

Curriculum Framework for Pre-registration Orthoptic Education and Training

September 2023



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Summary of changes

Key changes from 2016 include:

- Additional content from updated HCPC SOPs covering:
 - a. Equality, Diversity and Inclusion (EDI).

 The curriculum framework now better represents the breadth of impact of EDI on education and practice as an Orthoptist.
 - b. Public health. Additional topics related to the broader and more detailed scope set by HCPC.
 - c. Further centralising the service user. Emphasis on the central role of the service user with expansion of the framework to recognise these changes.
 - d. Registrants' mental health. Additions to the framework to highlight the importance of Orthoptists looking after their own mental health.
 - e. Digital skills and new technologies. Additions to the framework to make clear the need to have and maintain digital literacy.
 - f. Leadership. The framework now has representation for leadership in training.
- 2. Minor removal of content around operating a microscope, which was deemed outside the scope of an Orthoptists' practice.
- 3. Addition of content covering:
 - a. Sustainability
 - b. EDI explicit reference to equality, diversity and inclusivity at all stages of preregistration Orthoptic training.
 - c. Quality assurance. Both HCPC SOPs and service user input highlighted the importance of preparing Orthoptists to quality assure their practice.
 - d. Personal health and wellbeing.
- 4. Pared back discussions around advanced/ extended roles and career pathways so that these can be covered in detail in other future publications.



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Foreword

The British and Irish Orthoptic Society (BIOS) is delighted to partner with the National Health Service England (NHSE) to produce a revised core curriculum framework for pre-registration Orthoptic programmes.

Our graduate workforce across the UK and the Republic of Ireland has a varied, wide ranging knowledge base and skill set across core Orthoptic competencies. The fundamental purpose of this framework is to identify the scope of learning that aligns HCPC Standards of Proficiency and the four pillars of practice, preparing pre-registration Orthoptists for clinical practice. This important update gives Orthoptic managers and Higher Education Institutions (HEIs) clear guidance about the level and scope of graduate knowledge, skills and behaviours. Learners trained according to this framework will produce Orthoptists with a strong foundation in core Orthoptic competencies that continues to reflect service needs. It will prepare them for the pace of change both within the profession and the wider eye care workforce, as well as provide a basis for development of enhanced clinical practice curricula.

We would like to thank everyone who has supported and contributed to the development of this curriculum review and ultimately the growth and progression of our Orthoptic workforce.

Veronica Greenwood and Craig MurrayBIOS Chair and Chair Designate



About BIOS

The British and Irish Orthoptics Society (BIOS) is the professional body for Orthoptists in Britain and Ireland. BIOS was founded in 1937 and is a registered charity governed by a Board of Trustees.

Members of BIOS are mostly Orthoptists, with Associate Membership for assistants and technicians. Membership confers liability insurance and other benefits include professional support, opportunities for continuing professional development (CPD), resources and updates.

The BIOS Strategic Plan for 2023-2028 covers multiple areas such as raising the profile of the profession, developing the profession, preregistration Orthoptic training, quality assurance of training and practice, research, leadership and innovation.

Read the full strategy here:

https://www.orthoptics.org.uk/wp-content/uploads/2023/06/BIOS-Strategy-2023-2028_FINAL.pdf

BIOS thus takes an active role in the education and professional development of Orthoptists, with activities co-ordinated through the Education and Professional Development Committee (EPDC). Activities include oversight of the production and maintenance of the Orthoptic pre-registration curriculum framework, accreditation of practice-based learning sites, leadership in collaborative externally-funded education projects and horizon scanning for professional development opportunities.



Acknowledgements

The 2023 Curriculum Framework for Preregistration Orthoptic Education and Training is an update to the original 2016 version, and draws heavily on the concepts and ideas expressed there, including work undertaken to elicit views from Orthoptists via a national survey. We would like to thank again the >300 respondents, and Prof Anna Horwood for her work in developing the first curriculum framework.

BIOS wishes to thank all key stakeholders involved in the development of the 2023 Framework. The project was overseen by the following authors and contributors:

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Funding

We would like to thank Health Education England (HEE) for funding the development of the 2023 BIOS Curriculum Framework for Pre-registration Orthoptic Education and Training.

Executive Summary

Scope

The BIOS curriculum framework for pre-registration Orthoptic education and training is a reference document that expands on Health and Care Professions Council (HCPC) Standards of Proficiency (SOPs) for Orthoptists. It is designed primarily for Higher Education Institutions (HEIs) to be able to develop new programmes and ensure that the curricula for existing programmes are appropriately mapped to latest developments. It is also a useful reference document for any who wish to understand the minimum standard of breadth and depth of knowledge, skills and behaviours covered in pre-registration Orthoptic education and training. This includes, but is not limited to, those involved in Orthoptic education (e.g. practice-based learning partners) and service users.

The curriculum framework described here is a minor update to the 2016 BIOS Orthoptics Curriculum Framework and brings updates from practice and HCPC SOPs over the last 7 years. We have been deliberate in use of the same terms used in the 2016 version to ensure 'scores' match – thus carrying over the views of the >300 Orthoptists who contributed to the original framework.

The framework has now been aligned to Advanced Practice 'pillars' – around clinical practice, education, research, and leadership and management. This will allow newly-qualified Orthoptists to see where their knowledge and skills sit, and plan more effectively in shaping their careers.

There are future plans to develop an Orthoptic Career Framework, and this curriculum should thus reflect the common ground before proliferation into specialist/wider/adjunct/leadership roles.

Disclaimer

This framework is intended to support and guide the content for pre-registration Orthoptic programmes. It is not intended to be prescriptive of content within individual pre-registration programmes.

It is anticipated that this framework will be reviewed by BIOS every 5 years from publication date.

Conflicts of interest

The authors declare no relevant conflicts of interest.

Publication

This document has received final approval for publication from BIOS EPDC.

Orthoptics in the UK

Orthoptists are Allied Health Professionals (AHPs) regulated by the Health and Care Professions Council (HCPC). Orthoptists are autonomous clinicians who have highly specialist knowledge and skills in the investigation, diagnosis and management of developmental vision and eye movement disorders.

