

Monitoring practical science in schools and colleges

**Appendix 7: Higher Education Student Survey** 

**Durham University** 

**Prepared for the Gatsby Charitable Foundation and the Wellcome Trust** 

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# 2 Higher Education student survey - Year 1

		About your university				
Ple	ase note	e that questions in bold with a * are compulsory.				
*1	Namas	funitorial (*Postinal)				
1.	Name C	of university (*Required)				
*2.	In whic	h nation is your university? (*Required)				
Sele	ect one.					
	0	England				
	0	Northern Ireland				
	0	Scotland				
	0	Wales				
	Which s Required	subject are you studying at university? (Select all the options which apply)				
Sele	ect all tha	at apply.				
	Biologi	cal Science (including Life Sciences, Plant Biology and Animal Sciences)				
	□ Chemistry					
	Physics	s (including Astronomy)				
	Other:					



#### About your experiences before university

We would like to know about your experiences in practical science at school or college before you started university and how well they prepared you for the first year of your degree.

(Typical examples of post-16 education are Scottish Highers, A Levels, International Baccalaureate Diploma Programme etc. If you entered university from an international school, or from a foundation course, please reflect on these courses when answering the questions.)

4. Thinking about each of the practical skills listed below, how well prepared do you feel in using them at university? (Select one option per row)

Select one per row.

	Not at all prepared	Somewhat unprepared	Somewhat prepared	Very well prepared	Don't know
Confidence to work in a science laboratory	0	0	0	0	0
Confidence to undertake experiments in an outdoor context	0	0	0	0	0
Ability to solve problems independently in a practical context	0	0	0	0	0
Ability to follow laboratory instructions	0	0	0	0	0
Ability to understand laboratory and/or fieldwork instructions	0	0	0	0	0
Ability to understand the theory behind the scientific method	0	0	0	0	0
Competence in scientific methods and practices, specifically: Planning experiments	0	0	0	0	0
Competence in scientific methods and practices, specifically: Use of scientific equipment	0	0	0	0	0
Competence in scientific methods and practices, specifically: Time management	0	0	0	0	0
Competence in scientific methods and practices, specifically: Note-taking	0	0	0	0	0



	meth	petence in scientific nods and practices, ifically: Scientific report- ng	0	0	0	0	0	
	conc	ty to use mathematical epts and skills in a practical ext, for example, for data ysis	0	0	0	0	0	
		ty to follow laboratory th and Safety regulations	0	0	0	0	0	
	labo	ty to use IT tools in the ratory or in the field, e.g. naking measurements	0	0	0	0	0	
	analy	ty to use IT tools for ysing and presenting data ined in own experiments	0	0	0	0	0	
	Communication, team-working and presentation skills when working in a laboratory or in the field		0	0	0	0	0	
•	labor equip chen	ty to use specialist ratory and/or fieldwork pment e.g. glassware in nistry, an oscilloscope in ics or a microscope in	0	0	0	0	0	
	meth	ty to apply specialist nods and techniques when ving out experiments or work	0	0	0	0	0	
	- 11-	and the second second second	£:- -1			f 11		
		re there been any laboratory Felt unable to do well in beca		•	_		you	
	Select	one.						
	0	Yes (Answer quest	tion number	5.1.)				
	0	No						
	5.1 If y	yes, please give an example.						



	6. Overall, how do you rate laboratory teaching in your post-16 education as a preparation for laboratory courses and/or fieldwork in your first year at university?							
	Select one.							
0	O Poor preparation							
0	Pr	epared me fairly poorly						
0	Pr	epared me fairly well						
0	Ve	ery good preparation						
0	D	on't know						
		About you						
7 \\/\	nat is v	vour gender?						
Select		roui genuer:						
	0	NA-1-						
	0	Male Female						
	0							
		Prefer not to say						
	nat typ	pe of school/college did you attend for your post-16 education? (Select all the options y)						
Select	t all tha	rt apply.						
	Loca	authority state-funded school/college						
	Acad	emy						
	Free school							
	Independent school/college							
	Further Education college							
	☐ International school/college							
	Univ	ersity foundation course						
	Othe	r:						
1								



			0111101010				
9	. In which	. In which nation did you study for your post-16 qualifications? *					
S	elect one.						
	0	England					
	0	Northern Ireland					
	0	Scotland					
	0	gland orthern Ireland otland ales her e which Post-16 science qualifications you have.					
	0	Other					
1	.0. Please s	state which Post-16 science qualifications you have.					
	Leve	I/Ouglification e.a. A-Level Higher IB	Suhiect e a Physics				

10. F	10. Please state which Post-16 science qualifications you have.							
	Level/Qualification e.g. A-Level, Higher, IB	Subject e.g. Physics						
1								
2								
3								
4								
5								
6								
7								



