 14-16-year-olds

Are you teaching GCSE / National science to 14-16-year-old students in your school or college this current academic year? ✱ *Required*

- Yes
- No

For those teaching GCSE/National science to 14-16-year-old students

Please indicate ONE science subject and 14-16 qualification you are teaching this year and answer all questions about teaching with this subject and qualification in mind.

Subject: ✱ *Required*

- Physics
- Chemistry
- Biology

Qualification: ✱ *Required*

- National 4
- National 5
- Single subject GCSE
- Double Award GCSE
- Single Award GCSE
- Other

If you selected Other, please specify:

If you selected either Single subject, Double Award or Single Award GCSE, is this qualification an IGCSE?

- Yes
- No

Please indicate the year group within the 14 – 16 age range that you are referring to in your answers.

- 14–15-year-olds
- 15–16-year-olds

Please specify the Awarding Organisation whose specification you are following for this qualification:

- AQA
- Edexcel
- OCR
- CIE
- IB
- CCEA
- ICAAE
- WJEC
- SQA
- Other

If you selected Other, please specify:

What is the average number of students in a class for your selected subject and 14-16 qualification? ✱ *Required*

Please enter a number.

How much timetabled time (in hours) is allocated to the selected subject and year group each week? ✱ *Required*

Please enter a number.

Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year.

	Number of hours each week (please use decimals if necessary, e.g. 3.5) ✱ *Required*
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

For your selected subject and 14-16 qualification, how has the proportion of lesson time spent on practical work activities/experiments altered since last year?

- Increased
- Decreased
- Stayed the same

For your selected subject and 14-16 qualification, approximately how many days are allocated to each of these activities in this academic year?

	Days in a year
Outdoor practical work/fieldwork	

Off-site visits to science-related industry, museums, etc.	

How has the number of days for these activities changed since the last academic year?

	Increased	Decreased	Stayed about the same
Outdoor practical work	○	○	○
Off-site visits	○	○	○

For your selected subject and 14-16 qualification, approximately how many practical science activities will a student carry out during the current year?

Please enter a number.

How has the number of practical work activities/experiments altered since last year?

- ○ Increased
- ○ Decreased
- ○ Stayed the same

For your selected subject and 14-16 qualification, how much lesson time (in hours) is allocated to preparing for and carrying out practical work assessment required by the Awarding Organisation in the current academic year?

Please enter a number.

Please indicate how often the students in the selected subject and 14-16 qualification work individually, in pairs or in groups when carrying out practical work activities/experiments.

	Always	Most of the time	About half the time	Seldom	Never
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

Please indicate how frequently students in the selected subject and 14-16 qualification do the following in their practical work activities/experiments.

	All activities	Most activities	About half of the activities	A few activities	No activities
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○
Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

For the selected subject and 14-16 qualification, please compare and rate the impact of these factors on choosing what practical work to include in your lessons.

	High impact 5	4	3	2	No impact 1
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

Please rate how well you think students in your selected subject are prepared for practical activities/experiments when they start the 14-16 phase.

	Very well prepared	Well prepared	Marginally prepared	Unprepared
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○
Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

For your selected subject and 14-16 qualification, have your students had an opportunity to plan and carry out an open-ended, extended investigation (longer than 2 weeks) involving practical work in lesson time in the last academic year?

- ○ Yes
- ○ No

In your opinion, have recent changes to practical work assessment had an impact on assessing students' practical science skills, for your selected subject and 14-16 qualification?

- Positive impact
- No impact
- Negative impact

Practical Work Teaching this current year for 11-14-year-olds

Are you teaching science to 11-14-year-old students in the current academic year? ✱ *Required*

- Yes
- No

For those teaching 11-14-year-old students

Please indicate ONE science subject and year group you are teaching to 11-14s this year and answer all questions about teaching with this subject and qualification in mind.

Subject: ✱ *Required*

- Physics
- Chemistry
- Biology
- Science
- Other

If you selected Other, please specify:

Year group: ✱ *Required*

- 11-12s (Year 7)
- 12-13s (Year 8 / S1)
- 13-14s (Year 9 / S2)

If your selected year group is 13-14s (Year 9), are you teaching a GCSE syllabus?

- Yes
- No

If yes, is this qualification an IGCSE?

- Yes

- No

What is the average number of students in a class for your selected subject and 11-14 year group? ✱ *Required*

Please enter a number.

