

Spectacle Maker Apprenticeship Assessment Plan

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Section 1 – Overview

This document provides details of the End Point Assessment for the Spectacle Maker Apprenticeship. It provides guidance for employers, apprentices, training providers and assessment organisations.

The End point Assessment follows a period of typically two years of training and development and is arranged when the employer is satisfied that the apprentice is consistently working at or above the level described in the Spectacle Maker Apprenticeship Standard.

It is anticipated that the End Point Assessment is conducted over one day by an Independent Assessor.

Section 2 – Summary of Assessment

An Independent Assessor will conduct the End Point Assessment in the workplace or a centre arranged for assessment. The apprentice will be required to;

- Show knowledge of Health and Safety legislation relating to Spectacle Making and demonstrate the ability to work safely in a Spectacle making environment.
- Know the tools, equipment and materials required when making Spectacles, how to select and maintain the appropriate tool / item of equipment for each of the processes involved.
- Access, interpret and understand technical documentation required for Spectacle Making.
- Understand the procedures for assessing condition and diagnosing faults in Spectacles.
- Determine the level of intervention required, cost and how to seek approval for the work.
- Manufacture and repair Spectacles using hand tools and machinery.
- Understand and apply quality control procedures to ensure manufactured and repaired Spectacles meet the company's and industry requirements.

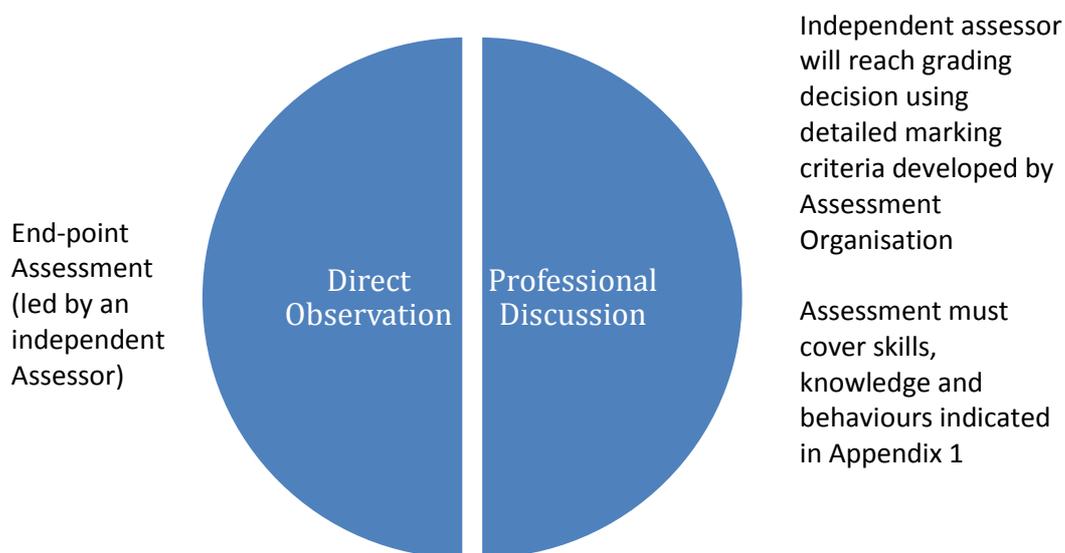
Gateway to End Point Assessment - The End Point Assessment should only commence once the employer is confident that the apprentice has developed all the knowledge, skills and behaviours defined in the Spectacle Maker apprenticeship standard. Once the employer is satisfied that the apprentice has achieved a standard sufficient for the Independent End Point Assessment, the Assessment Organisation will make arrangements for the End Point Assessment.

The information provided in relation to the end-point assessment is mandatory. The independent End Point Assessment ensures that all successful apprentices have achieved the industry set standard for a Spectacle Maker.

Prior to independent end assessment the apprentice must have achieved level 2 English and Maths.

Assessment Method	Area to be Assessed	Assessed by	Grading
Direct Observation	End point assessment - direct observation relating to the detailed knowledge, skills and behaviours, assessment criteria given in Appendices 1 & 2. <ul style="list-style-type: none"> ● Health & Safety and working environment ● Technical interpretation and understanding ● Manufacturing and repair processes ● Tools and equipment ● Quality 	Independent Assessor	Fail / Pass / Distinction
Professional Discussion	End point assessment - Professional discussion relating to the detailed knowledge, skills and behaviours, assessment criteria given in Appendices 1 & 2. <ul style="list-style-type: none"> ● Health & Safety ● Materials ● Tools ● Quality ● Construction of Spectacles ● The manufacture, service and repair of spectacles 	Independent Assessor	Fail / Pass / Distinction

Section 3 – End-Point Assessment



End-Point Assessment - refers to the final phase of the apprenticeship, in which the apprentice completes two assessed elements; Direct Observation and Professional Discussion.

The end-point assessment must cover the skills, knowledge and behaviours identified within Appendices 1&2. The following skills and knowledge have been deemed by employers to be critical to the occupation.

How will the skills, knowledge and behaviour be assessed:

Direct Observation & Professional Discussion

The direct observation and professional discussion provides the opportunity for substantial synoptic assessment across the standard and must include all areas of the standard to include real life manufacturing, maintenance, understanding of legislation and governance within the industry. To allow greater flexibility during the EPA, it is expected that both direct observation and professional discussion may utilise suitable technology where appropriate, this may include recording observations and professional discussions and will take into account the suitability of the environment in which the EPA is undertaken. The use of technology may include the use of video image recording, picture and voice recording to

assist with any reflective review to making grading decisions, this may also contribute to reducing the overall length and cost of the EPA.

