

FDQ - Qualification Specification

FDQ number	Qualification title	EPA Plan number	EQF Level	Qualification number (QN)
327-346	FDQ Level 5 End-point Assessment for Dairy Technologist	ST0393/V1.1	6	610/1770/X

Qualification objective

This End-point Assessment (EPA) qualification is designed for learners who have completed the on-programme training for the Dairy Technologist standard apprenticeship. Successful completion of this EPA confers the correct level of knowledge, skills and behaviours specified in the apprenticeship standard, and contributes towards the achievement of the Level 5 Dairy Technologist apprenticeship. FDQ provides an EPA statement of results but certification of the complete apprenticeship standard is provided by the Education and Skills Funding Agency (ESFA).

Regulation

The EPA qualification is externally quality assured by Ofqual.

Entry Requirements

Learners need to be 16 years old or over to take this qualification, employed or contracted in a workplace and enrolled on the Dairy Technologist standard apprenticeship.

Prior to taking this EPA qualification, entrants should meet the Level 5 Dairy Technologist gateway requirements as specified in the assessment plan:

- On and off the job training to develop knowledge, skills and behaviours as specified in the apprenticeship standard

- Achieved functional skills in English and Maths at level 2 (unless the apprentice has a special educational need or learning difficulty or disability as specified by the apprenticeship funding rules)
- Compiled a portfolio of evidence to underpin the professional discussion
- Provided a project summary for the project report and presentation

Qualification Content

This qualification tests the mandatory knowledge, skills and behaviours set out in the Dairy Technologist standard including: knowledge and application of food and dairy safety, dairy chemistry and dairy microbiology; knowledge of milk processing, cheese and fermented product technology, butter and milk fat technology and the chemistry of whey protein. In addition they will be tested on their skills in problem solving, continuous improvement and project management, as well as the behaviours expected of a technologist at this level. Apprentices will have a solid grounding in most aspects of dairy production and have a good level of product knowledge.

Entrants will undergo three test components as detailed on the following pages, which must all be passed to achieve the apprenticeship. The apprentice is awarded a final grade of fail, pass, merit or distinction.

This qualification could lead to

This qualification will support progression to further learning in:

1. Subject areas including:

- Food safety and quality
- Hygiene and plant safety
- Continuous improvement
- Production management

2. Further qualifications and apprenticeships including:

- Level 7 Senior Leader
- Management and leadership qualifications

Qualification support

The Level 5 Dairy Technologist standard and assessment plan has been developed by the Dairy Technologist apprenticeship employer group and approved by the Institute for Apprenticeships and technical Education (IfATE); Ofqual carries out external quality assurance of the EPA. The FDQ EPA qualification is supported by the Food and Drink Training and Education Council and a range of employers and training providers.

Fitness for Purpose

FDQ has in place a comprehensive quality system built to ensure its EPA qualification assessments are valid and fair. Built on validity principles - reliability, comparability, manageability, minimising bias, moderation and fairness - our policies, procedures and operational practice including assessment development and maintenance, Internal Quality Assurance and Moderation ensure our EPA qualifications are developed, delivered and remain fit for purpose.

Further information

Further information can be obtained from our website at: <http://www.fdq.org.uk>

Or by contacting FDQ:

Tel: 0113 859 1266

E mail: fdq@fdq.org.uk

Methods of Assessment

The qualification includes 3 assessment components, each of which must achieve a pass in order to pass the EPA requirement of the Level 5 Dairy Technologist apprenticeship. Specifications for each of the assessment components are available on FDQ's secure system FDQAwards. Please contact FDQ's EPA team at epa@fdq.org.uk for more information.

Overall grading of the EPA qualification is fail, pass, merit or distinction, which is calculated from the combination of grades achieved in each of the three assessment instruments.

The three assessment instruments may be undertaken in any order within the typical six-month EPA period and assessment on each may be undertaken by a number of different independent examiners.