How much timetabled time (in hours) is allocated to the selected subject and year group each week? ✱ *Required*

Please enter a number.

Of the allocated hours, please estimate how many hours are used on the following activities in an average week in the current year.

	Number of hours each week (please use decimals if necessary, e.g. 3.5) ✱ *Required*
Practical work carried out by students	
Teacher-led demonstrations to the whole class	
Computer simulations and/or online experiments	

For your selected subject and 11-14 year group, how has the proportion of lesson time spent on practical work activities/experiments altered since last year?

- Increased

- Decreased
- Stayed the same

For your selected subject and 11-14 year group, approximately how many days are allocated to each of these activities in an academic year?

	Days in a year
Outdoor practical work/fieldwork	
Off-site visits to science-related industry, museums, etc.	

How has the number of days for these activities changed since the last academic year?

	Increased	Decreased	Stayed about the same
Outdoor practical work			
Off-site visits			

For your selected subject and 11-14 year group, approximately how many practical science activities will a student carry out during the current year?

Please enter a number.

For your selected subject and 11-14 year group, how has the number of practical work activities/experiments altered since last year?

- Increased
- Decreased
- Stayed the same

For your selected subject and 11-14 year group, how much lesson time (in hours) is allocated to preparing for and carrying out statutory practical work assessment in the current academic year?

Please enter a number.

Please indicate how often the students in the selected subject and 11-14 year group work individually, in pairs or in groups when carrying out practical work activities/experiments.

	Always	Most of the time	About half the time	Seldom	Never
Students work as individuals	○	○	○	○	○
Students work in pairs	○	○	○	○	○
Students work in groups (3 or more students per set of equipment)	○	○	○	○	○

Please indicate how frequently students in the selected subject and 11-14 year group do the following in their practical work activities/experiments.

	All activities	Most activities	About half of the activities	A few activities	No activities
Follow prepared instructions	○	○	○	○	○
Discuss purpose of activity/experiment	○	○	○	○	○
Design their own method	○	○	○	○	○
Propose a hypothesis	○	○	○	○	○
Evaluate uncertainty of data	○	○	○	○	○
Analyse conceptual ideas in the activity/experiment	○	○	○	○	○
Draw conclusions from data	○	○	○	○	○

Write a report about the activity/experiment	○	○	○	○	○
Evaluate methods of activity/experiment	○	○	○	○	○
Evaluate other students' experiments	○	○	○	○	○

For the selected subject and 11-14 year group, please compare and rate the impact of these factors on choosing what practical work to include in your lessons.

	High impact 5	4	3	2	No impact 1
Amount of timetabled lesson time	○	○	○	○	○
Curriculum requirements for prescribed activities	○	○	○	○	○
Preparation for written exams	○	○	○	○	○
Preparation for practical exams	○	○	○	○	○
Requirements for coursework or controlled assessment	○	○	○	○	○
Availability of equipment and resources	○	○	○	○	○
Availability of technical support	○	○	○	○	○
Your self-confidence for teaching practical work	○	○	○	○	○
Students' interest in science	○	○	○	○	○
Students' behaviour	○	○	○	○	○

Please rate how well you think students in your selected subject are prepared for practical activities/experiments when they start the 11-14 phase.

	Very well prepared	Well prepared	Marginally prepared	Unprepared
Working independently in a laboratory	○	○	○	○
Following a set of instructions	○	○	○	○

Using science equipment	○	○	○	○
Writing science reports	○	○	○	○

For your selected subject and 11-14 year group, have your students had an opportunity to carry out an open-ended, extended investigation (longer than 2 weeks) involving practical work in lesson time in the last academic year?

- ○ Yes
- ○ No

In your opinion, have recent changes to practical work assessment had an impact on assessing students' practical science skills, for your selected subject and 11-14 year group?

- ○ Positive impact
- ○ No impact
- ○ Negative impact

Background Information

Please select the age range corresponding to your age.

- Under 25
- 26–29
- 30–39
- 40–49
- 50–59
- 60 or older

Please indicate your gender

- Male
- Female
- Other
- Prefer not to say

Please indicate if your current teaching position is …

- Permanent
- Temporary

Please indicate if you work....

- Full-time
- Part-time

By the end of this academic year, how many years will you have been teaching altogether?

Please enter a number.

Qualifications

Please indicate your specialist science subject.