Direct Observation

The direct observation will be a naturally occurring real work situation. In order to provide sufficient flexibility in the workplace and to allow for normal working patterns and interruptions that may occur, we would expect this process to take between 1-2 hours to allow the apprentice sufficient opportunity to demonstrate their knowledge, skills and behaviours. This will be pre-planned and scheduled at the apprentice's normal place of work and will be carried out by the Independent Assessor. The direct observation should enable the apprentice to demonstrate their skills, knowledge and behaviour from across the standard to demonstrate genuine and demanding work objectives. Each situation within the observation will be different, and the assessor will also ask questions alongside observation to look for additional understanding of the practical elements being assessed. If required, demonstration of a particular skill can be requested during this observation if it has not naturally occurred to ensure the apprentice can demonstrate the full breadth of skills necessary to pass the end-point assessment. The assessor will observe the following areas below, which form a set of higher level descriptors of the criteria from the Apprenticeship standard. These link back to the 25 criteria based in the assessment plan;

- Ordering and preparing the component parts for spectacles to be glazed
- Practical glazing ability with a variety of lens and frame types
- Quality control processes including different lens and frame types and different stages of manufacture
- Stock control processes and methods including auditing, ordering and movement of stock
- Maintenance of machinery and recording the information
- Ensuring health and safety within the workplace
- Interpersonal skills enabling the apprentice to demonstrate dealing with colleagues in a busy environment

Professional Discussion

The professional discussion will be a structured discussion between the apprentice and the Independent Assessor, following the observation, to establish the apprentice's understanding and application of knowledge, skills and behaviours. The professional discussion will take place on the same day in a suitable environment and should last for approximately 1-2 hours, which will provide flexibility in work environment and sufficient opportunity for the assessor to determine the level of grad. During the professional discussion, the apprentice will be able to call upon any on-programme evidence collected to support their comments.

The discussion will be set against the information detailed in Appendices 1&2, to ensure standardisation and consistency. It will be appropriately structured to draw out the best of the apprentice's energy, enthusiasm, competence and ability. The discussions where appropriate should include scenario and product based discussions to effectively challenge the apprentice and their ability to demonstrate their knowledge at the highest level.

End- point – Final Judgement and Independence

The final competence and grading decisions will be taken by a suitably qualified and experienced Independent Assessor. The assessor must hold or be working towards the TAQA / A1 qualification or equivalent and have at least two years occupational experience in the Optical lab environment. The assessor cannot have previously been involved in the 'on-programme' training of the apprentice, and with no other vested interest in the outcome of the assessment.

The Independent Assessor will be employed by an assessment organisation which is approved on the Register of Apprentice Assessment Organisations (RoAAO). These arrangements will ensure a clear separation between the training of the apprentice and the final assessment.

The Independent Assessor will make the final competency judgement using the detailed content criteria set out within Appendices 1 and 2. This outlines the skills, knowledge and behaviours within the standard and the grading differences between a pass and distinction. The same Independent Assessor conducts both the Observation and the Discussion for an apprentice in order to maintain consistency in applying a decision.

The following table utilises higher level descriptors of the criteria from the Apprenticeship standard, which links to the 39 discussion criteria within the assessment plan appendices 1&2. The end point assessment organisation should focus on these areas when building the content and structure for the professional discussion.

Health and safety in the work environment	Process and interpret spectacle orders	Calibrate and maintain Optical machinery	Quality control methods and verification of finished spectacles
The importance of record keeping	Materials used in Lenses and Spectacle frames	Assure uncut lenses and knowledge of Optical standards	Lens treatments
Optical and physical properties of multifocal lenses	Anatomy of the eye	refraction of light and the use of corrective lenses	Optical calculations
Stock control processes	Managing own development	maintaining knowledge of current optical technology	

End point assessment organisations should use Appendix 1 and 2 to support the development of EPA templates using the pass and distinction descriptors as a guide

End Point Assessment summary of roles and responsibilities

Assessor	Role
End Point Assessor	<ul style="list-style-type: none"> ● Liaises with the Assessment Organisation and the Employer to conduct the End Point Assessment ● Informs the Assessment Organisation of the outcome ● Attend regular standardisation events / meetings ● Assess all applicable criteria as set out in the EPA using the externally set grading criteria
Employer	<ul style="list-style-type: none"> ● On Programme Assessments throughout the apprenticeship ● The Spectacle Maker standard ● The detailed Assessment Criteria ● The Employer / Training Provider will initiate the End Point Assessment by contacting the Independent Assessment Organisation.
Training Provider	<ul style="list-style-type: none"> ● Supports the apprentice, and works in collaboration with their employer ● Supports and advises the employer on the timing for the EPA
Independent Assessment Organisation	<ul style="list-style-type: none"> ● Designs and provides the EPA ● Provide internal verification for consistency of assessment ● Appoints and trains Independent Assessors ● Ensures Independent assessors attend standardisation programmes ● Provides assessment materials for the End Point Assessment ● Operates appeals procedure in case of dispute

Quality Assurance – internal

Assessment Organisations must have in place a robust mechanism for internal quality assurance. This should include the ongoing monitoring and support of the independent assessment team, including regular standardisation meetings. Standardisation meetings should be undertaken annually to ensure the assessment system is consistent and reliable.

