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in mathematics & statistics support

# MS-MAPS

## Mathematics Support Mapped Against Professional Standards

A guide to the UK Professional Standards Framework  
for those working in HE mathematics and statistics support

**Revised and aligned to the 2023 Professional Standards Framework**



## **Acknowledgements**

MS-MAPS was originally produced in 2017 for the **sigma** Network by a working group comprising:  
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This updated edition aligns with the newly revised 2023 version of the Professional Standards Framework.

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# Welcome to MS-MAPS

## Background

Since the 1990's, numerous reports have highlighted the need for additional support to be made available in higher education institutions for students who find the mathematical or statistical content of their courses challenging, *inter alia* London Mathematical Society (1995), Hawkes & Savage (2000), Institute of Physics (2011). The majority of universities in the UK now offer maths support\*, of one kind or another (Perkin et al, 2013; Lawson et al, 2020). The organisational structure, mode of delivery and range of provision varies from institution to institution, but the common thread is the commitment to help students increase their confidence and competence in quantitative work.

Staff working in mathematics and statistics support centres, or who otherwise support students to develop their mathematical skills, are also many and varied. They may be called lecturers, tutors, advisers, coaches, mentors or learning developers. They might be qualified mathematicians, or qualified in a different discipline where maths or statistics play an important part. They might be employed on academic contracts or on academic-related, administrative or support contracts - or indeed might work voluntarily. They might work full-time, part-time or occasionally. They might be hugely experienced in educational settings, or they might be postgraduate or undergraduate students just starting to acquire the pedagogical skills needed for the job.

People working in maths support are no longer “a few well-meaning, possibly eccentric, individuals” working in some kind of “cottage industry” (Kyle, 2010). They now form a well-defined community of practice, and are an integral part of department, faculty or institutional provision (Marr & Grove, 2010; Tolley & Mackenzie, 2015). As such they are entitled to, and indeed aspire to, professional recognition. Most higher education institutions offer routes to professional recognition via the HEA Fellowship scheme. Staff might be supported to apply for Fellowship directly, or this might be part of an accredited in-house scheme such as a Postgraduate Certificate in Academic Practice.

The **sigma** Network exists as a professional association for everyone engaged in HE mathematics and statistics support. Which is why we are publishing this updated version of MS-MAPS, a resource to assist maths support practitioners to identify and collect the evidence needed for a Fellowship application (at Associate Fellow, Fellow, Senior Fellow or Principal Fellow level).

*\* In common with other **sigma** publications, we will for convenience use the phrase “maths support” to stand for support in mathematics, statistics, numeracy and wider quantitative skills in higher education.*

# The UK Professional Standards Framework (UKPSF)

The UK Professional Standards Framework was developed by the Higher Education Academy (HEA) – subsequently known as Advance HE - on behalf of the UK higher education sector, along with GuildHE and Universities UK. It claims to be a globally recognised framework for benchmarking success within HE teaching and learning support (Advance HE, 2023). Specifically, it is taken as the basis for professional recognition and Fellowship awards.

The UKPSF defines three Dimensions of Professional Practice (referred to as A, K and V), and itemises what should be evidenced within each Dimension:

Areas of Activity. Demonstrate that you:

- A1 Design and plan learning activities and/or programmes.
- A2 Teach and/or support learning through appropriate approaches and environments.
- A3 Assess and give feedback for learning.
- A4 Support and guide learners.
- A5 Enhance practice through own continuing professional development.

Core Knowledge. Apply knowledge of:

- K1 How learners learn, generally and within specific subjects.
- K2 Approaches to teaching and/or supporting learning, appropriate for subjects and level of study.
- K3 Critical evaluation as a basis for effective practice.
- K4 Appropriate use of digital and/or other technologies, and resources for learning.
- K5 Requirements for quality assurance and enhancement, and their implications for practice.

Professional Values. Show how you:

- V1 Respect individual learners and diverse groups of learners.
- V2 Promote engagement in learning and equity of opportunity for all to reach their potential.
- V3 Use scholarship, or research, or professional learning, or other evidence-informed approaches as a basis for effective practice.
- V4 Respond to the wider context in which higher education operates, recognising implications for practice.
- V5 Collaborate with others to enhance practice.