Pre-registration training in Orthoptics in the UK is currently provided via HCPC-approved undergraduate and postgraduate programmes across 4 Higher Education Institutions (HEIs); University College London (UCL), Glasgow Caledonian University (GCU) and the Universities of Sheffield (UoS) and Liverpool (UoL). Currently, no other routes exist in the UK to enter the profession though apprenticeship pathways may soon be developed.

On qualifying, Orthoptists are fully autonomous healthcare professionals though commonly work as part of a multidisciplinary team in a hospital eye care setting. Many Trusts offer a 'preceptorship', which allows new-graduate Orthoptists access to a standardised set of support structures in a workplace setting. Preceptorship is strongly advocated by BIOS.

Given their working environment, Orthoptists also need to understand common medical terms in general hospital notes and letters, understand the implications of general medical interventions and be aware of the many medical signs and symptoms that might signal atypical development or affect eyesight. Newly-qualified Orthoptists are expected to be able to independently investigate, diagnose and manage conditions within the scope of an Orthoptist's practice, though may require support/advice for complex cases. As such, it is necessary for recent graduates to be able to recognise where they need support/guidance.

Career progression is varied, and can entail highly specialised practice, education, research, enhanced and advanced practice, and leadership and management. Current pathways are largely driven by the individual Orthoptist, but there is an expectation that common pathways will be better de ned in coming years. These include Enhanced Practice (EP) and Advanced Practice (AP), education¹ and research.

This framework describes the fundamental knowledge, skills and behaviours that preregistration Orthoptic training programmes will cover from September 2023.

Role of HCPC

The Health and Care Professions Council (HCPC) are the regulatory body for Orthoptists in the United Kingdom, covering standards for education and training, registration of members and maintenance of fitness to practise.

Higher Education Institutions wishing to deliver pre-registration Orthoptic training must have their programme approved by HCPC. Accreditation is then maintained by Institute-wide reaccreditation through a cyclical process of reflection and evidence of development over time (by completing a performance review portfolio) in line with regulatory/professional body changes. HCPC also refer to high-level data about student satisfaction and quality assurance (UK Quality Code for Higher Education – QAA²).

HCPC defines its standards using 2 core standards – generic Standards of Education and Training (SETs)³ and profession-specific Standards of Proficiency (SOPs)⁴. SETs cover key topic areas across admissions, programme governance, management and leadership, design and delivery, practice-based education and assessment. SOPs include broad expectations for a clinicians' abilities as well as subject-specific knowledge/skills.

On completion of a pre-registration Orthoptic programme, graduands apply for registration with HCPC to become Orthoptists and registration and the title is conferred once an HEI completes their formal QA and confirms their 'pass-list' to HCPC. As a regulated profession, Orthoptists are then expected to maintain fitness to practise and continue to develop in line with evolving knowledge/ practice.

Equality, Diversity and Inclusion

Higher Education Institutions and registered Orthoptists are expected to meet minimum standards around equality, diversity and inclusion. This document thus reflects expectations for HEIs and practice-based education sites as well as covering EDI education and training within the curriculum framework – i.e. behaviours that Orthoptists should demonstrate on graduating.

Learners at HEIs should expect to learn in a supportive and inclusive space based on mutual respect. Once qualified, as Orthoptists, those behaviours should translate into the workplace.

Structure of Training

Admissions

Overarching principles for admissions to preregistration Orthoptic programmes are directed by HCPC (SETs 2.1-2.7). Each HEI then has freedom to operate their admissions processes in line with these principles and variations exist both by institute and by undergraduate/postgraduate entry route.

Best practice involves active awareness and implementation of EDI processes and widening participation.

Staffing

Each programme must adhere to HCPC SET 3 around governance, management, leadership and staffing with those who have relevant expertise. Training Orthoptists requires education from those with esoteric, specialist knowledge/skills and thus predominantly occurs from Orthoptists who specialise in clinical education. HCPC also requires HEIs to demonstrate interprofessional education – how learners learn with and from professionals and learners from other relevant professions.

Quality Assurance

Each HEI has their own quality assurance (QA) processes and reports both local and national QA outcomes to retain HCPC accreditation.

Education and training

Theoretical knowledge

Pre-registration Orthoptic training programmes deliver education through a range of approaches and activities, including but not limited to, lectures (either face-to-face or online (synchronous or asynchronous)), flipped classrooms, tutorials and workshops. Chosen approaches should be accessible and inclusive to prepare graduates to be competent to work to a high level of skill in a specialist field upon qualification.

Practice-Based Education

Training Orthoptists relies on practice-based education. Learners are commonly taught practical skills during 'clinical skills labs' and embed their learning during clinical placements.

Practice-based learning providers are approved/ accredited by BIOS to host placements – meeting standards set by HCPC around quality-assuring practice-based education.

HEIs collaborate through a 'National Equitable Allocation Scheme' to ensure that students across all programmes are able to attend their allocated placements. Learners should expect student support plans/adaptations/adjustments relevant to their learning to be met whilst on placement. There are no mandated minimum or maximum number of placement hours that must be accrued over the duration of training, but HCPC states that practice-based learning must be a 'central part' of a preregistration programme. Learners are provided with feedback to help improve competency over time.

Practice-based education also offers opportunities for learners to experience a range of practice. Our service user input highlighted the value of these opportunities during training, and the design of practice-based education should ensure holistic and equitable training opportunities for each learner. Recent digital innovations in practice-based education (such as the BIOS Placement Expansion Resource Library (PERL)) will help embed simulated learning into pre-registration programmes.

Assessment

Overarching principles for assessment are directed by HCPC SET 6, and allow for alignment with an individual HEIs general principles around assessment, progression and resits/repeats. All pre-registration programmes are required to demonstrate that their assessment portfolio allows for learners to demonstrate that they meet HCPC SOPs.

Each HEI has mechanisms to support students with additional needs, and they are expected to follow local procedures to support learners with reasonable adjustments to assessments.

Recent advances in Artificial Intelligence (Al) have impacted the delivery of assessments and thus HEIs are now required to demonstrate how their assessment portfolio is robust to manipulation by Al, and that academic integrity is maintained.

Exit Awards

HEIs can offer exit awards for students who do not meet criteria for progression between years of study or for the final award. As Orthoptics/ Orthoptist is a protected title, exit awards do not include the word 'Orthoptics' and vary by institution.