Internal quality assurance must be completed by an appropriately qualified person holding the V1 or equivalent qualification, and that person must not have been involved in any aspect of the delivery or assessment of the programme they are quality assuring. An Independent Assessment Organisations who wish to offer end point assessment against the standard will need to be on the Skills Funding Agency's Register of Apprentice Assessment Organisations (RoAAO). In addition assessment organisations would be expected to hold regular standardisation meeting at least bi-annually.

Sampling

The level of sampling will depend on the experience each assessor has. If an assessor has been qualified less than 12 months, 25% of the EPA criteria will be sampled for 100% of learners assessed and they will be observed conducting the EPA every 4 months. For assessors holding their qualification for more than 12 months, and have demonstrated consistent assessment process, they will have 10% of the EPA criteria sampled for 100% of learners assessed and they will be observed conducting the EPA every 6 months.

Quality Assurance - External

External quality assurance of the end point assessment for this standard will be provided by the Institute for Apprenticeships.

Section 4 - Assessment Grading

The end-point assessment of the Spectacle Maker Apprenticeship will be graded, with the available grades being Pass or Distinction. Apprentices must achieve at least a Pass in both methods of the end-point assessment in order to complete the Apprenticeship. To attain a Distinction grade, the apprentice must satisfy the EPA that they have achieved at least 64% (16 out of 25) of the Direct Observation criteria and 66% (26 out of 39) of the Professional Discussion criteria outlined in the Distinction section of each criteria area listed in the following Appendices.

The two end point assessment methods will contribute towards the overall grade decision of a Pass or Distinction.

Classification of Pass and Distinction grading

Pass	All pass criteria achieved	
Distinction	All pass criteria achieved plus :	
	Direct Observation	16 out of 25 meeting distinction criteria
	Professional Discussion	26 out of 39 meeting distinction criteria

Section 5 – Implementation

Demand for the Standard

Demand is expected to grow over the next 3 years. Early indications suggest that there will be 70 starts in year one, followed by a similar number joining the programme year on year.

Link to professional body recognition

Achievement of the standard meets the requirements for eligibility to be admitted as a Freeman of the Worshipful Company of Spectacle Makers

Costs of End Point Assessment

Following discussions with several providers including a mixture of FE colleges, private providers and awarding bodies, we estimate the cost of delivering the EPA to be in the region of 17% of the total cost of the apprenticeship.

Assessment methods key for Appendices 1 & 2.

Direct Observation	DO
Professional Discussion	PD

Appendix 1

Spectacle Maker - Skills

Skills	Assessed During	Learning Outcomes	Assessment Criteria	Pass	Distinction
Health & Safety and working environment	DO / PD	Be able to follow the Health and Safety regulations in an optical production workplace.	<ul style="list-style-type: none"> ● Show that they know the location of the essential health and safety regulations in the workplace. ● Show that they know the objectives of the Health and Safety at Work Act. ● Show that they know the requirements of the Control of Substances Hazardous to Health Regulations. ● Show that they know their company rules relating to health and safety. ● Describe the lines of communication regarding health and safety issues. 	Can demonstrate understanding of the needs of H&S at work, any company standards that apply, COSHH regulations and how this information is communicated in the business	Can describe the importance of following, and consequences of not following, H&S guidelines and company standards. Can explain the reasons for COSHH regulations, and describe the process for reporting incidents
	PD	Understand the importance of environmental protection.	<ul style="list-style-type: none"> ● Identify typical environmental hazards in an optical production unit ● Describe the environmental issues around waste disposal. ● Implement the procedures 	Can describe what environmental hazards are present in the lab (and store if applicable), and show the processes for different types of waste disposal	Describe specific products and processes in the lab (and store if applicable) that pose a hazard, what the implication of such hazards might be, and how to dispose of specific waste products and what the

			for waste disposal. ● Implement the disposal procedures for packaging.		processes are for disposal of packaging
	PD	Be able to respond appropriately to accidents and incidents in the workplace.	● Explain employees' responsibilities regarding health and safety at work. ● Respond to emergency situations at work. ● Use emergency response equipment. ● Explain the use of alarm systems.	Explain their own responsibilities to the H&S act, and what emergency response processes are in place	Can explain the H&S at work act in terms of employer / employee responsibilities, who is involved in incident reporting and the emergency / alarm procedures
Technical interpretation and understanding	PD	Be able to process orders and information accurately.	● Explain the significance of elements of a given spectacle order. ● Use order information to be able to process an order. ● Explain the technical terms used on optical orders. ● Identify errors on a given order. ● Correct errors on an order.	Demonstrate the ability to understand orders, process the data and discuss the technical terms used. Can identify and correct errors found	Discuss in detail the reasons for specific terms, how data can affect an order, how errors can cause further issues and elaborate on what they could be. Can accurately deal with error correction and the processes around it
	DO	Be able to answer technical questions from other staff and customers.	● Liaise with colleagues regarding technical queries. ● Communicate with customers regarding technical queries.	Can deal with basic technical enquiries and customer interaction	Can demonstrate effective technical resolution, and comfortably communicate with customers in a wide range of situations