The UKPSF explicitly includes mention of “supporting learning” alongside “teaching”, in recognition of the fact that it is not just traditional teachers and lecturers who are involved in facilitating student learning. This clearly opens the door for people working in a range of academic-related and learning development areas, including mathematics and statistics support, to access professional recognition for their work in supporting learning via Fellowships on the basis of the UKPSF.

Fellowship can be granted at one of four levels:

- Associate Fellow (AFHEA) - typically for staff new to teaching or learning support, or researchers/technicians with a limited teaching role.
- Fellow (FHEA) - typically for established academic, academic-related or support staff with significant teaching duties.
- Senior Fellow (SFHEA) - typically for those whose teaching or support of learning incorporates a management or leadership role.
- Principal Fellow (PFHEA) - typically for highly experienced staff whose work demonstrates impact nationally or internationally.

However, the UKPSF Dimensions (A, K, V) need to be addressed as appropriate regardless of which level of Fellowship is being applied for.

# The rationale behind MS-MAPS:

## Mathematics Support Mapped Against Professional Standards

Many people working in mathematics and statistics support tell us that they are being encouraged by their institutions to apply for Associate Fellowship, Fellowship or where appropriate Senior Fellowship. This is not just valuable professional development and recognition for the individual, but institutions also benefit from being able to show that their staff have achieved this “kite mark” of teaching excellence. Staff might apply directly for Fellowship, or undertake an in-house accredited programme.

However, people working in maths support also tell us that they find the wording of the UKPSF very general, and find it difficult to relate the descriptors and the dimensions to the specific activities they carry out. This is sometimes compounded when the in-house mentoring that is provided for Fellowship applications (for example through a central Educational Development Unit, or similar) is framed generically, with little awareness of the specifics of mathematics or statistics support.

MS-MAPS firstly identifies ten indicative areas of mathematics and statistics support activity, which (we believe) summarise the broad range of tasks that typically make up the “day job” of a person working in HE maths support:

1. Teaching and supporting student learning
2. Assessment and feedback
3. Embedding maths support and working with course lecturers
4. Working with diverse student populations
5. Evaluation of service provision
6. Contribution to project and/or development work
7. Promoting mathematics and statistics support
8. Team working and leadership
9. Developing and updating own subject knowledge
10. Developing a research-informed understanding of how students learn

MS-MAPS then takes these ten indicative areas of maths support, and breaks them down into typical tasks or activities that maths support tutors might regularly do as part of their job. These tasks are then mapped against the relevant elements of the UKPSF Dimensions (eg: A3, K1, V2, etc). Through this we hope to make clear that many day-to-day activities can in fact provide evidence towards elements of the UKPSF, provided of course that the candidate reflects appropriately and critically on the implication of this for their professional practice.

Do be aware, however, that where we suggest a mapping, this may or may not be relevant to your situation. It depends on the nature of the activity within your context and how (and indeed whether) you carry it out. Our aim is to demonstrate that many “routine” aspects of the day job can in fact contribute to an HEA application portfolio, provided the UKPSF dimensions are understood and interpreted for this context. However, the user should not

simply accept every mapping suggested, but select those that seem most relevant and that can be justified reflectively with appropriate evidence.

An example might make the above clearer...

We suggest that the area 3 activity “Deliver workshops within departments that supplement course provision” might provide evidence against A3: *Assess and give feedback for learning*. This would be the case if, for example, you started your workshop with a quick quiz (eg: using clickers or other voting tools) to judge the baseline knowledge of the students, explained the results and adapted your workshop appropriately. If, however, your workshop was a straight pre-prepared “lecture” with little student interaction you would probably not be able to claim evidence for A3 for this.

The MS-MAPS Reverse Mapping table then looks at this the other way round. Starting from each element of the UKPSF dimensions, we suggest a range of tasks a maths support practitioner might carry out that could provide evidence against that element. The aim here is to “de-mystify” the wording of the UKPSF and illustrate what it could mean in the everyday practice of mathematics and statistics support. This can also show candidates where they might find evidence for any elements that are currently missing in their portfolio. Please note that the Reverse Mapping table does not provide an exact one-to-one correspondence to the original Mapping table. We have sought to identify the most common or representative aspects.

