Improve
food & drink sector skills council

| 661 Principles of hypothesis testing in a food environment | | |
|---|---|---|
| **SQA Unit Code** | | **H16L 04** |
| **Level 3** | **SCQF Level 6** | **SCQF Credit value 3** |

**Unit Summary**
This unit is about the understanding the principles of hypothesis testing as part of your organisation's drive to achieve excellence in food and drink manufacture and/or supply operations. This is important to the manufacture, processing and supply of food and drink within the food supply chain, where for example food safety is a critical factor.

You will need to understand the principles behind hypothesis testing and the business benefits of using them during an achieving excellence programme. You will need to understand hypothesis testing and the business benefits of the technique. You will need to understand how statistics are structured and applied. You will need to know how to comply with your company policy for improvement, understand how to take responsibility for your actions, and refer any issues outside of the limit of your authority to others.

This unit is for you if your role requires you to understand the principles of hypothesis testing in food and drink manufacture or supply. You may be a line manager or supervisor and/or have responsibilities for all or part of the production/supply process and for promoting improvements.

In order to be assessed as competent you must demonstrate to your assessor that you can consistently perform to the requirements set out below. Your performance evidence must include at least one observation by your assessor.

You need to know and understand:

Evidence of knowledge and understanding should be collected during observation of performance in the workplace. Where it cannot be collected by observing performance, other assessment methods should be used.

1. How the health, safety and hygiene requirements of a work area can influence hypothesis testing
2. What hypothesis testing is
3. Why we use hypothesis testing
4. How hypothesis testing can benefit a Six Sigma improvement project
5. Why it is important to identify a suitable sample size
6. Suitable sample sizes and how they are calculated
7. The meaning of Alpha risk, Beta risk and Delta/Sigma ratio
8. The meaning of 'practical difference' and 'statistical difference'
9. How hypothesis testing is conducted
10. How to calculate mean, median, mode, standard deviation, range and variance
11. The meaning 'population' and 'sample'
12. The meaning of 'null hypothesis'
13. The meaning of 'alternate hypothesis'


SPS Reference: QI.300

| |
|---|
| 14. How to determine the correct statistic from the following: F-test, Chi-Square test, normality tests, Ttest, Levene's test, Bartlett's test, contingency tables, one way ANOVA<br>15. Levels of authority linked to problem resolution |
| Evidence of performance may employ examples of the following assessment:<br>• observation<br>• written and oral questioning;<br>• evidence from company systems (e.g. Food Safety Management System)<br>• reviewing the outcomes of work<br>• checking any records of documents completed<br>• checking accounts of work that the candidate or others have written |