11. Have you participated in training or studied for any of the qualifications in the list below? (Select all options which apply to you)								
Select all that	Select all that apply.							
□ BTEC aı	□ BTEC and other level 3 vocational qualifications							
□ Extend	ed Project Qualification (EPQ)							
□ CREST /	Award							
□ Duke o	f Edinburgh							
□ Nuffield	d Research Placements							
□ British	Olympiad							
Other:								
□ I have r	not participated in any additional training or qualifications							
	ell us about any particular course or other activity which you think was most helpful to oping the practical skills you need at university.							
	considering a career in science or science-related field?							
Select one.								
0	Yes							
0	No							
0	O Don't know yet							
-	hoping to carry out an independent research project as part of your degree (e.g. a sertation, Industrial placement, extended laboratory project/ fieldwork)?							
0	Yes							
0	No							
0	Don't know yet							



# 3 Higher Education student survey - Year 2

	About your university						
Please no	te that questions in bold with a * are compulsory.						
*1 Name	of university (*Required)						
1. Ivanic	or university ( nequired)						
	·						
*2. In whi	ch nation is your university? (*Required)						
Select one.							
0	England						
0	Northern Ireland						
0	Scotland						
0	Wales						
*3. Which	subject are you studying at university? (Select all the options which apply) (*Required)						
Select all th	nat apply.						
☐ Biolog	☐ Biological Science (including Life Sciences, Plant Biology and Animal Sciences)						
□ Chem	istry						
□ Physic	cs (including Astronomy)						
□ Other	:						



#### About your experiences before university

We would like to know how well your experiences of practical science during your post-16 education prepared you for experimental work in the first year of your degree.

(Typical examples of post-16 education are Scottish Highers, A Levels, International Baccalaureate Diploma Programme. If you entered university from an international school, or from a foundation course, please reflect on the courses you took when answering the questions.)

4. Thinking about each of the practical skills listed below, how well prepared do you feel in using them at university? (Select one option per row)

Select one per row.

	Not at all prepared	Somewhat unprepared	Somewhat prepared	Very well prepared	Don't know
Confidence to work in a science laboratory	0	0	0	0	0
Confidence to undertake experiments in an outdoor context	0	0	0	0	0
Ability to solve problems independently in a practical context	0	0	0	0	0
Ability to follow laboratory instructions	0	0	0	0	0
Ability to understand laboratory and/or fieldwork instructions	0	0	0	0	0
Ability to understand the theory behind the scientific method	0	0	0	0	0
Competence in scientific methods and practices, specifically: Planning experiments	0	0	0	0	0
Competence in scientific methods and practices, specifically: Use of scientific equipment	0	0	0	0	0
Competence in scientific methods and practices, specifically: Time management	0	0	0	0	0
Competence in scientific methods and practices, specifically: Note-taking	0	0	0	0	0



Competence in scientific methods and practices, specifically: Scientific reportwriting	0	0	0	0	0
Ability to use mathematical concepts and skills in a practical context, for example, for data analysis	0	0	0	0	0
Ability to follow laboratory Health and Safety regulations	0	0	0	0	0
Ability to use IT tools in the laboratory or in the field, e.g. for making measurements	0	0	0	0	0
Ability to use IT tools for analysing and presenting data obtained in own experiments	0	0	0	0	0
Communication, team-working and presentation skills when working in a laboratory or in the field	0	0	0	0	0
Ability to use specialist laboratory and/or fieldwork equipment e.g. glassware in chemistry, an oscilloscope in physics or a microscope in biology	0	0	0	0	0
Ability to apply specialist methods and techniques when carrying out experiments or fieldwork	0	0	0	0	0

Ability to apply specialist methods and techniques when carrying out experiments or fieldwork		0	0	0	0	0		
	5. Have there been any laboratory or fieldwork activities in your degree course so far that you have felt unable to do well in because you didn't have the right practical skills?							
Se	lect	one.						
	0	Yes	(Answer ques	tion number	5.1.)			
	0	No	•					
5.	1 If v	yes, please giv	ve an example.					
								_



6.00	erall, how do you rate the quality of the practical science teaching in your post-16 education
	paration for laboratory courses and/or fieldwork in your first year at university?
Select	one.
0	Poor preparation
0	Prepared me fairly poorly
0	Prepared me neither poorly nor well
0	Prepared me fairly well
0	Very good preparation
0	Don't know