The MS-MAPS tables are not meant to be prescriptive, nor are they intended to be complete. Users should take them as a starting point to reflect more deeply on their own practice and identify further evidence of their professional development.

## MS-MAPS: Mapping (indicative activity → UKPSF dimensions)

Indicative area of Mathematics and Statistics Support activity <sup>1</sup>	A	K	V
<b>1. Teaching and supporting student learning</b>			
• Provide one-to-one individual advice (through drop-ins or booked tutorials)	2, 3, 4	1, 2	1
• Deliver or facilitate group workshops/lectures (eg: numerical reasoning, statistics software)	1, 2, 3, 4	1, 2, 4	1
• Support student-led peer assisted learning sessions	2, 4	1, 2	1
• Online or remote support (eg: through Zoom/Teams, webinars, email, blogs, discussion forums, etc)	1, 2, 3, 4	1, 2, 4	1
• Create learning materials for group or individual use (paper-based, or online resources)	1, 4	1, 2, 4	1
• Host and facilitate informal learning sessions (eg: maths café, problem solving groups, games and puzzles, etc)	1, 2, 4	2, 3	1, 2
• Work with faculties/departments/lecturers to identify emerging needs	1, 4	1, 2	1, 2, 5
• Contribute to off-campus learning (eg: via a virtual learning environment or other remote learning opportunities)	1,2,3,4	1, 2, 4	1, 2

<sup>1</sup> NB: A5 and V3 may be possible throughout if based on research of best practice

Indicative area of Mathematics and Statistics Support activity	A	K	V
<p><b>2. Assessment and feedback</b></p> <ul style="list-style-type: none"> <li>• Give feedback to students on how to improve the quality of their work (eg: accuracy, presentation, etc)</li> <li>• Help students to understand and engage with feedback given by their course lecturers</li> <li>• Informally (formatively) assess students' work during workshops or practice sessions</li> <li>• Access CPD, or read the literature, on assessment and feedback, and apply this knowledge</li> <li>• Create or devise a maths diagnostic testing tool that incorporates feedback</li> <li>• Implement maths diagnostic testing, feeding back to students and/or discussing outcomes with staff</li> <li>• Create interactive online practice materials (eg: NUMBAS, Moodle Quiz, STACK) that offer questions and feedback for students</li> </ul>	<p>3</p> <p>3, 4</p> <p>3, 4</p> <p>5</p> <p>1, 3</p> <p>1, 3</p> <p>1, 3, 4</p>	<p>1, 3</p> <p>1, 3</p> <p>2</p> <p>1, 5</p> <p>1, 2, 4</p> <p>1, 2, 4</p> <p>1, 2, 4</p>	<p>1</p> <p>1</p> <p></p> <p>3, 4</p> <p></p> <p>2, 5</p> <p>1</p>



Indicative area of Mathematics and Statistics Support activity	A	K	V
<b>4. Working with diverse student populations</b>			
• Awareness of specific learning differences (SpLD) and disabilities, applying this knowledge to tailor/adapt own practice	1, 2, 4	1, 2, 3, 4	1, 2, 3, 4
• Awareness of cultural diversity, applying this knowledge to tailor/adapt own practice	1, 2, 4	1, 2, 3, 4	1, 2, 3, 4
• Awareness of dyscalculia and/or maths anxiety, applying this knowledge to tailor/adapt own practice	1, 2, 4	1, 2, 3, 4	1, 2, 3, 4
• Awareness of the needs of mature students, applying this knowledge to tailor/adapt own practice	1, 2, 4	1, 2, 3, 4	1, 2, 3, 4
• Awareness of the maths background of non-traditional entry students, applying this knowledge to tailor/adapt own practice	1, 2, 4	1, 2, 3, 4	1, 2, 3, 4
• Awareness of the needs of remote learners, applying this knowledge to tailor/adapt own practice	1, 2, 4	1, 2, 3, 4	1, 2, 3, 4
• Access CPD, or read the literature, on inclusivity and diversity, and apply this knowledge	1, 4, 5	1, 2, 3, 5	3
• Provide CPD for colleagues on the implications of dyscalculia, maths anxiety and/or SpLD on student learning	5	1, 2, 3, 4	1, 2, 4, 5
• Ensure accessibility of maths and statistics support resources	4, 5	3, 4	1, 2
• Work in collaboration with SpLD specialist advisers, run joint advice sessions	1, 2, 4	1, 2	1, 2, 5
• Present or teach at summer schools and other projects aimed at widening participation or aiding transition to higher education	1, 2	1, 2, 4	2, 4