	PD	Be able to interpret orders for spectacles.	<ul style="list-style-type: none"> ● Describe the content of prescription order forms for spectacles. ● Outline the different types of spectacle orders. ● Transpose ophthalmic prescriptions. ● Explain how the process of ordering relates to the overall manufacturing process. 	Can describe order document contents, various order types, transpose prescriptions and explain the links between order content and successful lens delivery	Can explain the interaction of various elements of an order document, the different ordering processes available, explain how we transpose, and understands and can explain the variations that can result from incorrect information on orders
Manufacturing and repair processes	DO / PD	Have a practical understanding of optical machinery.	<ul style="list-style-type: none"> ● Explain the principals of optical machinery. ● Explain the operation of optical machinery. ● Set-up optical machinery for a full range of products. 	Demonstrates ability and knowledge in how to start the glazing process with fundamental edger settings	Can understand and demonstrate why edgers are set up for different products and materials and can describe / demonstrate the outcomes of the settings used
	PD	Be able to calibrate precision optical manufacturing machinery.	<ul style="list-style-type: none"> ● Explain when to calibrate precision optical machinery. ● Calibrate precision optical machinery. ● Correct optical machinery with an error message or fault indication. 	Knows how and when to perform calibration processes and deal with edger errors / faults	Can explain the reasons for calibration, what the positive and negative effects can be, and the reasons behind errors and faults observed on edgers and cut lenses
	PD	Be able to demonstrate an understanding of the characteristics of lenses, their materials and their	<ul style="list-style-type: none"> ● Transpose to an alternate sph/cyl for a given prescription. ● Identify principal powers of 	Can perform basic transposition, lens power measurements, and visually identify lens products	Understands the reasons for transposition, what powers / meridians mean and how lenses of different types of

		alternative forms.	a given prescription. <ul style="list-style-type: none"> ● Identify different types of lenses by inspection. 		power differ from each other in appearance
	PD	Be able to source the full range of manufacturing parameters and adjustments that are technically possible.	<ul style="list-style-type: none"> ● Select the correct uncut based on an order. ● Explain the limitations of a given lens product based on prescription and measurements. ● Make recommendations if an uncut is not available for a given order. 	Can perform / source basic frame and lens measurements and decide on suitable / unsuitable lenses accordingly	Can demonstrate the interaction of prescription and frame measurements and the effect this can have on the finished item
	PD	Demonstrate the processes of stock control for optical product.	<ul style="list-style-type: none"> ● Deal with incoming and outgoing stock. ● Record the movement of stock. ● Monitor and maintain stock levels. ● Explain the benefits of good stock control. 	Can demonstrate general stock product management process, and discuss the benefits	can advise colleagues on stock process, and manage stock process independently
	PD	Understand the manufacturing and administrative journey of an order.	<ul style="list-style-type: none"> ● Describe the sequence of processes for manufacturing a given order. ● Describe the administrative processes for manufacturing a given order. ● Demonstrate the processes of stock control for optical products. 	Demonstrate knowledge of prescription lens glazing / manufacturing process, and the admin involved, including stock control	Can accurately describe how to manufacture different prescription lenses and glaze different frame types, what reports or administration is involved and what forms of stock control might be required

	DO	Be able to operate the processes of stock control for optical products.	<ul style="list-style-type: none"> ● Deal with incoming stock. ● Deal with outgoing stock. ● Record the movement of stock. ● Monitor stock levels. ● Operate stock replacement procedures. ● Check and monitor product expiry dates. 	Knows how to process new stock products through the lab, use records and systems correctly, and identify stock issues	Knows how to process new and existing orders for stock products in and out using the systems in place, audit and manage stock accurately and ensure the products are stored correctly
	DO	Understand and work within any restrictions placed on any design	<ul style="list-style-type: none"> ● Lay off lenses for glazing to a given specification. ● Prepare glazing machinery to edge lenses. ● Edge the lenses using glazing machinery. ● Hand edge the lenses to fit the spectacle frame. ● Set up finished spectacles ready for verification and dispatch. ● Inspect the finished spectacles ● Provide a report on the finished Spectacles. ● Lay off a pair of non-standard lenses for glazing. 	Prepare various lenses for glazing. Set up machinery for different types of lenses and frames. Cut and fit lenses. Hand edge lenses to fit. Set up frames for QC. Inspect and report on finished glasses. Set up and glaze a non-standard job.	Provide further commentary on more detail around these processes; why set up edgers in a particular way; when to hand edge, when not to; how to correct sizing issues on the edger; how to adjust various frame types / materials and what set-up is expected; detailed report on finished jobs, whether correct or if faults were found
	DO	Be able to glaze a variety of spectacle types	<ul style="list-style-type: none"> ● Lay off a variety of lenses for glazing to a given specification 	Can prepare a variety of lens and frame types for glazing	Can apply further special instructions / settings on equipment used

Tools and equipment	DO	Have a practical understanding of 'first line' maintenance for optical machinery.	<ul style="list-style-type: none"> ● Demonstrate completion of a maintenance schedule or services log. ● Complete 'first line' maintenance on optical machinery. ● Describe the consequences of not carrying out regular maintenance. 	Knows the basic needs of maintenance of equipment and the recording of data, and knows the benefits / disadvantages of this	Can maintain all lab equipment to a satisfactory level, record any resultant information logically and can identify the extended issues of poor maintenance
Quality	DO	Demonstrate an understanding of the importance of maintaining quality throughout the process of receiving orders and then manufacturing.	<ul style="list-style-type: none"> ● Carry out process for dealing with problems or errors in received orders. ● Carry out the process for dealing with problems or errors during and after manufacture. 	Can resolve basic errors and problems effectively	Can deal with more complex order errors and resolve issues accurately and with limited / no supervision
	DO	Understand quality control methods and the use of Standards.	<ul style="list-style-type: none"> ● Explain the importance of quality control. ● Demonstrate the procedure for quality inspection of a given uncut type before dispatch. ● Compare and contrast quality inspection procedures in given lens production methods. 	Understanding the basic principles of quality checking and can perform QC practically. Understand different production checks and describe how they use standards	Can explain the benefits of good QC process, and process more complex orders through quality checking, using standards accurately and describing how / why. Good knowledge of different elements of product quality checking

