Education in Chemistry
Sustainability in chemistry 2021
Goal 2: **End hunger, achieve food security and improved nutrition and promote sustainable agriculture**
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Information sheet for assessing the common practical assessment competencies (CPACs) in the English A-level chemistry curriculums (OCR, Edexcel, AQA).

The rate of hydrolysis of urea			Date:
Apparatus and techniques (AT)			
Code	**Description**		
	Use appropriate apparatus to record a range of time, volume of liquids measurements		
	Use laboratory apparatus for a variety of experimental techniques, including titration		
	Measure pH using pH meter, or pH probe on a data logger		
	Safely and carefully handle solids and liquids, including corrosive, irritant substances		
	Measure rates of reaction by at least two different methods, for example: an initial rate method		
Targeted common practical assessment criteria			
Code	**Description**	**Evidenced by**	**Standard achieved**
1	Correctly follows instructions to carry out experimental techniques or procedures	*Teacher observation*	
2a	Correctly uses appropriate instrumentation, apparatus and materials (including ICT) to carry out investigative activities, experimental techniques and procedures with minimal assistance or prompting	*Teacher observation, verbal questioning during practical*	
2b	Carries out techniques or procedures methodically, in sequence and in combination, identifying practical issues and making adjustments when necessary	*Written question*	
2c	Identifies and controls significant quantitative variables where applicable and plans approaches to take account of variables that cannot readily be controlled	*Written question, teacher observation*	
2d	Selects appropriate equipment and measurement strategies in order to ensure suitably accurate results	*Teacher observation or written equipment list with justification*	
3a	Identifies hazards and assesses risks associated with these hazards, making safety adjustments as necessary, when carrying out experimental techniques and procedures in the lab or field	*Hazards and precautions identified – written question*	
3b	Uses appropriate safety equipment and approaches to minimise risks with minimal prompting	*Teacher observation*	
4a	Makes accurate observations relevant to the experimental or investigative procedure	*Completed results chart showing accuracy for results. Look at this holistically*	
4b	Obtains accurate, precise and sufficient data for experimental and investigative procedures and	*Complete results chart, with correct title and units containing accurate results*	

	records this methodically using appropriate units and conventions		
5a	Uses appropriate software and/or tools to process data, carry out research and report findings.	*Correctly drawn graph. Calculations leading to conclusion based on results*	
5b	Cites sources of information demonstrating that research has taken place, supporting planning and conclusions		
Teacher/Student targets from practical:			
Note: for a learner to have achieved total competency in a skill, they need to have achieved that common practical assessment criteria a number of times across a number of practicals during the two years of an A Level chemistry course.			

Teacher observation check list

Suggested format for teacher observation check list to assess CPACs visually during the lesson.

CPAC Date: Practical: Name:	1a Correctly follows instruction	2a Correctly uses apparatus	2d Selects appropriate equipment	3b Appropriate safety		
				Goggles	Pipette	Burette