Assessment Instruments and Time Allowed

Level 5 EPA for Dairy Technologist ST0393 V1.1	
Assessment Instruments and possible grades	
Instrument	Possible grades
Project Report and Presentation with Questions (PRPQ)	Fail/pass/distinction
Professional Discussion underpinned by portfolio of evidence (PD)	Fail/pass/distinction
Written Knowledge Test (WKT)	Fail/pass
Overall apprenticeship grading	Fail/pass/merit/distinction

Test structure		Time allowed
PRPQ	Project report of 4500-5500 words Project presentation	Submitted at week 16 post gateway 20 mins presentation, 30 mins questioning (+10% if required)
PD	Minimum of 10 open questions based on portfolio of evidence	90 mins (+10% if required)
WKT	15 questions, each requiring a long answer response of approx. 100 words	120 mins

Qualification scope

The qualification will assess the following knowledge, skills and behaviours:

Standard Ref	Knowledge to be assessed	Assessment Method		
		PRPQ	PD	WKT
K1	The dairy industry structure. Financial considerations. Ethical business practices.		•	
K2	Different teams and functions involved in dairy production. Dairy technologist role. Limits of scope of practice: when to seek input from others and when to escalate.	•		
K3	Good Manufacturing Practice (GMP). Production and operational planning concepts.			•
K4	Health and safety. Health and Safety at Work Act – responsibilities. Health and safety culture. Control of Substances Hazardous to Health (CoSHH). The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). Manual handling. Personal			•

	Protective Equipment (PPE). Types of hazards. Risk assessments, mitigation methods, and method statements (safe systems of work).			
K5	Principles of food and dairy safety. Allergenic control. Good Hygienic Practice (GHP). Microbiology and food borne illnesses. Biological, physical, allergenic (cross-contamination), and chemical contamination of dairy and related products. Food storage, temperature control and preservation of dairy products. Hygienic design, construction and maintenance of food premises and equipment, and their cleaning and disinfection. Pest control. Personal hygiene and training requirements. Food safety culture. Traceability.			•
K6	Food safety legislation principles: Food Safety Act, Regulation (EC) 852/2004, The General Food Law Regulation (EC) 178/2002, The Food Safety and Hygiene (England) Regulations, The Food Hygiene (Scotland) Regulations, The Food Hygiene (Wales) Regulations, The Food Information to Consumers Regulations (EC)1169/2011, Food Information Regulations, Regulation (EC) No 2073/2005 on Microbiological criteria for foodstuffs, The Weights and Measures (Packaged Goods) Regulations. Sources of information for legislation changes.			•
K7	Food safety management control of dairy and related food systems: Hazard Analysis and Critical Control Points (HACCP), Threat Analysis of Critical Control Points (TACCP), and Vulnerability Assessment of Critical Control Points (VACCP).		•	
K8	Principles of dairy chemistry. Chemical properties. Compositional milk and dairy product analysis.			•

	Quality testing of milk and dairy products.			
K9	Principles of dairy microbiology. Types of micro-organisms and their structure. Cultivation conditions and procedures. Aseptic conditions and Good Laboratory Practice (GLP): organisation and discipline within the laboratory. Hygiene monitoring and auditing. Laboratory analysis techniques. Indicator organisms. Interpretation of microbiological data as an indicator of risk.			•
K10	Milk and dairy derivatives as raw materials. Primary production. Dairy farming practice. Composition of milk and dairy produce. Additives. Dairy products as an ingredient in other foods and associated allergenic issues. Dairy alternatives (non-milk-based ingredients).			•
K11	Function of quality assurance within the dairy industry. Quality assurance schemes and factors affecting the Quality Management Plan (QMP).		•	
K12	Cleaning, disinfection, and sterilisation. Different techniques: chemical, heat, steam technology and ultraviolet - when they should be used. Components of Clean in Place (CIP). New developments in cleaning technology. Environmental impact of cleaning. Cleaning validation, verification, and optimisation techniques.			•
K13	Basic physical and hygienic design principles of dairy process engineering: mass and energy balances, modes of thermal transfer, principles of fluid flow, and rheology (deformation and flow of materials - solids and liquids).		•	

K14	Principles of food industry unit operations. Preservation operations. Dairy industry unit operations. Factory service operations.			•
K15	Product development processes: recipe development, specifications, market gap identification, acceptance testing and process design, packaging requirements, and nutrition and organoleptic characteristics.		•	
K16	Milk processing: end-to-end. New concepts in milk processing. By-products.			•
K17	Cheese and fermented product technology. Cheese and cheese related products. Yogurt and related products. Soured creams and crème fraiche.			•
K18	Butter and milk fat technology. Butter manufacture. Yellow fat and dairy spread manufacture. Ice cream manufacture. Dairy dessert manufacture.			•
K19	The chemistry of whey protein. Whey processing techniques and technology.			•
K20	Leadership and management techniques: influencing, negotiation, and conflict management.	•		
K21	Change management principles and techniques.	•		
K22	Project management roles and techniques: planning, prioritising, organising, stakeholder management, and risk management.	•		
K23	Problem solving and fault finding: 5 whys, root cause analysis, Failure Mode Effects Analysis (FMEA).	•		
K24	Continuous improvement principles and techniques: Plan-do- check-act			