- Physics
- Chemistry
- Biology
- Other

If you selected Other, please specify:

What is the highest level of formal education you have completed in YOUR SPECIALIST science subject?

- Doctorate degree
- Masters degree
- Bachelor degree
- A level/Higher or other post-16 qualification such as BTEC, diploma, IB, NVQ
- Other (e.g. Qualification obtained overseas; Armed Forces training)

If you chose other, please specify:

What is the highest level of formal education you have completed in ANY SCIENCE subject?

- Doctorate degree
- Masters degree

- Bachelor degree
- A level/Higher or other post-16 qualification such as BTEC, diploma, IB, NVQ
- Other (e.g. Qualification obtained overseas; Armed Forces training)

If you chose other, please specify:

Please indicate which science subject you studied to this level.

- Biology - or related subject, e.g. Ecology/Marine
- Biology/Physiology/Zoology/Biomedical Science
- Physics - or related subject, e.g. Astrophysics/Electronics/Space Science
- Chemistry - or related subject e.g. Biochemistry/Pharmacology
- Earth Science/Geology/Geography
- Other, e.g. Engineering, Medicine, Optometry, general science

Please indicate if you hold a Post Graduate Certificate in Education or equivalent.

- Yes
- No

If your answer was yes, please indicate the age range for which you trained.

- 11-16
- 11-19
- Other

If you selected Other, please specify:

Please indicate if you hold qualified teacher status in the nation where you currently work. ✱
Required

- Yes
- No

Have you received any professional development related to teaching science practical work in the current academic year?

- Yes
- No

If you answered yes, please indicate the number of professional development days received.

Please enter a number.

How many further days of professional development related to teaching science practical work have you requested but not been permitted to attend?

Please enter a number.

How many further days of professional development related to teaching science practical work have you been offered by the school but were unable or chose not to attend?

Please enter a number.

We would be pleased to hear about any other experiences of practical work in science in your current school or college you would like to share. We also welcome your reflections on changes in practical work in science over the last few years.

Prize draw

PRIZE DRAW

To thank you for completing the survey, we would like to invite you to enter our free prize draw to win one of five £100 Amazon gift vouchers. Your email address is required so that we can get in touch if you win. Your details will not be used to identify you as part of the survey and will not be used for marketing purposes.

Please select whether you would like to participate in the free prize draw to win a £100 Amazon gift voucher.

- ○ Yes, I would like to participate in the free prize draw to win a £100 Amazon gift voucher.
- ○ No thanks, I would not like to participate.

Please enter your email address:

Please enter a valid email address.

Be the first to know about the findings of the study

Durham University, the Gatsby Charitable Foundation and the Wellcome Trust greatly appreciate the time that you have taken to support this study. To thank you for your involvement, we would like to add you to a priority notification list so that you will be the first to know when the findings of the study are published in spring 2018. The list may be shared with the Gatsby Foundation and the Wellcome Trust for this purpose. To be added to the list, please leave your email address below. Your email address will not be used to identify you within the survey data and will not be used for marketing purposes.

Please enter a valid email address.

Thank you

Thank you for taking part. You have responded anonymously to our survey. If you would like to contact us, please send an email to research@cem.dur.ac.uk.

6 School Staff Survey for science technicians - Year 3

Practical Work in Science - Technicians survey

The Practical Work in Science Survey is seeking views, opinions and experiences about practical work from everyone teaching and supporting science in any secondary school or college within England and Scotland.

We are now into the final year of this exciting three-year national study. Your responses, along with the data we have collected in the last two years, will build a rich and detailed picture of how practical work in science has changed over this period. Each response is important to ensure that we represent the impact of changes in practical science to researchers and policy-makers.

The study is led by Durham University's Centre for Evaluation and Monitoring (CEM) and School of Education and is funded by the Gatsby Charitable Foundation, with a contribution from the Wellcome Trust. The project is part of an on-going programme of work by Gatsby, Wellcome and the Nuffield Foundation to understand and improve practical work in science education.

We are extremely keen to gather responses from as many heads of science, science teachers and technicians as possible within each school, so please do ask as many colleagues as possible to complete a survey. The perspective of multiple members of staff within a school gives us much richer data and will allow us to understand much more about science practical work in schools.

To thank you for completing the survey, you are invited to participate in a prize draw to win one of five £100 gift vouchers. We would also like to offer you the chance to sign up to be the first to hear about the findings of the study in spring 2018.