Core Curriculum Framework

The following framework describes a core curriculum that HEIs should cover in their preregistration Orthoptic programmes. The framework is split into 4 domains – clinical practice, education, research, and leadership and management.

The infographic below (page 12) shows these domains, further subdivided into sub-domains. A detailed breakdown is then shown in tables for each sub-domain. These tables highlight not only the topic/area of knowledge/skill/behaviour that is covered, but also the depth of understanding

required by Orthoptists. These 'levels' (Table 1) have largely been carried over from the original framework, and re-levelling/amendments have been described in the Summary of Changes (pg. 2).

For non-statutory topics, HEIs may choose to place more or less emphasis on a topic, providing that a minimal level 1 is achieved.

Where possible, each topic has been mapped to HCPC SOPs to demonstrate that at a minimum, the core curriculum allows registrants to meet all proficiencies.



Table 1. Levels of direct relevance to Orthoptic practice

Level	Area and depth of knowledge/ skill/behaviour
1	Outline knowledge of basic principles only.
2	Have observed or have some theoretical knowledge but limited practical skills; know warning signs of abnormalities; understand terms in letters and reports.
3	Core competence for autonomous practice in a straightforward situation; recognise limits of personal competence; support needed for more complex examples. A minimal level 3 is given to all statutory topics.
4	Specialist knowledge; a specific orthoptic skill where other professionals might ask the Orthoptist's advice; autonomous practice expected.

Medicines Exemptions

From 1st September 2023, all new registrants at the point of registration will be required to meet all of the updated HCPC SOPs. The preregistration Orthoptic curriculum framework here thus describes the sale, supply and administration of Prescription-Only Medicines (POMs) within the scope of medicines exemptions for Orthoptists as part of the core curriculum.

HCPC does not set or limit the scope of practice for current registrants and thus some registrants will have a scope of practice that encompasses only a subset of the proficiencies covered in the SOPs – in particular, those related to medicines. In such cases, these registrants will only be expected to meet the standards of proficiency that are relevant to their specific scope.

Thus, for registrants whose scope of practice does not involve the sale, supply or administration of Prescription-Only Medicines (POMs), the updated SOPs will not necessitate the adoption of these proficiencies, or the cessation of their practice.

International Orthoptists who come to the UK to practice Orthoptics are required to register with HCPC as new registrants. They are thus considered against the standards in the same way as a new

graduate and are expected to demonstrate proficiency in the sale, supply and administration of POMs. If international applicants have not acquired these skills during their previous training/practice, they may need to undertake further training to develop these proficiencies before registration with HCPC.

Data collection methods

A national survey of Orthoptists was conducted in 2016. The survey elicited opinions from Orthoptists about the full range of topics covered in Orthoptic practice. Views from over 300 respondents were synthesised into the original curriculum, and each outcome has been reviewed as part of this update.

Contributor input/impact

The previous version of the curriculum was reviewed by EPDC, the Royal College of Ophthalmologists and College of Optometrists. On commissioning this update, EPDC requested that the original terms in the framework were maintained so that the original elicited opinions/ reviews could be retained. After an updated review of comparable frameworks from other professions, we transformed the framework to cover 4 common domains, but retained terms.

At the start of the curriculum review and update process, we also elicited views of representatives from wider groups to feed into the update. We received contributions that focused on EDI, views from service users and new graduate representation. Contributors are listed in the acknowledgements. They were asked to produce reports about training Orthoptists that broached their views about important topics to be covered, and a review of whether topics should be added/ removed. Contributors reviewed the revised HCPC SOPs (valid from 01st September 2023), the 2016 Curriculum Framework and 'Advance HE: Embedding Equality, Diversity and Inclusion in the curriculum'. Outcomes from their respective reports were synthesised, and changes were made based on their views/recommendations and are summarised in the Summary of Changes (pg. 2).

Framework domains: Clinical Practice

Statutory obligations

HCPC mapping	Topic	Item	Level
1, 1.1, 1.2,	Dalamad Clay to	Statutory role and powers	3
1.3, 2, 2.1, 2.2, 2.4, 2.5,	Role and Statutory Obligations of the HCPC	Personal professional obligations, Standards of Proficiency and codes of conduct.	4
2.9, 2.10	TICI C	Role and obligations for CPD and use of reflective practice.	4

Employment

HCPC mapping	Topic	ltem	Level
12.4	Professional practice	NHS Structure.	2
12.4		Professional indemnity and insurance.	2
2.9, 2.10	Orthoptic profession	Orthoptic career structure and progression.	2
		Scope of orthoptics across the UK	3
		Scope of orthoptics abroad.	2
2.9, 2.10,	Roles and	Role of Professional Bodies e.g. BIOS, RCOphth, College of Optometrists, RCN.	2
12.3	responsibilities	Roles of professions with which orthoptists work.	3

Communication

HCPC mapping	Topic	ltem	Level
		Communicate in English.*	3
		Verbal and non-verbal communication skills with adults.	4
		Verbal and non-verbal communication skills with infants.	4
		Verbal and non-verbal communication skills with pre-school children.	4
5.4, 6.4, 7, 7.1, 7.2,	Advanced	Verbal and non-verbal communication skills with school-age children.	4
7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9 interpersonal communication skills	interpersonal	Verbal and non-verbal communication skills with adolescents.	4
		Verbal and non-verbal communication skills with parents/carers/guardians.	4
	Communicate with service users for whom English is not their first language.	3	
		Communicate with service users with hearing or other communication difficulties.	3
		Communicate with service users with cognitive impairments e.g. autism, dementia.	3
9	Written communication	Written communication and professional letters/reports.	3

^{*}HCPC requires registrants to demonstrate English Language Proficiency to a minimum level 7 on the International English Language Testing System (IELTS), with no element below 6.5.