			<ul style="list-style-type: none"> ● Explain how and why Standards are used in quality inspection and control. 		
	DO	Demonstrate the management of quality processes and the application of the relevant optical quality standards.	<ul style="list-style-type: none"> ● Explain the quality processes in place. ● Identify tolerances for a given prescription order using current BS EN ISO standards. ● Implement procedures when a given prescription does not meet the required standards. ● Show how the management of quality has been applied. 	Functional understanding of QC process, essential tolerances and standards. Can identify and rectify errors found and manage the process of remaking an order	Detailed knowledge of QC process and the tools and standards used. Tolerance knowledge is good, with ability to use without prompts. Can identify, correct and advise on errors, faults or challenges with completing an order correctly, and manage the entire remake process
	PD	Understand quality control methods and the use of Standards.	<ul style="list-style-type: none"> ● Explain the importance of quality control ● Demonstrate the procedure for quality inspection of a given uncut type before dispatch ● Compare and contrast quality inspection procedures in given lens production methods ● Explain how and why Standards are used in quality inspection and control 	Understanding the basic principles of quality checking and can perform QC practically. Understand different production checks and describe how they use standards	Can explain the benefits of good QC process, and is able to process more complex orders through quality checking, using standards accurately and describing how / why. Good knowledge of different product quality checks and when / where they apply to the manufacturing process

	PD	Demonstrate the importance of record keeping.	<ul style="list-style-type: none"> ● Source reports and explain their relevance. ● Explain, interpret and evaluate report information. ● Explain the benefits of good record keeping. 	Knows where to access productivity data, can describe why and how we use it and the benefits of using data	Can access, describe and correlate various types of productivity data, and explain the benefits and challenges around this
	DO	Be able to implement the process for the dispatch of spectacle orders.	<ul style="list-style-type: none"> ● Undertake the final quality checks required before dispatch to the customer. ● Dispatch a range of finished orders. ● Use the types of documentation for dispatching orders. ● Discuss the relative costs of different shipping methods. 	Demonstrate the final checks and processes in place, how this is documented and processed for dispatch	Describe the reasons for quality checking, how this varies from start to finish, the various dispatch and documentation processes for different orders, and costs applicable to different types of order
	DO	Be able to pack spectacles	<ul style="list-style-type: none"> ● Undertake typical procedures for packaging. ● Explain why particular methods of packaging are used. 	Can describe the variations for different order types	Understands the reasons and routes for different order types and how/why they are packaged accordingly
	PD	Understand the labelling requirements for spectacles	<ul style="list-style-type: none"> ● Explain the labelling requirements of the Medical Devices Directive. ● Explain the importance of correct labelling. 	Can explain the MDD labelling and requirements	Is able to translate incorrect labelling into possible consequences for the customer

Spectacle Maker - Knowledge

Knowledge	Assessed During	Learning Outcomes	Assessment Criteria	Pass	Distinction
Health and Safety	PD	Know how to comply with relevant legislation and official guidance.	<ul style="list-style-type: none"> ● Exhibit knowledge and understanding of a range of employer and employee statutory rights and responsibilities under Employment Law: rights and responsibilities under the Employment Rights Act (1996), Equality Act (2010); health and safety legislation; responsibilities and duties of employers. ● Exhibit knowledge and understanding of the organisation's procedures and documentation which recognise and protect the relationship with the apprentice. ● Show knowledge and understanding of the range of sources of information and advice available on employment rights and responsibilities. ● Exhibit knowledge of the 	Demonstrate understanding of H&S principles, employee and employer rights and responsibilities. Can describe the company procedures and documentation related to the above, and how to source further details. Knows the types of organisations that represent the industry and their roles	Has a more detailed understanding of H&S, COSHH, equality and employment responsibilities and can describe their role in the company around these. Understands the company procedures for the above, in addition to statutory rules. Can source details and reference outside bodies, and can demonstrate understanding of the roles and activities of different organisations in the optical industry and other overseeing bodies

			types of representative bodies and understand their relevance within the optical industry and their main roles and responsibilities.		
	DO	Understand the importance of environmental protection.	<ul style="list-style-type: none"> ● Identify typical environmental hazards in an optical production unit. ● Describe the environmental issues around waste disposal. ● Implement the procedures for waste disposal. ● Implement the disposal procedures for packaging. 	Knows the potential hazards present in the lab working environment, how to deal with them and implement waste disposal according to product.	Knowledge of COSHH and the products under its regulations, the implications of poor hazard/risk analysis and waste disposal , and detail the potential environmental issues in both the lab and wider business
Materials	PD	Be able to identify lenses appropriate for given prescriptions.	<ul style="list-style-type: none"> ● Describe the properties of lens materials. ● Describe single vision, bifocal and progressive power lens types. 	Can provide details of lens materials, types, uses and some basic technical information	Can detail the challenges and benefits of various lens types and materials, and further detail on how multifocals work
	PD	Understand the materials used in spectacle frames.	<ul style="list-style-type: none"> ● Identify the materials used in spectacle frames ● Describe the properties of spectacle frame materials ● List the components of a spectacle frame by their BS EN terms. 	Can describe a number of common frame materials and list various parts correctly	Can provide details on the different frame materials used, how they differ in performance, and provide more detail on parts