Many thanks for your support of the study.

Vanessa Kind, Per Kind, Helen Cramman, Karen Jones, Kirsty Younger and Helen Gray

Durham University School of Education and Centre for Evaluation and Monitoring (CEM)

Consent

Your school / college name and postcode are requested in the survey to keep track of institutions over the three-year period, but these will not be identified in any report. Names of individual respondents are not required. All information given to us, including all personal details, will be treated in the strictest of confidence in accordance with the Data Protection Act. None of your experiences or thoughts will be shared with anyone outside of the study partners without removal of all identifying information. The survey responses and results (with all personally identifiable information removed) will be made freely available at the end of the study, and will help researchers, funders, and policy makers to understand the views about practical work in science in the UK. When the survey responses and results of the study are published, your answers will be included with data provided by other people, no individual or institution will be identifiable from the research findings. The study has ethical clearance from Durham University's School of Education Research Ethics Committee and is conducted in accordance with British Educational Research Association (2011) guidelines. Participants are completing the survey on a voluntary basis and may withdraw at any time. The survey takes approximately 15 - 20 minutes to complete.

To participate in the prize draw at the end of the survey, we request that you leave an email address. This email address will only be used at the end of July to notify you if you have won one of five £100 Amazon gift vouchers. We also separately request your email address if you would like to be notified when the findings of the study are published in spring 2018. In either case, your email address will not be used to identify you within the survey data and will not be used for marketing purposes.

If you have any queries or comments about the survey or study as a whole, please contact research@cem.dur.ac.uk.

To start replying to the science technician survey, click on the "Next" button below (please note that clicking on the "Next" button below indicates that you consent to participating in the survey based on the information given on this page).

About your School or College

What is the name of your school/college? ✱ *Required*

What is your school/college's postcode? ✱ *Required*

Please enter a valid UK postcode.

In which nation is your school/college? ✱ *Required*

- England
- Scotland

Please indicate your school or college characteristics

Age range ✱ *Required*

- 5- 19 Primary and Secondary
- 11 – 16 Secondary
- 11 – 19 Secondary
- 16 – 19 Secondary
- FE College
- Other

Funding ✱ *Required*

- Local authority / State-funded
- Academy / Free school
- Independent
- Other

Gender / Selectivity ✱ *Required*

- Boys non-selective
- Girls non-selective
- Mixed non-selective
- Boys selective
- Girls selective
- Mixed selective

How many students attend your school/college? ✱ *Required*

Please enter a whole number (integer).

How would you describe the status of practical work in science within your school/college?

- High (senior management prioritise practical work in science)
- Medium (senior management do not show any particular preference for practical work in science)
- Low (senior management favour other priorities over practical work in science)

Does your school/college offer a regular extra-curricular STEM (Science, Technology, Engineering, Mathematics) club that includes practical work in science?

- Weekly or fortnightly
- Monthly
- Annually or few times a year
- Never

Staffing

How many technicians (full-time equivalent, FTE) in total support science in your school/college? ✱ *Required*

Please enter a number.

How many technicians are employed on the following basis?

	FTE
Term-time only (pro-rata)	
Term-time only (pro-rata) with additional paid time during school holidays	
Year round (term time and school holidays)	

How many senior technicians (FTE) in total support your science department? ✱ *Required*

Please enter a number.

How many technicians (FTE) support each of these subjects?

	FTE
Physics	
Chemistry	
Biology	

Are any technician positions currently unfilled?

- Yes
- No

How has the number of technicians (FTE) in your school/college changed within the last year?

- Increased
- Stayed the same
- Decreased

Background Information

Please select the age range corresponding to your age.

- Under 25
- 26–29
- 30–39
- 40–49
- 50–59
- 60 or older

Please indicate your gender

- Male
- Female
- Other
- Prefer not to say

Please indicate if your position as technician is …

- Permanent
- Temporary

Please indicate if your work as technician is....

- Full-time
- Part-time

Please indicate if your work as technician is....

- Term-time only (pro-rata)
- Term-time only (pro-rata) with additional paid time during school holidays
- Year-round (term time and school holidays)

By the end of this academic year, how many years will you have been a science technician altogether?

Please enter a number.

Qualifications

What is the highest level of formal education you have completed in a SCIENCE subject?