Professionalism

HCPC mapping	Topic	ltem	Level
6, 6.1, 6.2, 6.3, 6.4, 6.5	Confidentiality	Confidentiality.	4
6.1, 6.2	Information governance	Data protection.	4
		Respect and duty of care.	4
2.2, 2.5, 2.6, 4, 4.1,	Respect and duty of	Ability to deliver patient-centred care in relation to patient age, protected characteristics, intersectional experiences, cognitive ability, social, environmental, cultural and psychological factors.	4
5.1, 5.4,	care	Use professional judgement and problem-solving skills based on patient need to draw up appropriate management plans.	4
		Adapt management plans in relation to patient age, cognitive ability, social, environmental, cultural and psychological factors.	4
2.7, 2.8,		Ethical practice.	4
2.11, 6, 6.1, 6.2, 6.4, 6.5	Ethics	Consent.	4
4.2, 4.3,		Clinical decision making.	4
4.6, 4.7	Reasoning	Problem solving.	4
4.5	Initiative	Personal initiative.	3
8.5	Emotional regulation	Identify anxiety and stress in self and others.	3
	Professionalism	Professional manner and dress.	3
		Equality, diversity and inclusion.	3
5, 5.1, 5.2,		Impact of values, beliefs and personal biases.	3
5.3, 5.4, 5.5, 5.6, 5.7	EDI	Recognise protected characteristics, social, political, economic, cultural and institutional factors influencing care delivery.	3
		Equality legislation.	3
		Orthoptic colleagues.	4
1.1, 4.4,		Ophthalmologists.	4
4.9, 8.12, 8, 8.1, 8.2,	Team working, communication and	Other eyecare professionals (optometrists, nurses, assistants, technicians).	4
8.3, 8.4, 8.13, 8.14,	appropriate referral pathways between:	Multidisciplinary / community teams outside ophthalmology.	3
12.3, 12.4		Within a formal legal framework (e.g. child protection, cared-for children, medicolegal).	3
8.1	Service users, carers and others	Working in partnership.	3

6.2, 9, 9.1,	Maintaining records	Record keeping (paper & digital).	4
		Use existing records to inform patient care.	4
9.2, 9.3		Make accurate, contemporaneous and complete records of each patient episode.	4
		Working within the limits of personal knowledge and skills.	4
1, 1.1, 2.9, 2.10, 4.4	Scope of practice	Recognition of scope of practice, limitations of personal expertise and when to make onward referrals.	4
		Receiving referrals.	4
		Monitoring practice.	3
11, 11.3, 11.4, 11.6	Quality assurance	Quality management.	3
11.1, 11.0		Clinical governance.	3
		Use of digital resources.	3
6.5, 7.7	Digital literacy	Appropriate use of social media and internet resources at work.	3

Health and safety

HCPC mapping	Topic	ltem	Level
2.2, 2.3	Safeguarding	Reporting concerns about safety (whistleblowing and safeguarding).	3
		Child and vulnerable adult protection and safeguarding.	4
2.2, 14, 14.1, 14.2,	Practice environment	Conflict resolution with service users/ colleagues or others.	1
		How to maintain personal and service user safety in risky situations.	1
14.3, 14.4, 14.5, 14.6		Personal and patient health and safety.	3
,		Manual handling.	3
12.37,		Infection control in Orthoptic practice.	3
14.3, 14.4, 14.5	Infection control	Equipment decontamination.	3

Personal management

HCPC mapping	Topic	ltem	Level
42224	Workload and time management	Prioritise a personal workload.	3
1.2, 3, 3.1, 3.2, 3.3, 3.4, 15.4	Personal health and wellbeing	Personal mental and physical health, and wellbeing.	3
		Occupational Health.	3
		Managing emotional burden.	3

Sustainability

HCPC mapping	Topic	ltem	Level
	Sustainability in healthcare	Sustainability in healthcare.	1

Clinical knowledge

HCPC mapping	Topic	ltem	Level
12.0, 12.1,	General anatomy and	Cell biology & histology.	1
		Basic structure and function of the musculoskeletal, respiratory, vascular, gastrointestinal and sensory systems.	1
12.6, 12.7, 12.8	physiology	Genetics and inheritance.	2
. 2.0		Vascular, endocrine systems.	2
		Central and autonomic nervous systems, cranial nerves and head and neck anatomy.	3
		General embryology.	1
		Ocular embryology.	2
12.5, 12.6, 12.9	Development and lifespan changes	Typical physical and motor child development.	2
. 2.73		Normal ageing.	2
		General effects of prematurity.	3
	General pathology	Developmental delay.	2
		Vascular diseases including stroke.	2
		Neoplastic diseases.	2
		Genetic diseases including chromosomal abnormalities which relate to the eye.	2
		Infectious, viral /bacterial diseases including cellulitis and Herpes Zoster Ophthalmicus (HZO).	2
12.9	and disease processes	Inflammatory diseases including Juvenile Idiopathic Arthritis.	2
		Neurological diseases, including cerebral palsy and dementia.	2
		Myopathic diseases especially ocular myopathies.	3
		Metabolic diseases including diabetes.	3
		Auto-immune diseases including MS, myasthenia gravis, and thyroid eye disease.	3

		Bony orbit.	3
		Ocular adnexa & lacrimal.	3
		Ocular circulation.	3
		Lens.	3
		Cornea.	3
	Detailed ocular	Aqueous /vitreous.	3
12.6, 12.7	anatomy and	Maintenance of intra-ocular pressure.	3
	physiology	Uveal tract.	3
		Extraocular muscles, including: Micro- structure and function, Gross anatomy, Muscle actions.	4
		Orbital fascia including muscle pulleys.	4
		Ocular innervation, including: Sympathetic and parasympathetic, Cranial nerves II, III, IV, VI.	4
		Retina.	4
		Awareness of how medicines are licensed, sourced and supplied, and the legal and ethical implications of doing so.	3
12.28,		Systems necessary to supply and administer medicines.	3
12.29, 12.30,		Pharmacokinetics of other ophthalmic drugs.	3
12.31, 12.32,		Drugs that can be used by Orthoptists as part of the Exemptions legislation.	3
12.33,	Ocular	Adverse drug reactions and reporting.	3
12.34, 12.35,	pharmacology and use of drugs	Indications and contraindications.	3
12.36, 12.37, 12.38, 13.29, 13.30		Dosages, administration routes and storage.	3
		Interactions, cautions, and side effects.	3
		How multiple pathologies, existing medication, allergies and contraindications may affect the action of the drugs.	3
		Pharmacokinetics of mydriatic, antimicrobial, local anaesthetic and cycloplegic drugs.	4