Tools	PD	Understand how to check finished spectacle specifications against the received order.	<ul style="list-style-type: none"> List the equipment required for the final verification and quality check. Describe the use of the Focimeter for verifying lens power and prism. 	Can provide details of what is needed to carry out QC, and detail the functions used when checking prism and power	Knows all essential tools and equipment required and can confidently check power and prism with little / no supervision
	DO	Have a practical understanding of optical machinery.	<ul style="list-style-type: none"> Explain the principals of optical machinery. Explain the operation of optical machinery. Set-up optical machinery for a full range of products. 	Can detail the processes and systems required to effectively glaze a variety of lenses	Knows how to set up more complex lenses / frames to glaze, and can explain the operation of a number of optical equipment items
	DO	Be able to calibrate precision optical manufacturing machinery.	<ul style="list-style-type: none"> Explain when to calibrate precision optical machinery. Calibrate precision optical machinery. Correct optical machinery with an error message or fault indication. 	Know when to do a calibration and what is involved, correct errors on edger displays	Can plan for and carry out calibration, examine any data provided and determine the outcome, analyse error messages and know how to interpret the data
	DO	Have a practical understanding of 'first line' maintenance for optical machinery.	<ul style="list-style-type: none"> Demonstrate completion of a maintenance schedule or services log. Complete 'first line' maintenance on optical machinery. Describe the consequences of not carrying out regular maintenance. 	Can carry out basic optical equipment maintenance, record what is done and any outcomes. Describe the consequences of poor maintenance regime	Performs detailed first line maintenance, records data and can analyse its meaning and potential issues, and provide detailed description of the results of poor maintenance

Quality					
Quality	PD	Understand quality control methods and the use of Standards.	<ul style="list-style-type: none"> ● Explain the importance of quality control. ● Describe the procedure for quality inspection of a given uncut type before dispatch. ● Compare and contrast quality inspection procedures in given lens production methods. ● Explain how and why Standards are used in quality inspection and control. 	Understanding the basic principles of quality checking and can perform QC practically. Understand different production checks and describe how they use standards	Can explain the benefits of good QC process, and process more complex orders through quality checking, using standards accurately and describing how / why. Good knowledge of different product quality checks
	PD	Assure uncut spectacle lenses.	<ul style="list-style-type: none"> ● Identify the features of uncut lenses. ● Identify the types of surface and material defects. ● Explain the problems associated with types of surface and material defects. ● Assure uncut spectacle lenses to BS EN ISO standards. ● Complete the required quality documentation. 	Can describe the differences between lens types and identify surface defects and explain how they happen. Use tolerances for surface inspection and returns processes as applicable	Has detailed knowledge of lens types and different forms, identify various defects and explain how they can happen and be prevented. Can apply tolerances to surface inspection accurately and document findings in the required detail
	DO	Be able to visually inspect lenses.	<ul style="list-style-type: none"> ● Identify defects and faults in lens uncuts. 	Can spot faults in cut and uncut lenses, check shapes	Can provide reasons for faults and errors found and

			<ul style="list-style-type: none"> ● Identify defects and faults in edged lenses. ● Ensure the symmetry of lens shapes. ● Judge the cosmetic appearance of the spectacles. ● Use BS EN ISO standards to aid visual inspection of uncut and edged lenses. 	are symmetrical and assess cosmetic appearance to company and industry standards	how to correct them, knows how to adjust symmetry issues before and/or after cutting, and can accurately use company and industry standards to assess quality
	DO	Be able to assure assembled Spectacles.	<ul style="list-style-type: none"> ● Explain the properties of lens and frame materials with regard to handling and cleaning. ● Ensure that the prescription specifications match the order specification. ● Verify that the form and positioning of the lenses match the order specification. ● Verify that all the specifications match the order specification. ● Use BS EN ISO standards to aid the verification of finished spectacles. ● Take appropriate action if the spectacles do not match the order specification. 	Knows how to deal with a variety of frame materials and can check the finished job against the order for the right parameters at QC. Can correctly check against standards and take the correct action if incorrect. Use of manual and automatic Focimeter types	Can explain the differences between various frame materials, how they are handled and cleaned and set-up adjustments. Accurately check orders and explain how/why certain actions are performed. Good knowledge of standards and tolerances, and taking corrective action if errors found. Use of manual and automatic Focimeter types

			<ul style="list-style-type: none"> ● Demonstrate the use of two Focimeter types that use different principles to measure lens power. 		
	PD	Demonstrate the importance of record keeping.	<ul style="list-style-type: none"> ● Source reports and explain their relevance. ● Explain, interpret and evaluate report information. ● Explain the benefits of good record keeping. 	Can access essential reports and records, explain the data and reasons for keeping it	Can access report data, show analysis of the information, the benefits for keeping it and how it fits with other store data recording
Construction of spectacles	PD	Understand the processes for the range of lens treatments for spectacle lenses.	<ul style="list-style-type: none"> ● Discuss the types of lens treatments. ● Explain the purpose of tinting. ● Explain the purpose of antireflection coatings. ● Explain the purpose of hydrophobic coatings. ● Outline the processes of lens tinting and coatings. ● Explain the purpose of toughening lens materials ● Explain lens toughening processes ● Select suitable types of lens materials for specified lens treatments 	Knows the fundamental elements of why/how we apply lens treatments, and select the correct lens options accordingly	Has a broad technical understanding of the various treatments, their application process and purpose, and how to select the right lens types/materials