	(PDCA), Lean, 6 Sigma, and Statistical Process Control (SPC). Lean manufacturing tools. Process mapping.	•		
K25	Data analysis techniques. Data analysis and reporting systems.	•		
K26	Dairy supply chain: mapping and risk management. World dairy economic drivers. Milk and dairy product supply and demand factors. Food security.			•
K27	Environmental Protection Act and environmental management systems.	•		
K28	Measuring environment impact and environmental audit requirements.		•	
K29	Dairy automation and process control. Control systems. Instrumentation. Control theory principles. Machine communications and networking. Integrated control and automation systems. Digital manufacturing. Dairy industry automated processes.			•
K30	Information technology: Management Information Systems (MIS), spreadsheets, presentation, word processing, email, virtual communication and learning platforms. General Data Protection Regulation (GDPR). Cyber security.		•	
K31	Communication techniques.	•		
K32	Report writing techniques.		•	
K33	Workplace training and development techniques: coaching and transfer of knowledge.		•	
K34	Equality, diversity, and inclusion. Unconscious bias	•		

Standard Ref	Skills to be assessed	Assessment Method		
		PRPQ	PD	WKT
S1	Apply food safety management systems.		•	
S2	Apply food and dairy hygiene practice principles.		•	
S3	Comply with food safety regulations and procedures.		•	
S4	Comply with health and safety regulations, guidelines, and procedures.		•	
S5	Comply with environmental regulations, guidelines, and procedures	•		
S6	Apply sustainable working practices. For example, efficient use of resources, waste minimisation.	•		
S7	Apply quality control processes.		•	
S8	Apply extended knowledge of underlying dairy concepts.	•		
S9	Identify, review and evaluate, and select scientific techniques, procedures, and methods in the context of new and different areas of work.		•	
S10	Apply scientific techniques, procedures, and methods to undertake tasks.		•	
S11	Apply engineering concepts and principles to analyse dairy performance.		•	
S12	Collect data. Analyse, interpret, and evaluate data, scientific and technology information, concepts,	•		

	and ideas including use of statistical methods.			
S13	Apply changes to dairy processing unit operations.	•		
S14	Apply problem solving techniques, identifying issues. Propose solutions to problems.	•		
S15	Use continuous improvement techniques and make recommendations.	•		
S16	Apply project management techniques: planning and prioritising tasks, organising resources, managing stakeholders and risk management.	•		
S17	Conduct environmental impact assessments.		•	
S18	Develop technical written content. For example, operating procedures, working instructions, and reports.		•	
S19	Communicate with others for example, colleagues, customers, and stakeholders. Use industry terminology where appropriate.	•		
S20	Create and deliver presentations.	•		
S21	Negotiate with and influence colleagues or stakeholders; manage conflict.	•		
S22	Use information and digital technology.		•	
S23	Identify training needs. Coach individuals.		•	

Standard Ref	Behaviours to be assessed	Assessment Method		
		PRPQ	PD	WKT
B1	Take personal responsibility for and promote food safety and health and safety.		•	
B2	Take personal responsibility for and promote sustainable working practices.	•		
B3	Act in a professional manner.	•		
B4	Take responsibility for the quality of work and enable others to work to high standards. For example, decisive, self-reliant, and motivated.	•		
B5	Respond and adapt to work demands and situations.	•		
B6	Recognise limitations, seek input from others and escalate issues when required.	•		
B7	Collaborate with others for example, within teams, across disciplines, and external stakeholders, promoting inclusion.	•		
B8	Ambassador for the dairy industry.		•	
B9	Committed to maintaining and enhancing competence of self and others through Continued Professional Development (CPD).		•	

Grading Criteria

The three assessment components are assessed using the grading criteria on the following pages.