		Optical illusions.	1
		Virtual reality.	1
		Colour vision including principles of colour vision tests.	2
		Dark adaptation.	2
		Contrast sensitivity.	3
		Motion detection.	3
		Fixation maintenance.	3
		Horopter/Panum's area and space.	3
		Retinal rivalry.	3
12.12,	Normal visual function	Visual processes involved with reading.	3
12.13, 12.14, 12.17,		Visual acuity, including: principles, detection/ resolution/ recognition acuity/ hyperacuities, alternative notations.	4
12.23		Foveal vs. peripheral vision.	4
		Projection & normal correspondence.	4
		Physiological diplopia.	4
		Sensory fusion and stereopsis.	4
		Physiology of ocular alignment Muscle laws (Hering's, Sherrington's, Listing's Laws).	4
		Vergence and motor fusion.	4
		Accommodation.	4
		Accommodation/convergence relationships (AC/A and CA/C relationships and ratios).	4
		Relative vergence/accommodation.	4

Telescopes. 1 Badal systems. 1 Types and indications of lens implants. 1 Tints and filters. 2 Magnifiers and other low vision aids. 2 Principles of refraction, including photorefraction / autorefraction. 2 Principles of spectacle fitting, such as, IPD /back vertex distance / high index lenses. 2 Refraction / reflection / diffraction / polarisation. 3 Ocular aberrations. 3 Refractive index. 3 Pinholes and stenopaic slit. 3 Focimetry and neutralisation of lenses. 3 Slit lamp. 3 Emmetropisation. 3 Therapies for delaying onset or slowing progress of myopia. 3 Interprinciples of prefraction, including retinoscopy (cycloplegic / non cycloplegic / over refraction / dynamic/ Brückner / Mohindra). 3 Subjective refraction and post mydriatic testing including crossed dylinders / duochrome test / assignatic fan. 2 Principles of spectacle prescription. 3 Correction of presbyopia including bifocals, multifocals, progressive lenses, monovision. 0 Optical principles / types of contact lenses. 3 Lenses: optics, notation. 4 Lenses: optics, notation. 4 Prism polics and notation including Fresnel prisms. 4 Prism polics and notation including fresnel prisms. 4 Prism policement e.g. Prentice vs frontal plane / effects of stacking. 0 Ophthalmoscopes including fixation ophthalmoscopes. 4 Retinoscopes. Refractive errors: myopia, hypermetropia, astigmatism, anisometropia. Principles of prism prescription and incorporated prisms. 4			Loupes.	1
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anisometropia. 4			Retinoscopes.	4
Principles of prism prescription and incorporated prisms. 4				4
Back to Core Curriculum Framework C				

		Outline of psychological development from infancy to adulthood.	2
		Language and communication acquisition.	2
		Literacy acquisition.	2
		Non-verbal communication.	2
12.10,	Psychology	Health beliefs and inequalities in healthcare.	2
12.11	, G	Barriers to access to healthcare.	2
		Age / ethnic / cultural / social differences.	2
		Psychopathology including: depression / autism / anxiety / schizophrenia / OCD.	2
		Factors affecting adherence/ non-adherence to treatment.	4
	First aid	Basic first aid and CPR.	3
11.1, 12.2, 13.1	Evidence-based practice	Adherence to local and national clinical and professional guidelines where applicable.	4
		Use of current best evidence-based practice.	4

^{*}Orthoptists use detailed knowledge of many optical principles in the management of their patients. They need to be competent in understanding clinical visual optics and using many optical instruments and techniques. Although they do not themselves prescribe spectacles, when it applies to their patients, they are frequently required to advise on spectacle prescription.

Clinical skills relating to investigation

For most of these topics knowledge of the theory, construction, use and interpretation of results and the ability to choose and carry out the test independently as part of a full investigation are core competencies; as is the ability to recognise atypical or complex responses, or the need for a specialist tests and seek support where appropriate.

HCPC mapping	Topic	ltem	Level
	History taking	Orthoptic history.	4
13.2, 13.5, 13.15		General ophthalmic history.	4
		General medical history.	4
		Social, family, drug history.	4

		Electrodiagnostic tests of vision.	1
		Assessment of eccentric fixation.	3
		Clinical contrast sensitivity tests.	3
12.12, 13.4,		Children's colour vision tests.	3
13.12,		Adult colour vision tests.	3
13.13, 13.16,	Vision	Estimation of vision in infants and non-verbal service users.	4
13.18,		Preferential looking and vanishing optotypes.	4
13.20, 13.25		Picture tests.	4
13,23		Letter tests for children.	4
		"Gold standard" optotype tests.	4
		Assessment of crowding / separation difficulty.	4
		Knowledge of angle kappa (alpha/lambda).	2
		Knowledge of fixation disparity.	2
		Eye tracking and nystagmography.	2
		EMG.	2
	Observations / ocular deviation / fixation	Maddox Rod (and von Graefe's and tangent scale methods).	3
		Assessment of corneal reflections.	4
12.12,		Cover/ uncover test.	4
12.16, 12.20,		Alternate cover test.	4
12.21,		Prism cover test in primary position and 9 positions of gaze.	4
13.4, 13.6, 13.7,		Simultaneous prism cover test.	4
13.12, 13.13,		Synoptophore, including: objective and subjective angle. Horizontal/vertical/torsional.	4
13.14		Lees screen/Hess chart.	4
		Ocular motility, including: versions, ductions, smooth pursuit, saccades, vergence, translatory movements, optokinetic nystagmus (OKN), vestibulo-ocular reflex (VOR).	4
		Clinical assessment of nystagmus.	4
		Field of BSV.	4
		Field of uniocular fixation.	4

		Vergence facility (flipper prisms).	3
		Accommodation facility (flipper lenses).	3
		Filter bar assessment of fusion and DVD.	3
		Convergence to near point.	4
		4^ prism test.	4
12.12, 12.16,		20^ BO prism test.	4
12.10,		Prism fusion ranges (to blur, diplopia and recovery).	4
13.4, 13.6, 13.7,	Binocular vision	Near point of accommodation.	4
13.12,		Relative fusion/relative vergence methods.	4
13.13		Bagolini striated glasses.	4
		Worth's lights.	4
		Synoptophore and prism assessment of potential binocular function.	4
		Stereotests (anaglyphs (e.g. TNO), vectographs (e.g. Titmus), and free space methods (e.g. Frisby, FD2, Lang, Lang 2 pen).	4
12.12,	Suppression and	Differential diagnosis scotomatous vs non-scotomatous suppression.	3
12.16, 13.4, 13.6, 13.7, 13.12, 13.13, 13.20		Assessment of suppression: with prisms (including post-op diplopia test), on the synoptophore (depth & area), and with filter bar.	4
	correspondence	Assessment of microtropia.	4
		Assessment of (non microtropic) abnormal correspondence (abnormal binocular vision and foveal/ foveal projection).	4

