Supplementary material

Excerpt from the skills tracker which is being used to map the skills gained from different modules for each course for each year of study. The table below shows the modules taken by first year undergraduate students studying on the biochemistry and microbiology course. The term 1 modules (Practical Techniques in Biology and Living systems) were those used to assess what skills would be lost due to social distancing and hence one of the important considerations in deciding on the activities in the home lab kit. Skills attained from these modules are listed under different category headings: Personal, professional and reflective; generic scientific skills; subject specific skills and graduate attributes. The source of these skills (T for taught as provided by lectures, seminars and lab classes; A where these are part of an assessment), which modules have these skills and the number of opportunities that there are across the different modules are shown in the skills tracker. The excerpt shown below contains examples (but not all skills) for each of the categories. The generic skills text highlighted in bold text directly link to aspects of the home labs kit.

Table S1. Skills tracker.

		Practical Techniques in Biology	Living Systems	Introduction to Microbiology	Introduction to Biochemistry	Genetics & Immunology	Molecular Principles for Biochemistry
	Personal professional & reflective skills						
1	Reflective practice/ Portfolio construction	**A**					
2	Peer Review/ correctly cite, reference work, plagiarism	**A**	**A**	**A**			**A**
4	Presentation orally or by poster						**A**
5	Personal integrity and ethical awareness					**A**	
8	Working as part of a team or independently	**T**	**T**	**A**	**T**	**T**	**T**
9	Interpret and present a case study						
12	Problem solving skills	**T**		**T**		**A**	**T**
14	Develop skills necessary for self-managed and lifelong learning	**T**	**A: EXM**	**A**		**A**	**A:EXM**
	Generic scientific skills						
1	Production of a formal scientific report, assessed or formative		**Labfile-Form**	**A**	**A**		
2	Accurate recording of lab data by use of a lab book/ record/ journal/ (extended) lab file	**T**			**A**		**T**
4	**Data analysis and interpretation (including replicates, variables, appropriate use of statistics**	**A**		**A**		**A**	**A:EXM**
5	**IT skills (word processing, spreadsheets, databases, graphics & presentation packages)**	**T**		**A**		**A**	**A**
6	Correct use of personal protective equipment	**T**	**T**	**A**		**T**	**T**
8	General laboratory safety	**T**	**T**	**A**	**T**	**T**	**T**
11	**Accurate use of pipettes**	**A LAB**	**T**	**T**	**T**	**T**	**T**

12	Accurate use and calibration of balances	**T**				**T**	
13	**Preparation of serial dilutions**	**A LAB**	**T**	**T**		**A**	
14	Use a spectrophotometer effectively and creation of a standard curve	**A LAB**	**T**		**T**	**T**	**T**
15	Use of and safety issues of centrifuges	**T**				**T**	
16	**Moles and molarity calculations and solution preparations (incl. ppm and %)**	**A**				**T**	**T**
17	**Use of microscopes for identification / preparation of specimens for observation**	**A**		**T**		**T**	
18	Electrophoresis	**T**				**A**	
19	**Use of positive and negative controls**	**T**	**T**	**A**		**A**	
20	Molecular biology techniques involving DNA/protein, qualitative and quantitative	**T**	**T**			**A**	**T**
21	**Bioinformatics analysis/Statistics**	**T**				**T**	
22	Cell fractionation		**T**				
23	Qualitative assays for macromolecules (protein, DNA, RNA, glycogen)	**T**	**T**				
25	Calculation of bacterial generation time		**T**	**T**			
29	**Creation of a bacterial growth curve**		**T**				
	Subject specific skills						
1	Aseptic techniques			**T (theory=A)**		**T**	
2	Streak plate to obtain single colonies			**T (theory=A)**			
3	Gram stain (colony/broth/biological sample)			**T**			
4	Enumeration of micro-organisms by viable count (spread or pour plate or Miles Misra)			**T**			
6	Microbial identification (API, catalase/oxidase, agglutination)			**T**			
7	Susceptibility testing			**T**			
8	Media preparation and sterilisation			**T**			
9	Containment level 2 safety			**A**			
12	Chromatography (thin layer chromatography)	**T**					
14	Molecular methods for species identification			**T**			
16	Cell counting using a haemocytometer	**A LAB**				**T**	
17	Enzyme activity assays				**A**		
	Graduate attributes for:						
5	Analyse the interaction of microbes with their environment, including other microflora			**T**			
7	Acquire, analyse, interpret, evaluate and apply data from a variety of sources			**A**		**A**	
8	Develop critical skills in the interpretation of scientific knowledge and data		**T**	**A**	**T**	**A**	**T**

9	Apply scientific principles and methodologies in investigations			**A**		**A**	**T**
10	Use equipment and materials competently and demonstrate acquisition of technical skills relevant to the biological discipline	**T**	**T**	**T**	**T**		**T**
13	Apply numerical skills	**A**		**A**	**A**	**A**	**T**
15	Work independently and as part of a team, developing leadership capacity and the ability to work both autonomously and collaboratively	**T**		**A**		**T**	**T**
20	Understand the methods of acquiring, interpreting and analysing biological information	**T**	**T**	**T**			**T**
21	Gain knowledge of a range of practical and presentation techniques and methodologies, including data analysis and use of statistics	**T**				**T**	
27	Demonstrate an understanding of the structure and function of both prokaryotic and eukaryotic cells (including the molecular basis and role of subcellular compartmentalization)		**A**	**A**			
28	Apply laboratory-orientated numerical calculations (e.g. inter-conversion of masses, moles, and molarity, preparation of solutions and accurate dilutions)	**A**					**T**
29	Be capable in data visualization and analysis, including the application of data transformations (e.g. logarithmic, exponential)			**T**	**A**		**T**
30	Demonstrate an understanding of the principles, and have practical experience of, a wide range of biochemical techniques (e.g. basic molecular biology, cell biology and microbiology methods, spectrophotometry, the use of standards for quantification, enzyme kinetics; macromolecular purification, chromatography and electrophoresis)	**A**					**T**