Indicative area of Mathematics and Statistics Support activity	A	K	V
<b>5. Evaluation of service provision</b>			
• Implement existing evaluation mechanisms for your maths and statistics support provision		3, 5	
• Keep records of student visits & who uses your service to evaluate and adapt provision accordingly	4	3, 5	2
• Devise new or modified systems for gaining user feedback (eg: social media interactions)		4, 5	2
• Evaluate the responses to service evaluation, summarise results, discuss within service team		3, 5	5
• Act on results of service evaluation to modify and improve provision	1, 2, 4, 5	2, 3, 4, 5	3
• Contribute outcome of maths support service evaluation to wider institutional quality review		5	4
• Access CPD, or read the literature, on the evaluate-review-revise cycle, and apply this knowledge	5	3, 4	3
• Liaise with departments/lecturers to determine how students are progressing according to how they use your service		5	3, 5
• Participate in design/analysis of regional/national surveys of maths support provision	5	5	3, 4
• Disseminate and/or publish analysis of the effectiveness (or any problems) of your service provision to the wider mathematics support community	5	3, 5	3, 4
• Provide mentoring/consultancy to other institutions to evaluate their maths support provision	5	3, 5	3, 5

Indicative area of Mathematics and Statistics Support activity	A	K	V
<p><b>6. Contribution to project and/or developmental work</b></p> <ul style="list-style-type: none"> <li>• Identify project (or topic appropriate for development) relevant to your maths and statistics support provision - perhaps through collaboration with other services</li> <li>• Disseminate progress and/or outcomes of the above, both internally and externally (eg: conference presentation)</li> <li>• Submit or review worksheets/materials to <i>mathcentre</i> or <i>statstutor</i> and/or provide feedback for materials already posted</li> <li>• Contribute to the work of your national professional maths support network (eg: <b>sigma</b>, SMSN, IMLSN)</li> <li>• Contribute to the development of new modules or programmes at course level</li> </ul>	<p>1, 4</p> <p>5</p> <p>1, 4</p> <p>5</p> <p>1, 4</p>	<p>2, 3</p> <p></p> <p>1, 2, 4</p> <p></p> <p>2, 4</p>	<p>2, 5</p> <p></p> <p>2, 5</p> <p>4, 5</p> <p>1, 2, 5</p>

Indicative area of Mathematics and Statistics Support activity	A	K	V
<p><b>7. Promoting mathematics and statistics support</b></p> <ul style="list-style-type: none"> <li>• Create and/or disseminate materials in a variety of formats to promote your maths support provision and evaluate their effectiveness</li> <li>• Set up or contribute to social media or other online platforms, representing your provision locally, nationally or internationally</li> <li>• Attend institutional/course meetings to represent and encourage take-up of your service</li> <li>• Engage with students (or student union) to nurture champions for your provision at various levels</li> <li>• Attend and promote your provision at university open days, induction weeks or outreach activities, perhaps delivering “taster” sessions</li> </ul>	<p>5</p> <p>1, 2, 4</p>	<p>4</p> <p>1, 2, 4</p>	<p>2</p> <p>2, 4</p> <p>2</p> <p>2, 5</p> <p>1, 2, 4, 5</p>

Indicative area of Mathematics and Statistics Support activity	A	K	V
<b>8. Team-working and leadership <sup>2</sup></b>			
• Prioritise activities among colleagues in the light of emerging needs from students and course lecturers, within budget constraints where necessary	1, 4	3	5
• Contribute to collaborative developmental projects (eg: new resources, addressing specific needs)	1, 4	2, 4, 5	2, 5
• Train or mentor colleagues (either within or outwith your own institution) to develop their own knowledge and understanding of maths support	2, 4	1, 2, 3, 4	1, 3, 5
• Use evidence-informed approaches and the outcomes of research to help lead and shape your service	1, 5	5	3, 4
• Provide supervision and/or mentoring for a student project (this might include paid/bursaried summer projects) related to maths and statistics support	1, 2, 3	1, 2	
• Involvement with professional associations related to maths and statistics support at the organisational/leadership level (eg: <b>sigma</b> Steering Group, SMSN Committee, IMLSN Committee)	5	3	2, 4, 5
• Contribute to policy relating to maths and statistics support at local, regional and/or national level	5	1, 2, 5	3, 4, 5
• A record of influential publications relating to maths and statistics support	5	1,2,3,4,5	3, 4