PRPQ Grading Criteria

Grading criteria for the PRPQ		
Independent examiners will use the grading criteria below to holistically assess the project report, presentation and answers to questions.		
Theme	PASS	DISTINCTION
KSBS	Apprentices must demonstrate all the pass descriptors	Apprentices must demonstrate all the pass descriptors and all of the distinction descriptors
1.Data, information, and concepts K25, S8, S12	1.Analyses, interprets, and evaluates the collected data, scientific and technology information, concepts, and ideas including use of statistical methods to inform knowledge and draw conclusions to support the task. 2.Applies extended knowledge of underlying concepts and principles to support the task. (K25, S8, S12)	1.Demonstrates how the data, scientific and technology information, concepts, and ideas collectively support (validate) their conclusions. (S12)

<p>2.Problem solving and continuous improvement</p> <p>K23, K24, S14, S15</p>	<p>3.Applies problem solving and fault-finding techniques to identify and define the issue(s).</p> <p>4.Proposes solutions that have the potential to address the problem(s).</p> <p>5.Applies continuous improvement techniques to support the project. Uses the outcomes of those tools to inform their decisions.</p> <p>6.Generates and makes a recommendation(s) that has the potential to make a viable improvement.</p> <p>(K23, K24, S14, S15)</p>	<p>2.Analyses and evaluates the actual or potential value of a specific problem solving or improvement suggestion.</p> <p>(K23, K24, S14, S15)</p>
<p>3.Environment and sustainability</p> <p>K27, S5, S6, B2</p>	<p>7.Complies with environmental techniques regulations and management systems and applies and promotes established sustainable working practices.</p> <p>(K27, S5, S6, B2)</p>	<p>3.Identifies and promotes ideas for new viable working practices that have the potential to improve sustainability.</p> <p>(S6, B2)</p>
<p>4.Working with others</p> <p>K2, K20, K31, K34 S19, S21, B6, B7</p>	<p>8.Involves different teams, working autonomously and escalating as required, in line with their remit. (K2, B6)</p> <p>9.Negotiates with and influences others, managing conflict and promoting inclusion, to reach collaborative outcomes.</p> <p>(K20, K34, S21, B7)</p> <p>10.Uses verbal and written communication techniques suitable for the context, adapting style and use of terminology to suit the audience. Uses industry terminology correctly. (K31, S19)</p>	<p>4.Uses behavioural insights to modify approach to stakeholders preferred working style.</p> <p>(K20, S21, B7)</p>

<p>5. Project and change management</p> <p>K21, K22, S13, S16, B4, B5</p>	<p>11. Applies changes to dairy processing unit operations to meet required outcome, taking responsibility for the quality of the work and enabling others to work to high standards for example, coaching or supporting others, recognising and supporting the needs of others.</p> <p>(K21, S13, B4)</p> <p>12. Uses project management techniques to plan and prioritise tasks, organise resources, manage stakeholders, and manage risk; responding and adapting to work demands and situations to deliver the project.</p> <p>(K22, S16, B5)</p>	<p>5. Evaluates their approach in conjunction with stakeholders to identify improvements that could be applied to project or change management in the future.</p> <p>(K21, K22, S13, S16, B5)</p>
<p>6. Presentation</p> <p>S20, B3</p>	<p>13. Creates and delivers a structured and clear presentation with supporting material suitable for the context, presenting a professional image.</p> <p>(S20, B3)</p>	<p>None</p>

PD Grading Criteria

<p style="text-align: center;">Grading criteria for the PD Independent examiners will use the grading criteria below to holistically assess the answers to questions.</p>		
Theme	Pass	Distinction
KSBs	Apprentices must demonstrate the pass descriptors	Apprentices must demonstrate all the pass descriptors and all of the distinction descriptors
1.Dairy industry and business considerations K1, B8	1.Explains the dairy industry structure, financial considerations, and ethical best practices. 2.Discusses how they have acted as an ambassador for the industry. (K1, B8)	None
2.Compliance K7, S1, S2, S3, S4, B1	3.Explains how they have taken personal responsibility for and promoted food safety and health and safety through the application of food safety management systems and food and dairy hygiene practice principles, and compliance with food safety and health and safety regulations. (K7, S1, S2, S3, S4, B1)	1.Applies food safety enhancements to improve the quality culture environment. (S1, S2, B1)
3.Quality assurance K11, S7	4.Describes how they have applied quality control processes to contribute to the quality assurance function, explaining factors that affect the QMP. (K11, S7)	2.Analyses and evaluates applied quality assurance processes in terms of costs and benefits to production operations. (K11, S7)