	DO/PD	Ensure that frame components prior to glazing meet the required specifications	<ul style="list-style-type: none"> ● Identify modern frame materials. ● Describe the properties of modern frame materials. ● State the BS EN ISO terms for frame components. ● Demonstrate the measurement of spectacle frames. ● Demonstrate the adjustment of spectacle frames to the order specification. 	Can describe a number of common frame materials and list various parts correctly	Can provide details on the different frame materials used, how they differ in performance, and provide more detail on parts
	PD	Know the optical and physical properties of multifocal lenses.	<ul style="list-style-type: none"> ● Explain the terms relating to multifocal lenses. ● Describe multifocal lens designs. ● Compare and contrast the manufacturing processes of multifocals. ● Compare and contrast the optical and physical performance of multifocal lenses. ● Calculate prismatic effects in the reading portion of bifocals and trifocals. ● Describe prism controlled bifocals, using calculations and illustrations where 	Understand the design and use of multifocals, how they differ and how they are manufactured. Work out the prism in reading area and can describe prism control bifocals	Can identify different multifocal types and describe how they differ both in identity and performance, and with more technical elements included (curvature, addition, inset, etc.). understand the prismatic effect in reading area and discuss the prism control bifocal in detail

			appropriate.		
	PD	Understand the anatomical structure of the eye	<ul style="list-style-type: none"> Identify the anatomical structures of the eye. Describe the functions of the non-refracting elements of the eye. 	Can identify and describe the basic anatomical structures	Can detail how certain anatomical structures work in conjunction to each other
	PD	Understand the effect of a lens on light and how it relates to the correction of refractive error	<ul style="list-style-type: none"> Describe the effect of a positive lens on incident light. Describe the effect of a negative lens on incident light. Describe the refracting elements of the eye. Explain the causes of refractive errors in the eye. Explain the classification of refractive errors in the eye. Explain how spectacle lens power relates to refractive error. Explain how a spectacle lens corrects a refractive error. 	Knows the basic function of eye structures and how to correct refractive errors. Use correct terms for errors and describe lens types to use	Can illustrate knowledge on refractive errors, how to correct, what the impact is on vision, before and after correction, and the correlation of prescription and refractive error
	PD	Know the range of spectacle lens types for vision correction	<ul style="list-style-type: none"> Identify modern single vision lens types. Identify modern multifocal lens types. Explain the physical properties of specified lens 	Can describe various lens types, their properties and optical uses	Can describe various lens types, how they are used, the material seen, the variations in technical information on a given lens (abbe no., index, thickness,

			<p>types.</p> <ul style="list-style-type: none"> ● Explain the optical properties of specified lens types 		etc.), benefits over other products
	PD	The historical and contemporary context of Spectacle making.	<ul style="list-style-type: none"> ● Determine the wider context of Spectacle making in terms of historical origins and its current technical development. ● identify the importance of continually updating knowledge about the wider context of Spectacle making. 	Can describe the basic parts of Spectacle Makers history and modern day context, and can describe the importance of maintaining industry knowledge	Has more detailed understanding of Spectacle Makers history and involvement in wider optical bodies, its current format and how their industry knowledge could influence their career
The manufacture , service and repair of spectacles	PD	Be able to perform arithmetical calculations for optical manufacturing.	<ul style="list-style-type: none"> ● Perform arithmetical operations using mathematical priorities. ● Perform calculations involving reciprocals. ● Perform calculations involving squares and square roots. 	Correctly complete the set questions provided; arithmetic calculations, use of BODMAS, etc.	Describe reasons why/how these calculations would be used in practical optics
	PD	Be able to apply the properties of circles and right-angled triangles to optical manufacturing.	<ul style="list-style-type: none"> ● Describe the properties of a circle using appropriate terminology. ● Relate the properties of a circle to applications in optical manufacturing. ● Explain the properties of a 	Label parts of a circle and discuss where these apply in optical manufacturing. Use of SIN, COS, TAN in calculating right angled triangle parameters and how these relate to optics	Provide further detail on how the circle and right angled triangle definitions fit into optical manufacturing and where they might be used

		<p>right-angled triangle.</p> <ul style="list-style-type: none"> ● Explain what is meant by sine, cosine and tangent. ● Calculate the parameters of a right angled triangle. ● Relate the properties of right-angled triangles to optical manufacturing. 		
PD	Understand how values for lens properties are obtained using fundamental lens formulae.	<ul style="list-style-type: none"> ● Identify the standard symbols for fundamental lens parameters. ● Ascribe a value to fundamental formulae in optical manufacturing. 	Correctly complete the set questions provided; lens power, focal length, radius of surface, etc.	Show full working out, and describe reasons why/how these calculations would be used in practical optics
PD	Be able to use graphs.	<ul style="list-style-type: none"> ● Draw a line graph from a table of data. ● Extract graphical data. ● Interpret graphical data. ● Give examples of graphs used within optical manufacturing. 	Can accurately produce graphical info from data and work back from graphs too. Provide examples of where this is used in their role	Can interpret graphical data in both directions, analyse its importance / relevance and state when / where graphs and data analysis would be used
DO	Demonstrate the management of quality processes and the application of the relevant quality standards.	<ul style="list-style-type: none"> ● Show how the management of quality has been applied. ● Explain the quality processes in place. ● Identify tolerances for a given prescription order using current BS EN ISO standards. ● Implement procedures 	Understands how quality management has an impact on the lab performance and knows the internal structure. Can identify tolerances as required and knows how to process an order that does not comply	Can describe the consequences of poor quality management, describe the process in place and how it fits with other store data, use tolerances and standards accurately and detail the processes for dealing with errors found