#### **About you**

7. Wł	nat is y	our gender?							
Select	one.								
	)	Male							
	O Female								
(	)	Prefer not to say							
	nat typ n apply	e of school/college did you attend for your post-16 education? (Select all the options y)							
Select	all tha	t apply.							
	Local	authority state-funded school/college							
	Acad	emy							
	Free	school							
	Inde	pendent school/college							
	Furth	er Education college							
	Inter	national school/college							
	Unive	ersity foundation course							
	Othe	r:							
9. In v	which	nation did you study for your post-16 qualifications? *							
Select									
	) -	England							
	<u> </u>	Northern Ireland							
	) -	Scotland							
	) 	Wales							
(	<u> </u>	Other							
10. Pl	lease s	tate which Post-16 science qualifications you have.							
	Leve	/Qualification e.g. A-Level, Higher, IB Subject e.g. Physics							
1									
	1								
2									



3	
4	
5	
6	
7	
	ave you participated in training or studied for any of the qualifications in the list below?
Select	all that apply.
□ E	BTEC and other level 3 vocational qualifications
□ E	Extended Project Qualification (EPQ)
	CREST Award
	Duke of Edinburgh
	Nuffield Research Placements
	British Olympiad
	Other:
╽	
	have not participated in any additional training or qualifications
	lease tell us about any other course or activity which you found helpful in developing ical science skills valuable at university.



	University
13. Are you	considering a career in science or science-related field?
Select one.	
0	Yes
0	No
0	Don't know yet
•	hoping to carry out an independent research project as part of your degree (e.g. aboratory project/ fieldwork, industrial placement, a Masters-level dissertation)?
Select one.	
0	Yes
0	No
0	Don't know yet
	·
	Prize draw
win one of touch if you	ou for completing the survey, we would like to invite you to enter our free prize draw to five £25 Amazon gift vouchers. Your email address is required so that we can get in u win. Your details will not be used to identify you as part of the survey and will not be arketing purposes.
15. Please s	select whether you would like to participate in the free prize draw to win a £25 Amazon r.
Select one.	
	ould like to participate in the free prize draw to win a £25 (Answer question
<del>                                   </del>	n gift voucher. number 15.1.) nks, I would not like to participate
-  110 (1101	ind, i would not like to purticipate
15.1 My en	nail address is:



4 Higher Education student survey - Year 3

# Practical Work in Science - Higher Education Student Survey

### Page 1: Science Practical Work Survey - Higher Education Student Survey

Dear Science Student,

We are seeking the views, opinions and experiences about practical work held by first year undergraduate students in Higher Education institutions within the United Kingdom. The survey forms part of a three-year study of science practical work in education being carried out annually in schools, colleges and Higher Education institutions in all four UK nations. The study is led by Durham University's School of Education and is funded by the Gatsby Charitable Foundation, with a contribution from the Wellcome Trust.

We would like to know your views, opinions and experiences of practical science in a short questionnaire taking 5-10 minutes to complete.

We will not identify you or your university in any reports. Your answers will not be seen by your department. Taking part is voluntary. You may choose not to take part at any time.

All information given to us, including all personal details, will be treated in the strictest of confidence in accordance with the Data Protection Act. 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.

To participate in the free 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 January to notify you if you have won one of five £25 Amazon gift vouchers. The email address will not be used to identify you within the survey data and will not be used for marketing purposes.

Receiving responses from as many students as possible at each university provides the study with much richer data, so please do pass the link to the survey on to your peers if you think that they have not received it.

If you have any questions about the survey, please contact <a href="mailto:research@cem.dur.ac.uk">research@cem.dur.ac.uk</a>.

Many thanks for your support of the study.

Vanessa Kind, Helen Cramman, Kirsty Younger, Helen Gray and Paivi Eerola

#### **Durham University School of Education**

To start the 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.

# Page 2: About your university

1. Name of your university? * Required
2. In which nation is your university? * Required
© England
C Northern Ireland
© Scotland
C Wales
3. Which subject are you studying at university? Select all the options which apply. * Required
☐ Biological Science (including Life Sciences, Plant Biology and Animal Sciences) ☐ Chemistry
☐ Physics (including Astronomy)
□ Other
3.a. If you selected Other, please specify:

## Page 3: About your experiences before university

We would like to know how well your experiences of practical science during your post-16 education prepared you for experimental work in the first year of your degree.

(Typical examples of post-16 education are Scottish Highers, A Levels, International Baccalaureate Diploma Programme. If you entered university from an international school, or from a foundation course, please reflect on the courses you took when answering the questions.)

4. Thinking about each of the practical skills listed below, how well prepared do you feel in using them at university? Select one option per row.

