BTEC Assignment Brief

Qualification	Pearson BTEC Level 3 National Certificate in Applied Science Pearson BTEC Level 3 National Extended Certificate in Applied Science Pearson BTEC Level 3 National Foundation Diploma in Applied Science Pearson BTEC Level 3 National Diploma in Applied Science Pearson BTEC Level 3 National Extended Diploma in Applied Science
Unit number and title	**Unit 2: Practical Scientific Procedures and Techniques**
Learning aim(s) (For NQF only)	**C:** Undertake chromatographic techniques to identify components in mixtures.
Assignment title	**Separate to identify**
Assessor	Mr. Richard Steele
Issue date	19/04/2021
Hand in deadline	30/04/2021

Vocational Scenario or Context	You are a newly appointed technical assistant at a large chemical plant, *Chemcalequip*. As part of your induction period and to progress in your role, you have to demonstrate skills in a range of practical procedures and techniques. The company is often required to identify substances. You need to demonstrate that you can carry out different **chromatographic techniques** to separate and identify components in mixtures. In a report of the techniques you have used, you will need to explain the techniques, analyse and evaluate your results and suggest improvements.

Task 1	**Evaluate the chromatographic techniques you have used in relation to the outcomes.** Demonstrate safe working practices and a high level of proficiency when using the following chromatography techniques; • paper chromatography of extracted plant pigments • Thin layer chromatography, TLC, of extracted plant pigments • paper chromatography of amino acids. Repeat any separations where you can justify a lack of satisfaction with the quality of the separation obtained. Produce a report to include : • an evaluation and analysis of the links between the chromatography techniques used and the chromatograms produced.

	• conclusions about the components and their effect on separation leading to the results obtained. • results from the paper chromatography and TLC of extracted plant pigments and from paper chromatography of amino acids • calculations of Rf values and consideration of the factors that influence separation. • an explanation of the principles behind the chromatographic separations and their suitability. • justification of conclusions about the identification of components in the mixtures, e.g. polarity of the solvents, effect of molecule size on its mobility. • Suggestions and rationales for specific improvements to the chromatographic procedures carried out and full justification of these suggestions.
Checklist of evidence required	A report on the experiments you have carried out. An observation report with a checklist, completed by the tutor, identifying the level of independence and proficiency demonstrated whilst carrying out each technique. Safe working practices must be identified.

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
C.D3	Evaluate the chromatographic techniques used in relation to outcomes and suggest improvements.
C.M3	Analyse own chromatograms and relate the factors that affect the separation of mixtures to the quality of results obtained.
C.P5	Correctly use chromatographic techniques to produce chromatograms.
C.P6	Explain the use of chromatographic techniques to separate mixtures.

Sources of information to support you with this Assignment	http://www.virtlab.com/ http://www.chemguide.co.uk/analysis/chromatography/thinlayer.html#top **Above are some examples of websites. Further useful resources may be found at:** **http://qualifications.pearson.com/en/support/published-resources.html#step1**
Other assessment materials attached to this Assignment Brief	*eg, work sheets, risk assessments, case study*