		Retinal imaging & fluorescein angiography.	1
		Tonometry, including Contact/non-contact methods, and applanation tonometry.	2
		Ocular Coherence Tonometry (OCT).	2
		Heidelberg Retinal Tomography (HRT).	2
		Corneal topography.	2
12.12,	Ophthalmological investigation*	Pachymetry.	2
12.26, 13.4, 13.6,		Forced duction/generation tests.	2
13.7, 13.23,		Slit lamp examination, including anterior segment, ocular media, fundus (high plus lens), lid examination.	3
13.24		Visual fields, including Goldman and automated perimetry.	3
		Medicines related to exemptions for Orthoptists.	3
		Pupil examination and external ocular examination.	4
		Practical administration of eye drops.	4
		Direct ophthalmoscopy.	4
		Visual fields to confrontation.	4

^{*}The principles and rationale for these tests should be understood and they should have been observed and preferably carried out in practice. In some orthoptic roles competencies may not need to be maintained if they do not form part of the clinical role. Undertaking them as a new role may involve local sign-off of competence.

Clinical skills relating to management

"Management" here means the use of findings from an investigation to create and monitor a management plan. A core skill is to recognise atypical or complex cases, adapt management plans accordingly and seek support where appropriate. In some areas, rather than carry out a procedure themselves, Orthoptists need sufficient knowledge to assess overall ongoing care of a patient and re-refer problems, but should not be expected to deliver or carry out a specific procedure. In some cases, they would be expected to work as part of a team with others e.g. ophthalmologists/ optometrists /ophthalmic nurses.

HCPC mapping	Topic	Item	Level
		Knowledge of miotic treatment of accommodative esotropia.	1
		Outline awareness of behavioural optometry methods for Orthoptic exercises.	1
		Clerking procedures for pre-operative assessment.	1
		Knowledge of spectacle fitting in adults and complex fitting needs.	2
		Knowledge of the treatment of myopia (near additions, atropine, orthokeratology).	2
		Reduced contrast /dichoptic amblyopia treatment methods (e.g. Hess group methods).	2
		Filters /overlays in specific literacy difficulties / dyslexia.	2
		Awareness of where optometric vision therapy methods use similar principles with different names for Orthoptic exercises.	2
		Orthoptic role in aiding surgeon in decision-making where appropriate for complex strabismus (consecutive/ secondary / re-operations), and incomitant strabismus.	2
		Knowledge of spectacle fitting in children.	3
		Cycloplegia in accommodative problems.	3
12.12, 13, 13.3, 13.26,	Treatment methods	Orthoptic exercises, including anti-suppression methods (scotoma and density).	3
13.27, 13.28,		Orthoptic role in aiding surgeon in decision-making where appropriate for simple concomitant strabismus.	3
13.31		Post-operative assessment, including orthoptic testing, indications for referral for ophthalmologist opinion, and management of post-operative complications.	3
		Knowledge of spectacle prescription; in non-strabismic children, in strabismic children where the prescription affects the angle of deviation, and in strabismic adults.	4
		Knowledge of the correction of presbyopia.	4
		Prism prescription for children and adults.	4
		Press-on prism fitting.	4
		Occlusion therapy (patches).	4
		Optical penalisation.	4
		Atropine penalisation.	4
		Orthoptic exercises including, convergence /divergence methods (prisms, synoptophore, dot card etc.).	4
		Relative vergence methods (+ve /-ve relative vergence, stereograms).	4
		Knowledge of strabismus surgery, including techniques for concomitant strabismus, and incomitant strabismus.	4

12.20		Stimulus deprivation.	3
		Toxic.	3
13.26, 13.27,	Ambhaniat	Ametropic.	4
13.28, 13.31	Amblyopia*	Strabismic.	4
13.31		Anisometropic.	4
		Combined mechanism.	4
		Pseudostrabismus.	4
		Eccentric fixation.	3
		Large or decompensating esophorias.	3
		Intermittent esotropia: Fully accommodative.	4
		Intermittent esotropia: Convergence excess.	4
		Distance esotropia in the elderly ("sagging eye" syndrome).	3
		Cyclic & other.	2
		Constant esotropia: Infantile.	4
13.26, 13.27, 13.28,	Concomitant strabismus*	Constant esotropia: Constant without abnormal correspondence (AC).	4
13.26,		Constant esotropia: Constant with AC.	3
		Constant esotropia: With accommodative element (partially accommodative).	4
		Constant esotropia: Microtropia.	4
		Large or decompensating exophorias.	4
		Intermittent exotropia: Distance and non-specific exotropia.	4
		Near Exotropia.	4
		Consecutive strabismus.	3
		Secondary strabismus.	3
		Convergence insufficiency.	4
		Convergence spasm.	2
13.26, 13.27,		Convergence paralysis.	2
	Convergence,	Accommodation insufficiency.	3
13.28,	accommodation, and near-work anomalies	Accommodation spasm.	2
13.31		Accommodation paralysis.	2
		Accommodation inertia.	3
		Conversion disorders of vision ("functional amblyopia"/medically unexplained symptoms).	2