<p>4.Scientific concepts, principles and techniques S9, S10</p>	<p>5.Explains how they have identified, reviewed and evaluated, and selected scientific techniques, procedures and methods to meet the needs of new and different areas of work. (S9)</p> <p>6.Explains how they have applied scientific techniques, procedures, and methods correctly to undertake tasks. (S10)</p>	<p>None</p>
<p>5.Engineering concepts and principles K13, S11</p>	<p>7.Describes how they have applied engineering concepts and principles to analyse dairy performance, explaining the basic physical and hygienic design principles of dairy process engineering. (K13, S11)</p>	<p>3.Evaluates and validates performance against hygienic design principles. (K13, S11)</p>
<p>6.Environmental impact K28, S17</p>	<p>8.Describes how they have conducted environmental impact assessments, explaining environmental audit requirements. (K28, S17)</p>	<p>None</p>
<p>7.Innovation K15</p>	<p>9.Explains given product development processes:</p> <ul style="list-style-type: none"> • recipe development • specifications • market gap identification • acceptance testing and process design • packaging requirements • nutrition and organoleptic characteristics <p>(K15)</p>	<p>4.Evaluates the inter-connections between development processes to ensure the product meets the needs of stakeholders. (K15)</p>

<p>8.Information technology K30, S22</p>	<p>10.Describes how they have used information technology for different purposes, explaining how they comply with General Data Protection Regulation (GDPR) and cyber security. (K30, S22)</p>	<p>None</p>
<p>9.Technical written content K32, S18</p>	<p>11.Describes different types of technical written content they have developed, explaining how they use report writing techniques to ensure it is suitable for the context. (K32, S18)</p>	<p>5.Gives examples of producing reports that are based on complex and multiple inputs or sources. (K32, S18)</p>
<p>10.Workplace training and development K33, S23, B9</p>	<p>12.Describes how they identify their own training needs and coach others using different techniques to meet the identified need. 13.Describes CPD they have undertaken and plans for CPD to enhance competence. Explains what the impact of their CPD has been and how it has benefitted others and the business. (K33, S23, B9)</p>	<p>None</p>

WKT Grading Criteria

Theme	Pass
KSBS	Apprentices must evidence all the pass descriptors
Manufacturing operations K3	Understands Good Manufacturing Practice (GMP). Understands production and operational planning concepts. (K3)
Health and safety K4	Understands health and safety factors and their importance. (K4)
Food and dairy safety K5	Understands food and dairy safety factors and their importance. (K5)
Food safety legislation K6	Understands key features of given food safety legislation and identifies sources of information for legislation changes. (K6)
Dairy chemistry K8	Understands principles of dairy chemistry in relation to chemical properties, compositional milk and dairy product analysis, or quality testing of milk and dairy products. (K8)
Dairy microbiology K9	Understands given dairy microbiology factors and practices or techniques. (K9)
Milk and dairy products K10	Understands the milk and dairy product factors and considerations. (K10)
Cleaning, disinfection, and sterilisation K12	Understands required cleaning, disinfection, and sterilisation techniques and related considerations. (K12)

Operations K14	Understands the principles of given food industry unit operation and how they relate to other operations. (K14)
Milk processing K16	Understands milk processing from end to end, new concepts in processing and by-products. (K16)
Cheese and fermented products K17	Understands cheese and fermented product technology and products. (K17)
Butter and milk fat K18	Understands butter and milk fat technology and manufacture for given product. (K18)
Whey K19	Understands the chemistry of whey protein, whey processing techniques and technology. (K19)
Dairy supply chain K26	Understands the dairy supply chain factors and considerations. (K26)
Dairy automation K29	Understands given dairy automation and process control factors. (K29)

Grades for each component are calculated as follows:

Assessment component	Grading calculation
PRPQ	<p>The observation and questions are marked holistically against the grading criteria below and using the following grade calculation as a guide:</p> <p>Available grades: Fail/pass/distinction Grade boundaries: Fail: Less than 13 Pass grading criteria achieved Pass: 13 Pass grading criteria plus up to 4 Distinction grading criteria achieved Distinction: 13 Pass grading criteria plus 5 Distinction grading criteria achieved</p>
PD	<p>The PD is marked against the grading criteria below:</p> <p>Available grades: Fail/pass/distinction Fail: Less than 13 Pass grading criteria achieved Pass: 13 Pass grading criteria plus up to 4 Distinction grading criteria achieved Distinction: 13 Pass grading criteria plus 5 Distinction grading criteria achieved</p>
WKT	<p>15 x long response questions:</p> <p>5 marks available per answer Available grades: Fail/pass Grade boundaries: Fail: 0-51 marks out of 75 Pass: 52-75 marks out of 75</p>