<sup>2</sup> Leadership aspects are particularly relevant for Senior Fellowship applications

Indicative area of Mathematics and Statistics Support activity	A	K	V
<b>9. Develop and update own subject knowledge in mathematics and statistics</b> <ul style="list-style-type: none"> <li>• Learn new topics in maths or statistics, to be able to support new/different groups of students</li> <li>• Learn new software, that may be used for mathematics or statistics in different curriculum areas</li> <li>• Attend conferences that focus on the scholarship of maths teaching, learning and support</li> <li>• Keep up to date with the latest developments within the maths support community</li> </ul>	 1, 2, 5 1, 2, 5 5 5	  2, 4 1,2,3,4,5 1,2,3,4,5	 1 1 3 4



## MS-MAPS: Reverse Mapping (UKPSF dimensions → indicative activity)

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Area of Activity: <b>A1</b></p> <p>Design and plan learning activities and/or programmes.</p>	<ul style="list-style-type: none"> <li>• Plan and deliver/facilitate group workshops, lectures or informal learning sessions. Either centrally through an institution-wide maths support service, or embedded within specific departments/courses.</li> <li>• Design new learning materials and/or provide feedback for existing materials (eg: on MathCentre or StatsTutor)</li> <li>• Create a diagnostic test and/or create online practice materials for students which offer formative feedback and support</li> <li>• Advise and liaise with course lecturers on curriculum design that incorporates maths and statistics skills support</li> <li>• Be aware of specific learning differences, disabilities, cultural diversity, and the needs of non-traditional entry students, and apply this knowledge to the development of your maths support provision</li> <li>• Learn new topics and/or software to keep up-to-date with curriculum changes in courses you support, or to be able to support new groups of students, and incorporate this in your session plans or support materials</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Area of Activity: <b>A2</b></p> <p>Teach and/or support learning through appropriate approaches and environments.</p>	<ul style="list-style-type: none"> <li>• Provide support/advice through one-to-ones, drop-ins, workshops, seminars, lectures or online/remote sessions</li> <li>• Deliver “embedded” workshops or tutorials with departments that supplement course provision</li> <li>• Supervise or otherwise facilitate peer-to-peer learning</li> <li>• Represent your provision at open days, induction weeks or outreach events, perhaps delivering “taster” sessions</li> <li>• Train/mentor colleagues to provide maths and statistics support. Team teach where appropriate.</li> <li>• Learn new topics and/or software to keep up-to-date with curriculum changes in courses you support, or to be able to support new groups of students</li> <li>• Be aware of specific learning differences, disabilities, cultural diversity, and the needs of non-traditional entry students and apply this knowledge to adapt your maths support practice</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Area of Activity: <b>A3</b></p> <p>Assess and give feedback for learning.</p>	<ul style="list-style-type: none"> <li>• Give feedback to students on how to improve the quality of work they produce</li> <li>• Help students to understand, and engage with, feedback from their lecturers</li> <li>• Informally (formatively) assess students' work produced during maths support sessions/workshops</li> <li>• Provide and/or deliver (or co-deliver) workshops/classes within departments that are either formal or supplement course provision, and provide informal (formative) feedback</li> <li>• Create or devise a maths diagnostic testing tool that incorporates feedback</li> <li>• Implement maths diagnostic testing and feedback to students and/or staff on outcomes</li> <li>• Create interactive online practice materials (eg: NUMBAS, Moodle Quiz, STACK) that offer questions and feedback for students</li> <li>• Provide supervision/mentoring for a student project relating to maths and statistics support</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Area of Activity: <b>A4</b></p> <p>Support and guide learners.