- Doctorate degree
- Masters degree
- Post Graduate Certificate of Education or equivalent
- Bachelor degree
- Other 18+ qualification, e.g. BTEC Certificate / Diploma / Apprenticeship / Technical Qualification
- A level or AS level/Higher or Advanced Higher
- GCSE/O level/CSE/Scottish Standard
- No formal science qualification
- Other, e.g. Qualification obtained overseas; Armed Forces training; Please specify:

If you selected Other, please specify:

Are you a Registered Science Technician (RSciTech)?

- Yes
- No

Are you working towards becoming a Registered Science Technician (RSciTech)?

- Yes
- No

Have you received any professional development related to supporting science practical work in

the current academic year?

- Yes
- No

Please indicate the number of professional development days received

Please enter a number.

How many further days of professional development related to supporting science practical work have you requested but not been permitted to attend?

Please enter a number.

How many further days of professional development related to supporting science practical work have you been offered by the school but were unable or chose not to attend?

Please enter a number.

Your role as a technician

Practical work is defined in this study as:

> *"A learning activity in which students observe, investigate and develop an understanding of the world around them, through direct, hands-on, experience of phenomena or manipulating real objects and materials."*

Please indicate if you work as a general science or specialist science subject technician.

- ○ General science technician
- ○ Specialist science subject technician

If applicable, please state which specialist science subject(s) you support.

- ☐ Physics
- ☐ Chemistry
- ☐ Biology
- ☐ Other

If you selected Other, please specify:

We would like to know about the tasks you do as a technician. Please indicate how often you do these tasks: *Select all that apply.*

	Daily	Weekly	Monthly	Termly	Annually	Never
Advising a teacher how to do an experiment / use equipment	○	○	○	○	○	○
Photocopying worksheets for lessons	○	○	○	○	○	○

Discussing science curriculum requirements with a teacher	○	○	○	○	○	○
Setting up equipment for an experiment	○	○	○	○	○	○
Repairing technical equipment, e.g. oscilloscopes, microscopes	○	○	○	○	○	○
Planning a new experiment, e.g. by constructing and/or modifying equipment	○	○	○	○	○	○
Filing worksheets/paper resources	○	○	○	○	○	○
Liaising with school senior managers about science practical equipment or resources	○	○	○	○	○	○
Moving furniture or textbooks	○	○	○	○	○	○
Setting up general IT equipment, e.g. electronic whiteboard, students' computers	○	○	○	○	○	○
Working directly with students on practical science activities in lessons	○	○	○	○	○	○
Working directly with students on practical science activities outside lessons	○	○	○	○	○	○

Does your job include any responsibilities/roles outside the science department, either formal or informal?

- ○ Yes
- ○ No

Additional role

How much time in hours per week do you spend on your additional role(s)?

Please enter a number.

Please indicate what your additional role(s) is/are. *Select all that apply.*

- [ ] Technician in another department
- [ ] School/college health and safety advisor
- [ ] Teaching assistant
- [ ] Other

If you selected Other, please specify:

Preparation Rooms

How many preparation rooms are there in your school or college?

Please enter a whole number (integer).

How are preparation rooms organised?

- Subject-specific preparation rooms for biology, chemistry and physics
- Preparation rooms are shared between all sciences
- Both specialist and shared preparation rooms

Are any preparation rooms shared with another department (outside science)?

- Yes
- No

In the preparation room(s) you use, please evaluate the following factors and facilities.

	Available and sufficient/working	Available but insufficient/not working	Not available	Not relevant
Storage space for equipment				
Working surfaces to meet the needs of the department				
Gas, water, electricity supply				
Proximity to laboratories				

Computer, internet connections and telephone	○	○	○	○
Trolley for moving equipment	○	○	○	○
Space for trolleys	○	○	○	○
First aid kit	○	○	○	○
Mechanical ventilation	○	○	○	○
A lockable, ventilated chemical store	○	○	○	○
Refrigerator/freezer	○	○	○	○
Dishwasher or laboratory glass washer	○	○	○	○
Fume cupboard	○	○	○	○
A still for distilling water	○	○	○	○
Provision for the secure storage of gas cylinders	○	○	○	○

Laboratories

How many laboratories are there in your school/college?

Please enter a whole number (integer).

In the laboratories you assist, please indicate to what extent the following are satisfactory (available and in good working order) in relevant laboratories.