Overall EPA grade calculation:

Grades from individual assessment methods are combined in the following way to determine the grade of the EPA as a whole:

(Any grade = fail, pass, distinction)

PRPQ	PD	WKT	Overall Grading
Any grade	Any grade	Fail	Fail
Any grade	Fail	Any grade	Fail
Fail	Any grade	Any grade	Fail
Pass	Pass	Pass	Pass
Distinction	Pass	Pass	Merit
Pass	Distinction	Pass	Merit
Distinction	Distinction	Pass	Distinction

Specimen assessments

Project report with presentation and questions - sample questions, with sample follow on questions

1. Explain why you used a particular statistical analysis method. What other methods could you have used and what would they have been able to analyse?
2. Using your knowledge of dairy protein chemistry, can you explain the changes occurring in the product when you made changes to the process? What effect on shelf-life are these changes likely to make?
3. Explain the reasons why you used a particular problem-solving technique in more detail. What other techniques could you have used and why didn't you choose to use them?
4. Describe how you applied a particular continuous improvement technique. How have you calculated the benefit of the improvements you have suggested?
5. How will you support others to adapt to the changes you are proposing? How will you use their input to add value to any future changes you are likely to make?
6. Give an example of how you have had to adapt your communication style for a particular audience.

Professional Discussion underpinned by a portfolio of evidence - sample questions

These questions are typical of those that will be asked during the PD. These questions should be used to assist the apprentice to practice before the EPA.

Theme	Sample questions and follow-on questions. Actual questions will be based on portfolio of evidence.
Dairy industry and business considerations (K1, B8)	<ul style="list-style-type: none"> • Explain how your business fits into the wider dairy industry and identify the USPs of your business. Who are your main competitors? • Give an example of how you have represented your business in the industry.

<p>Compliance (K7, S1, S2, S3, S4, B1)</p>	<ul style="list-style-type: none"> • Explain the procedures you follow to ensure dairy hygiene. In microbiological terms, why are these important? • Which food safety regulations do these procedures comply with?
<p>Quality assurance (K11, S7)</p>	<ul style="list-style-type: none"> • Explain the procedures that take place in your dairy to monitor quality. In dairy chemistry terms, what can happen to the product when the quality of the product doesn't meet specification? • What factors can affect the quality management process?
<p>Scientific concepts, principles and techniques (S9, S10)</p>	<ul style="list-style-type: none"> • Provide an example of a scientific technique that is used to test one of your dairy products. State the test, the method followed to complete the test and finally what the result means for the product. • If a new scientific technique is required where could you seek support and advice on this?
<p>Engineering concepts and principles (K13, S11)</p>	<ul style="list-style-type: none"> • Illustrate when you have used your engineering knowledge to improve performance in your business. • Explain how you validated the improvements.
<p>Environmental impact (K28, S17)</p>	<ul style="list-style-type: none"> • Explain the process of conducting an environmental impact assessment. • What do you need to consider when deciding if an environmental impact audit is required?
<p>Innovation (K15)</p>	<ul style="list-style-type: none"> • In your portfolio you gave an example of a product development project that you have been involved in. Explain the steps you took. How did you ensure the product was acceptable to the customer?

<p>Information technology (K30, S22)</p>	<ul style="list-style-type: none"> • Give an example of how you use IT in your production processes? How do you ensure the security of the system from a cyber perspective? • What are the key requirements of GDPR? How does GDPR affect your business?
<p>Technical written content (K32, S18)</p>	<ul style="list-style-type: none"> • You mention in your portfolio that you have written your company's environmental policy. How did you go about writing it and what did you need to consider in the language and style of the document? • Give an example of a document you have produced for the business which includes a complex number of inputs. How did you manage these inputs to ensure the content was relevant and current?
<p>Workplace training and development (K33, S23, B9)</p>	<ul style="list-style-type: none"> • What techniques have you used to coach others in their careers? • What CPD have you been involved in over the past year? How does the CPD you undertake benefit the business?