	Not at all prepared	Somewhat unprepared	Somewhat prepared	Very well prepared	Don't know
Confidence to work in a science laboratory	0	0	О	0	0
Confidence to undertake experiments in an outdoor context	0	O	O	O	0
Ability to solve problems independently in a practical context	0	0	o	С	0
Ability to follow laboratory instructions	0	О	О	О	0
Ability to understand laboratory and/or fieldwork instructions	0	0	O	О	0
Ability to understand the theory behind the scientific method	0	0	0	О	0
Competence in scientific methods and practices, specifically: Planning experiments	0	0	0	О	O
Competence in scientific methods and practices, specifically: Use of scientific equipment	0	0	0	О	0
Competence in scientific methods and practices, specifically: Time management	0	0	0	О	0

4.a. Thinking about each of the practical skills listed below, how well prepared do you feel in using them at university? Select one option per row.

	Not at all prepared	Somewhat unprepared	Somewhat prepared	Very well prepared	Don't know
Competence in scientific methods and practices, specifically: Note-taking	0	О	0	C	0
Competence in scientific methods and practices, specifically: Scientific report-writing	0	О	O	C	О
Ability to use mathematical concepts and skills in a practical context, for example, for data analysis	O	C	O	C	0
Ability to follow laboratory Health and Safety regulations	0	0	С	С	0
Ability to use $\Pi$ tools in the laboratory or in the field, e.g. for making measurements	0	С	O	C	0

Ability to use $\Pi$ tools for analysing and presenting data obtained in own experiments	0	О	О	O	0
Communication, team-working and presentation skills when working in a laboratory or in the field	0	О	O	O	0
Ability to use specialist laboratory and/or field work equipment e.g. glassware in chemistry, an oscilloscope in physics or a microscope in biology	О	o	o	С	0
Ability to apply specialist methods and techniques when carrying out experiments or fieldwork	0	О	o	О	0

experiments of ficiawork					
5. Have there been any laboratory or fieldwork activities in your degree because you didn't have the right practical skills?	ee course so	o far that you h	ave felt unable	e to do well i	n
C Yes					
5.a. If yes, please give an example.					
6. Overall, how do you rate the quality of the practical science teachir courses and/or fieldwork in your first year at university?	ng in your po	ost-16 educatic	n as prepara	tion for labor	ratory
<ul> <li>C Poor preparation</li> <li>C Prepared me fairly poorly</li> <li>C Prepared me neither poorly or well</li> <li>C Prepared me fairly well</li> <li>C Very good preparation</li> <li>C Don't know</li> </ul>					

## Page 4: About you

AS Level

7. What is you	r gender?							
○ Male								
C Female								
C Other								
C Prefer not to	say							
8. What type o	f school/co	ollege did you	ı attend for	your pos	st-16 edu	cation? Sel	ect all the	e options which apply.
☐ Local author	rity state-fu	unded school	/college					
☐ Academy								
☐ Free school								
Independen		_						
Further Edu								
☐ International								
☐ University fo	oundation o	course						
□ Other								
8.a. If you select	cted Other	, please spec	cify:					
9. In which nati	on did you	ı study for yol	ur post-16	qualificat	tions?			
○ England								
<ul> <li>Northern Irel</li> </ul>	and							
<ul><li>Scotland</li></ul>								
C Wales								
C Other								
10. Please sta	te which p	ost-16 scienc	ce qualifica	ations yo	u have. S	elect all tha	t apply.	
	Biology	Chemistry	Physics	Maths	Further	Other	Other	If you selected Other, please specify
					Maths	Science		,,,,
A Level	Г		Г	Г		Г		

Г

Advanced Higher	Г	Г	Г	Г	Г	Г	Г	
Higher	Г	Г	Г	Г	Г	Г	Г	
International Baccalaureate	Г	Г	Г	Г	Г	Г	Г	
Other	Г	Г	Г	Г	Г	Г	Г	
F BTEC and complete First Extended Proceedings of Edition Nuffield Results From Tother  11.a. If you select	other Level roject Qua ard nburgh rearch Plac piad articipated	3 vocational lification (EP cements in any additi	qualificati Q) onal trainir ecify:	ons	lifications			ing practical science skills valuable at
13. Are you co	nsidering a	a career in so	cience or s	cience-r	elated fiel	d?		
C Yes								

14. Are you hoping to carry out an independent research project as part of your degree (e.g. extended laboratory project/ieldwork, industrial placement, a Masters-level dissertation)?	
C Yes	
C No	

O Don't know yet

O Don't know yet

## Page 5: 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 £25 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.

15. Please select whether you would like to participate in the free prize draw to win a £25 Amazon gift voucher.
<ul> <li>Yes, I would like to participate in the free prize draw to win a £25 Amazon gift voucher</li> <li>No thanks, I would not like to participate</li> </ul>
15.a. My email address is:
Please enter a valid email address.

## Page 6: Thank you

If you have any questions about the survey, please contact <a href="mailto:research@cem.dur.ac.uk">research@cem.dur.ac.uk</a>.



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