		Multiple nerve palsies (Orbital apex, Cavernous sinus, HZO).	2
		Brainstem palsies.	2
		Inflammatory strabismus (orbital cellulitis, myositis).	3
		latrogenic strabismus.	3
		Incomitant strabismus associated with high myopia ("heavy eye") or healthy ageing (distance esophoria/ "sagging eye syndrome").	3
		Other congenital cranial dysinnervation syndromes including "congenital fibrosis syndrome" / Marcus Gunn syndrome.	3
		Orthoptic significance of cranial dysostoses.	3
		Supranuclear ocular palsies.	3
13.26,	Incomitant	Internuclear palsies.	3
13.27, 13.28, 13.31	Incomitant strabismus**	Vertical deviations in primary concomitant strabismus e.g. inferior oblique dysfunction.	4
19.91		Dissociated vertical or horizontal divergence (DVD / DHD).	4
		IIIN palsies.	4
		IVN palsies.	4
		VIN palsies.	4
		Differential diagnoses (recent/longstanding, neurogenic/myogenic, SR/SO).	4
		Alphabet patterns (Α/V/Y/X/λ).	4
		Orbital trauma and fractures.	4
		Brown syndrome.	4
		Duane syndrome.	4
		Ptosis.	4
		Hypertension.	3
		Diabetes.	3
		Stroke.	3
12.24,	Effects of general	Parkinson's disease.	3
13.17, 13.21,	disease on ocular	Neoplastic diseases.	3
13.31	motility	Cerebral palsy.	3
		Multiple sclerosis.	4
		Myasthenia gravis (including Tensilon/ice pack tests).	4
		Thyroid ophthalmopathy.	4

13.17,		Non-surgical and surgical management of Idiopathic and infancy onset nystagmus.	3
13.19, 13.31	Nystagmus	Acquired nystagmus.	3
15.51		Latent nystagmus.	3
		Children with specific literacy difficulties.	3
		Diabetic adults.	3
		Age-related macular degeneration.	3
12.27	Vision Screening***	National vision screening guidelines.	4
	Retinopathy of Prematurity	Amblyopia screening (visual acuity screening, strabismus screening, risk factor screening e.g. photoscreening for refractive errors).	4
		Children with hearing loss, special needs (e.g. Down syndrome /chromosome abnormalities, cerebral palsy).	4
		Assisting ophthalmologists in fundus assessment.	2
		Ongoing monitoring of premature children as they develop.	3
	General	Support groups for service users.	1
12.24,		General ophthalmic history taking.	3
12.25,	Ophthalmology and	Acute and emergency ophthalmology.	3
12.26, 13.2, 13.5, 13.15	Ophthalmic , Symptomatology not covered elsewhere	Disease processes and treatment, including glaucoma and ocular hypertension, retinal disease (Medical Retina) including age-related macular degeneration (AMD) and retinitis pigmentosa (RP), cataract, corneal disease, oculoplastics, neuro-ophthalmology, and ocular trauma.	3

		Neurosurgery.	1
		Radiotherapy.	1
		Botulinum toxin for blepharospasm/hemifacial spasm.	2
		Cataract surgery.	2
		Laser, including refractive (LASIK), photocoagulation, and capsulotomy.	2
		Glaucoma surgery.	2
		Corneal surgery.	2
		Vitreoretinal surgery.	2
12.5, 12.9,	Ophthalmic procedures	Oculoplastic surgery.	2
12.26,		Orbital surgery.	2
12.28, 12.34,		Lacrimal probing /chalazion surgery.	2
12.38,		Scanning techniques (ultrasound, x-ray, MRI, fMRI).	2
13.25		Neurological assessment.	2
		Paediatric developmental assessment.	2
		Administer drugs as prescribed.	3
		Recognise allergies and common complications.	3
		Botulinum toxin for strabismus.	3
		Strabismus surgery for concomitant and incomitant strabismus, including techniques.	3
		Nystagmus surgery.	3
		Electrodiagnostic testing.	3
		Medicines related to exemptions for Orthoptists.	3

^{*} This is the core of Orthoptic practice, so all registered Orthoptists would be expected to be competent to diagnose and manage all straightforward cases, recognise atypical and complex cases and seek support where required. In most cases, an important part of the management process is not just how to treat, but the decision-making processes about when to treat, when not to treat or how, and how frequently monitoring is necessary if treatment is anticipated, but not immediately indicated. This role is frequently carried out at Orthoptist-level, without routine input from ophthalmologists.

^{**} Generally managed with Ophthalmologists for medical/surgical aspects of treatment

^{***} Orthoptists may be involved in many different types of screening for visual defects. As a minimum they need an overview of the scope of screening for disease in general, for specific ocular diseases particular, and the methods available for such screening. In some cases, they will undertake unsupervised screening using agreed protocols and tests in which they have sufficient training and competence, and be expected to make appropriate referrals. In extended roles, they may learn additional skills and competencies to perform more complex testing or develop and manage services. Orthoptists have particular skills in vision screening of children.

Framework domains: Education

Personal and professional development

HCPC mapping	Topic	Item	Level
1.3, 10,	Reflection	Methods of review.	3
10.1, 10.2		Reflective practice.	4
1.3, 4.8,	Continuous profes-	Maintain a comprehensive CPD record.	3
10.1	sional development (CPD)	Lifelong, self-directed learning.	4
	Presentation skills	Be able to use presentation skills to present material to colleagues and wider audiences.	3
4.8, 8.11	Clinical teaching	Demonstrating to students/ other professionals.	3

Framework domains: Research

The NHS Health Research Authority (HRA) has stated that research should be embedded in healthcare. All Orthoptists should be equipped with an outline knowledge and some experience of the research process. All Orthoptists should have sufficient research skills to contribute to local, national or international research projects as part of a team (recruiting, testing, data collection using a protocol), and to act ethically, legally and responsibly. By engaging in simple audits, service evaluations and low-level research activity, and with outline knowledge of higher level or more complex research processes, a culture of research can be encouraged. It is recommended that all pre-registration Orthoptic students receive research methods and statistics training.

Research context

HCPC mapping	Topic	ltem	Level
12.2, 13.8, 13.9, 13.10, 13.11	Research awareness	Understand the differences between audit, service evaluation and research.	3
	Infrastructure	Awareness of support services (hospital R&D, Research Design Service, mentorship schemes, local Council for AHP Research hubs, universities).	1

Critical appraisal/evaluation

HCPC mapping	Topic	Item	Level
12.2, 13.10	Critical appraisal/ evaluation	Able to interpret findings of papers and literature reviews.	3
		Present and critically assess a paper in a journal club.	3
	Reviewing	Carry out a literature review.	3

Literature searching

HCPC mapping	Topic	Item	Level
	Systematic reviews	Prepare a systematic review.	1
	Databases	Access sources of literature.	3
	Grey literature	Limitations of databases.	1

Research funding

HCPC mapping	Topic	Item	Level
- Fun	Funding	Sources of research funding and training schemes.	1
	Funding	Preparation of a research grant.	1