Written Knowledge Test - sample questions

A number of sample long response questions can be found below. It will be of benefit to the apprentice to practice answering this type of question before the EPA test. FDQ maintains a large bank of long-response items that are randomly selected to create individual tests.

Question 1

Good Manufacturing Practice (GMP) is an important part of operations in the dairy industry. Describe what is meant by GMP and illustrate your answer with 4 principles (5 marks).

Mark scheme

Answers should include a description and 4 of the following principles with explanations:

- GMP: a system that consists of processes, procedures and documentation that ensures manufacturing products are consistently produced and controlled according to set quality standards (1 mark).
- Principles include: documentation and record keeping (1 mark);
- design of facilities, maintenance (1 mark);
- competence of personnel, training (1 mark);
- cleanliness and control (1 mark);
- compliance and auditing against standards e.g BRCGS, TFMS, ISO Standards (1 mark);
- raw material control (1 mark);

1 mark for each of 4 principle with explanation of GMP. 5 marks total. Other relevant examples may be accepted.

Question 2

Explain the purpose of the revised food labelling regulations within the UK, known as Food Information Regulations 2014. Provide 1 example of how the revisions affected the dairy industry. (5 marks).

Mark Scheme

The legislation requires that product information on food labels should be easily visible and clearly legible (1 mark).

Information from consumers suggests that some people find labels difficult to use. To help industry improve the way in which information is presented on labels, clear food labelling guidance was developed to highlight some of the factors that affect label clarity (1 mark).

The aims are to assist industry with designing food labels for pre-packed foods in a clear way that allow consumers to access the information they need more easily, and to be aware of the relevant UK food labelling legislation for pre-packed foods (1 mark).

Additionally, nutrition information on pre-packed food was standardised in the legislation and became a mandatory requirement (1 mark).

One example of the impact on the dairy industry was the requirement to label allergens in bold on ingredients lists. (4 marks for explanation and 1 mark for appropriate example).

Question 3

A wide variety of dairy products are tested for fat content. Give five reasons with explanations of why this is essential. (5 marks).

Mark scheme

Fat is tested for reasons such as: price paid for milk to farmer; yield calculations; meeting product specifications; nutritional requirements to ensure meets packaging declarations; to meet legal specifications. (1 mark for each correct answer with explanation. 5 marks total).

Other relevant examples may be accepted.

Question 4

Review the use of centrifugal separation in the food and dairy industry (5 marks).

Mark scheme

Applications could include any of the following:

- Whey clarification separation of cheese fines from whey
- Bactofugation separation of bacteria from milk
- Quarg separation of quarg curd from whey
- Butter oil purification separation of serum phase from anhydrous milk fat
- Milk separation of cream from skim milk
- Milk standardisation adjusting the fat content
- Milk clarification removal of solid impurities from milk prior to pasteurization
- Whey separation of whey cream from whey.

(1 mark for each example and adequate explanation of use, up to a total of 5 marks).

Question 5

What are the main elements of the process for producing soured cream? (5 marks)

Mark scheme

Soured cream is produced by the fermentation of high pasteurised cream that contains 18-20% fat content (1 mark).

It is homogenised at a low temperature to promote the formation of homogenised clusters (1 mark). The starter cultures used are typically lactic acid starters such as lactis species, e.g. *Streptococcus lactis* (1 mark).

As the lactic acid is produced by the bacteria the clusters aggregate resulting in highly viscous cream, giving the characteristic sour flavour (1 mark).

Rennet can sometimes be added to increase firmness (1 mark).

1 mark for each process step and adequate explanation, up to a total of 5 marks.

Additional information and guidance

Additional information relating to the EPA and Dairy Technologist apprenticeship can be found in the following documents:

- Dairy Technologist standard and End-point Assessment Plan ST0393/V1.1, available from <https://www.instituteforapprenticeships.org/apprenticeship-standards/advanced-dairy-technologist/>
- Dairy Technologist Standard ST0393/V1.1 – Employer and Training Provider Guide to End-point Assessment, available from epa@fdq.org.uk

FDQ has produced a number of guidance documents and specimen assessments to support apprentices, training providers and employers. Please contact epa@fdq.org.uk for further details.

Record of revisions to this document

Version	Description of change	Date
3	Page 3 - Fitness for Purpose added	03/11/2023

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