			when a given prescription does not meet the required standards.		
PD	Demonstrate the importance of record keeping.	<ul style="list-style-type: none"> ● Source reports and explain their relevance. ● Explain, interpret and evaluate report information. ● Explain the benefits of good record keeping. 	Can access essential reports and records, explain the data and reasons for keeping it	Can access report data, show analysis of the information, the benefits for keeping it and how it fits with other store data recording	
PD	Understand the principles of stock control.	<ul style="list-style-type: none"> ● Explain the need for keeping stock. ● Accurately record stock control data. ● List the advantages of good stock control. ● List the disadvantages of poor stock control. 	Explains the stock control process, data tracking involved and advantages of good/disadvantages of bad stock control	Can provide evidence of jobs affected by good and bad stock control and records of the results	
DO	Be able to operate the processes of stock control for optical products.	<ul style="list-style-type: none"> ● Deal with incoming stock. ● Deal with outgoing stock. ● Record the movement of stock. ● Monitor stock levels. ● Operate stock replacement procedures. ● Check and monitor product expiry dates. 	Knows how to process new stock products through the lab, use records and systems correctly, and identify stock holding issues	Knows how to process stock in and out using the systems in place, audit and manage stock accurately and ensure the products are stored correctly	
PD	Understand the audit process in stock control.	<ul style="list-style-type: none"> ● Describe how materials are audited within the stock system. ● Explain the importance of 	Can perform audits as required and describe the benefits of stock audit	Knows the benefits and challenges of auditing stock products and accurately detail the process	

			the audit of stock.		
	DO	Be able to answer technical questions from other staff and customers.	<ul style="list-style-type: none"> • Liaise with colleagues regarding technical queries. 	Can discuss technical queries with colleagues to a successful conclusion	Can describe the details around why the order has a technical question, and how to resolve it

Appendix 2: Assessment of Behaviours

Behaviours	Assessed During	Learning Outcomes - The Apprentice will;	Assessment Criteria - The Apprentice can;	Pass	Distinction
Quality focused	PD	Follow policies and procedures, have a strong attention to detail and apply quality assurance checks through the spectacle repair or manufacturing process.	<ul style="list-style-type: none"> break down complex tasks into stages allocate time and resources to work efficiently adapt to changing situations maintain a tidy working environment and replaces equipment after use	Demonstrate the ability to manage own workload, identify individual stages in manufacturing and change work role as required by day-to-day operational needs	Can manage own workload without supervision and assist in varied tasks / multi-tasking as required. Describe the 'job journey' through the lab process. Ensure that quality and environmental standards are maintained
Professionalism	DO	Have a strong professional work ethic including pride in their work and attention to detail. Plan and manage time effectively.	<ul style="list-style-type: none"> initiate conversation use questions confidently and appropriately exhibit appropriate body language and attitude when dealing with colleagues 	Can discuss appropriate and work-based content effectively and considerately with others, maintaining an appropriate attitude to work, whilst maintaining focus on the job and tasks as required	Understands the needs of others in the work environment, and can react positively to work requests as required. Has a positive approach to work requests and can demonstrate an empathic approach to others

			approach colleagues with respect		
Self-development	PD	Plan and manage continued professional development.	<ul style="list-style-type: none"> ● Identify current experience, skills, knowledge and understanding through the 121 process. ● Identify the benefits of continuous personal development. ● Identify the importance of reviewing training and development objectives. ● Determine the organisational procedure for supporting training and development issues. ● Evidence regular contact with other individuals within the optical industry. 	Understands the importance of continuing development, can highlight individual elements and how the business is supporting them. Can provide evidence of colleague interaction and adaptation of work-based skills to adjust to their role	Knows the importance of personal development, both to self and the business. Can provide evidence of 121, review and colleague-supported development. Knows the opportunities for support in the business and can evidence any external contact and skill changes / improvements through development
	PD	Keep up to date with best practice and emerging technologies within the optical sector. Obtain and offer constructive feedback to others, and develop and maintain	<ul style="list-style-type: none"> ● demonstrate a passion for Spectacle Making ● maintain an awareness of new materials in the market ● Show an understanding of historical and contemporary context of Spectacle making 	Shows the right approach to the role and the continual need to develop technical skills and knowledge. Can demonstrate understanding of the history of spectacle making	Has a positive approach to all work tasks and willingly takes on extra responsibility as relevant to their ability. Keeps up with new products and services in the industry and appreciates both the history and contemporary involvement of spectacle

		professional relationships.			making
	PD	Self-evaluate and obtain feedback from others to inform work and work practice.	<ul style="list-style-type: none"> ● Confirm what objectives have been agreed with the employer and in conjunction with colleagues. ● Identify what has been achieved against objectives. ● Determine feedback from employer and colleagues to ensure personal work is of highest quality and to help inform development of personal professional practice. ● Describe methods for keeping records of feedback. 	Evidence of objectives, achievements, and feedback on development with clear records	Can evidence and personally report on development objectives and what level of achievement has been reached. Feedback is clear and actioned, records are precise and clear
Safety orientated	DO	Be aware of and adopt the processes and procedures for the safe manufacturing or repair of spectacles for both self and others.	<ul style="list-style-type: none"> ● identify with the appropriate disposal of waste and hazardous materials and fluids ● understand the importance of PPE (Personal Protective Equipment) ● routinely work safely in the optical lab environment 	Understands the importance of COSHH and PPE, can describe use of both, and demonstrate it in their workplace	Can describe the individual and corporate needs of COSHH and PPE in their workplace in detail and how/when it is applied, and assist in non-lab staff being made aware.