Research design

HCPC mapping	Topic	ltem	Level
13.11	Patient and public involvement/ engagement	The role of Patient & Public Involvement.	1
13.11	Co-production	The role of co-production.	1
12.2	Study designs	Surveys/RCTs/qualitative methods.	3
	Research questions	Framing a research question/hypothesis generation.	3
	Research teams	Roles of a research team (Chief Investigator, Principal Investigator, Research Governance/ Ethics, multi-centre collaborations).	2
	Protocols	Prepare a simple research protocol.	2
	Measures	Questionnaire design.	2

Research conduct

HCPC mapping	Topic	ltem	Level
	Coversons	Confidentiality, data protection, masking.	3
	Governance	Anonymisation, pseudonymisation of data.	3
		Research ethics.	2
	Ethics	Prepare an Ethics application.	2
		Understand when Ethics committee approval is necessary.	3
		Participant selection.	2
	Research participation	Inclusion/exclusion criteria.	2
		Sampling.	2
		Randomisation.	2

Data

HCPC mapping	Topic	ltem	Level
	Data collection	Data collection methods.	2
	Data management	Data cleaning /transposition.	1
		Set up a database.	2
		Security.	2
Dala Stora	Data storage	Archiving.	2

Statistical analysis

HCPC mapping	Topic	ltem	Level
	Basic principles	Probability and statistical / clinical significance.	3
	Descriptive statistics	Descriptive statistics.	3
	Qualitative analysis	Qualitative methods (frameworks, interviews and their analysis).	2
	Basic quantitative analysis	Simple parametric statistics.	2
		Non-parametric statistics.	2
	Complex analysis	More complex methods (e.g. multivariate, Bayesian, factor analysis). No expectation to be able to conduct any form of regression analysis, deep learning, machine learning, prediction modelling etc.	1

Research dissemination

HCPC mapping	Topic	ltem	Level
	Principles of dissemination	Routes from research to practice/assessing impact.	1
	Abstracts	Prepare a scientific abstract.	3
	Posters	Prepare a scientific poster.	3
		Present a scientific poster.	2
	Research papers	Write a scientific paper.	1
		Present a scientific paper.	1

Audit/service evaluation

HCPC mapping	Topic	ltem	Level
11.2	Audit/service evaluation	Measure and evaluate critically the outcomes of professional activities.	2
		Understand statistical methods used to assess screening/ audit e.g. sensitivity, specificity, predictive values, ROC analysis, Bland Altman analysis.	2
		Carry out a simple audit in a local NHS setting.	2

Epidemiology

HCPC mapping	Topic	ltem	Level
	Key principles of epidemiology	Epidemiology.	1

Public health

HCPC mapping	Topic	ltem	Level
15, 15.1, 15.2, 15.3	Key principles of public health	Public Health.	3
		Health promotion, health education and preventing ill-health.	3
		Wider determinants of health.	3
12.27	Screening	Generic principles of health screening.	2

Health economics

HCPC mappin	Topic	ltem	Level
		Understand principles of health economics and cost effectiveness e.g. quality of life analysis.	2

Framework domains: Leadership and management

All HCPC registrants are expected to demonstrate leadership at all levels of practice. Leadership training thus forms a core component of pre-registration Orthoptic training, focussing on how each learner can identify their own leadership qualities, behaviours and approaches, taking into account the importance of equality, diversity and inclusion. Examples of leadership include leading on group projects/presentations/posters, as well as demonstrating early signs of clinical leadership. Newly qualified Orthoptists are not expected to undertake a management role.

Leadership in practice

HCPC mapping	Topic	ltem	Level
8.6, 8.7, 8.8, 8.9, 8.10		Qualities, behaviours and benefits.	3
		Demonstrating leadership.	3

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Workplace readiness

Training to become an Orthoptist not only involves teaching and assessment in the relevant knowledge/skills/behaviours highlighted in the framework above, but also requires learners to prepare to enter a professional working environment.

Support for workplace readiness is broadly spilt into pre- and post-registration packages, described below.

Pre-registration

Pre-preceptorship

Recent advances in support have included the development of an e-learning for health module pre-preceptorship 'Step to Work'⁵. There is an NHS England funded project currently underway to help signpost to existing pre-preceptorship resources and highlight best-practice recommendations to HEIs, learners and employers. We have also highlighted throughout that communication skills are key to being a clinician and further e-learning for health resources⁶ can also help learners prepare for the workplace.

Post-registration

Preceptorship

Employers of newly qualified Orthoptists (NHS Band 5) commonly institute support through preceptorship. Standardised resources for preceptorship are available through BIOS and

the BIOS website hosts further resources in an area developed by new graduates, for future new graduates.⁷

Broadly, preceptorship allows newly qualified Orthoptists to be supported by a more experienced member of staff, to allow time to develop confidence as an autonomous clinician and refine skills.⁸

Career development

As discussed earlier, each Orthoptist has an individual responsibility to maintain fitness to practise. This is largely evidenced through reflective practice and a CPD portfolio – and can now be mapped across the 4 domains – clinical practice, education, research, and leadership and management, with expectations of differing development needs at various stages of a career.

Career progression/promotion is accessible for all and should be driven by the individual, but recognising the value of support structures/ opportunities. For Orthoptists, these include line managers, appraisers, mentors, coaches, supervisors, Clinical and non-clinical Advisory Groups (CAGs and nCAGs), training and development opportunities, peers, colleagues and senior leadership both locally and nationally/ internationally. Effective utilisation of support structures/opportunities will help shape future Orthoptic leaders, who will in turn drive development of the profession.

Glossary

Common acronyms used throughout the document include:

Al Artificial Intelligence

AP Advanced Practice

AHP Allied Health Professional

BIOS British and Irish Orthoptic Society

CAG Clinical Advisory Group

CPD Continuous/Continuing Professional

Development

EP Enhanced Practice

EDI Equality, Diversity and Inclusion

EPDC Education and Professional Development

Committee (BIOS)

HCPC Health and Care Professions Council

HEI Higher Education Institution

nCAG Non-clinical Advisory Group

NHS National Health Service

NHSE National Health Service England

OSCE Objective Structured Clinical Examination

QA Quality Assurance

QAA Quality Assurance Agency for Higher

Education

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Curriculum Framework for Pre-registration Orthoptic Education and Training

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