	All	Most	About half	A few	None
Easy access for technicians	○	○	○	○	○
Located close to prep rooms	○	○	○	○	○
Accessible to SEND students	○	○	○	○	○
Appropriate space for class sizes	○	○	○	○	○
Good quality furnishings, e.g. benches, stools, shelving, storage	○	○	○	○	○
Fully functioning sinks and drainage	○	○	○	○	○
Roof, floor, walls in good condition	○	○	○	○	○
Basic Health and Safety standards met, e.g. eye protection, screens, fire extinguishers	○	○	○	○	○
Mechanical ventilation	○	○	○	○	○
Computers available for student use	○	○	○	○	○
Space to leave long term investigations/experiments	○	○	○	○	○
Well distributed taps	○	○	○	○	○
Well distributed power points	○	○	○	○	○
Accessible shut-offs for gas, electricity and water and an earth-leakage circuit breaker on the electrical supply	○	○	○	○	○
Provision for teacher-led demonstrations that might require gas, water and electricity	○	○	○	○	○
An interactive whiteboard, projector etc.	○	○	○	○	○

Working blinds/curtains/light-dimming system for black outs (Physics only)	○	○	○	○	○
Fume cupboard with working gas, electricity and water supplies (Chemistry only)	○	○	○	○	○
Well distributed gas taps (Chemistry only)	○	○	○	○	○

Science Equipment

Please select the items in the following three questions that are relevant for the laboratories you serve and indicate if an item is available in working order and/or as a complete set.

Physics or General Science Laboratory item

	Available in working order/complete set	Available but not working/not complete set	Not available	Don't know
Oscilloscope with spectrum analysis	○	○	○	○
Van de Graaff Generator	○	○	○	○
Air Track with air source	○	○	○	○
Electric Vacuum Pump	○	○	○	○
Class set (groups) of data loggers with sensors	○	○	○	○
Class set (groups) of ray boxes and lenses	○	○	○	○
Magnetic field observation kit (iron filings, magnets)	○	○	○	○
Class set (groups) of multimeters or volt and ammeters	○	○	○	○
Class set (groups) of Newtonmeters	○	○	○	○
Class set (groups) of magnets	○	○	○	○
Class set (groups) of tuning forks	○	○	○	○
Class set (groups) of bulbs, bulb holders and wires	○	○	○	○

Chemistry or General Science Laboratory item

	Available in working order/complete set	Available but not working/not complete set	Not available	Don't know
UV Spectrophotometer	○	○	○	○
More than one digital precision balance (±0.001g)	○	○	○	○
Class set (groups) of magnetic stirrers	○	○	○	○
Class set (groups) of heating mantles	○	○	○	○
Class set (groups) of distillation apparatus	○	○	○	○
Class set (groups) of pH meters	○	○	○	○
Class set (groups) of student molecular modelling kit	○	○	○	○
Class set (groups) of ground glass gas syringe	○	○	○	○
Class set (groups) of titration equipment	○	○	○	○
Class set (groups) of Erlenmeyer flasks	○	○	○	○
Class set (groups) of Bunsen burners	○	○	○	○
Eye protection for all students	○	○	○	○

Biology or General Science Laboratory item

	Available in working order/complete set	Available but not working/not complete set	Not available	Don't know
Genetic engineering kit	○	○	○	○
Digital microscope with visualizer and/or camera	○	○	○	○
Haemocytometer	○	○	○	○
Gel electrophoresis equipment and centrifuge	○	○	○	○
Class set (groups) of datalogger with sensors	○	○	○	○
Class set (groups) of optical microscopes	○	○	○	○
Water bath and thermometers	○	○	○	○
Class set (groups) of colorimeters	○	○	○	○
Class set (groups) of field work equipment	○	○	○	○
Anatomical models, e.g. eye, torso, ear, heart	○	○	○	○
Class set (groups) of dissection kit	○	○	○	○
Class set (groups) of plastic petri dishes	○	○	○	○

We would be pleased to hear about any other experiences of practical work in science in your current school or college you would like to share. We also welcome your reflections on changes in practical work in science over the last few years.

Prize draw

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- ○ Yes, I would like to participate in the free prize draw to win a £100 Amazon gift voucher.
- ○ No thanks, I would not like to participate.

Please enter your email address:

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Thank you

Thank you for taking part. You have responded anonymously to our survey. If you would like to contact us, please send an email to research@cem.dur.ac.uk.

Durham University

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