</p>	<ul style="list-style-type: none"> <li>• Offer various forms of mathematics support to suit student needs (eg: one-to-one, drop-ins, workshops, online, remote, embedded, etc)</li> <li>• Organise (or otherwise facilitate) student-led peer-assisted learning sessions</li> <li>• Be aware of specific learning differences, disabilities, cultural diversity, and the needs of non-traditional entry students and apply this knowledge to adapt your maths support practice</li> <li>• Create/update and make available through various channels a range of learning materials for students to use. Ensure your maths support resources are accessible</li> <li>• Be aware of other university support services available to students (welfare, language skills, study skills, IT support, employability, etc) and signpost learners if a need is identified</li> <li>• Be aware of the academic and pastoral tutorial systems in place in the departments where you provide maths support, in order to be able to refer students to relevant departmental support</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Area of Activity: <b>A5</b></p> <p>Enhance practice through own continuing professional development.</p>	<ul style="list-style-type: none"> <li>• Access CPD, or read the literature, on (for example) <ul style="list-style-type: none"> <li>○ assessment and feedback,</li> <li>○ models of embedding maths support,</li> <li>○ inclusivity and diversity,</li> <li>○ the evaluation cycle,</li> <li>○ the pedagogy of mathematics and statistics support</li> </ul> </li> <li>• Reflect on the above, apply to own practice and assess the impact</li> <li>• Analyse and disseminate the effectiveness of your service provision within your institution and to the wider maths support community</li> <li>• Contribute to the development of the maths support community through dissemination of research/work, attendance at conferences, and/or being involved with the national networks (eg: <b>sigma</b>, SMSN, IMLSN)</li> <li>• Have a record of influential publications relating to maths and statistics support</li> <li>• Attend conferences focusing on the scholarship of maths teaching, learning and support, keeping up-to-date with the latest developments</li> <li>• Attend in-house, regional, national and/or international conferences regarding general teaching and learning, applying what you learn to your practice</li> <li>• Learn about (and master) new technologies that might impact your work and the way you operate (e.g. Zoom, Teams or similar to provide remote support; generative AI and its implications for learning)</li> <li>• Learn new topics in maths or statistics, to be able to support new/different groups of students, and/or learn new software that may be used for mathematics or statistics in different curriculum areas</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Core Knowledge: <b>K1</b></p> <p>How learners learn, generally and within specific subjects.</p>	<ul style="list-style-type: none"> <li>• Incorporate knowledge of how learners learn in the planning and delivery of various maths support interventions (one-to-ones, drop-ins, group workshops, peer-led learning, etc), demonstrating a differentiation of approaches according to situation</li> <li>• Incorporate knowledge of how learners learn in the production or revision of a range of support resources (paper-based worksheets, interactive online resources, etc), demonstrating a differentiation of approaches according to medium</li> <li>• Give tailored feedback to students on how to improve the quality of their work. Assess the impact of this feedback, for example judge progress if/when student attends a follow-on support session</li> <li>• Demonstrate awareness of specific learning differences, disabilities, cultural diversity, and the needs of non-traditional entry students and apply this knowledge to adapt your maths support practice</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Core Knowledge: <b>K2</b></p> <p>Approaches to teaching and/or supporting learning, appropriate for subjects and level of study.</p>	<ul style="list-style-type: none"> <li>• Offer various forms of mathematics support to suit student needs (eg: one-to-one, drop-ins, workshops, online, remote, peer-assisted, etc)</li> <li>• Offer online or remote support (eg: through Skype, webinars, email, blogs, discussion forums, etc) and/or contribute to off-campus learning</li> <li>• Create learning materials for group or individual use (paper-based, or online resources)</li> <li>• Host and facilitate informal learning sessions (eg: maths café, problem solving groups, games and puzzles, etc.)</li> <li>• Work with faculties/departments/lecturers to embed maths skills support</li> <li>• Give feedback to students on how to improve the quality of their work (eg: accuracy, presentation, etc) and/or help students to understand and engage with feedback given by their course lecturers</li> <li>• Informally (ie formatively) assess students' work during workshops or practice sessions</li> <li>• Design maths diagnostic tests or interactive online practice materials</li> <li>• Awareness of: <ul style="list-style-type: none"> <li>○ specific learning differences (SpLD) and disabilities,</li> <li>○ dyscalculia,</li> <li>○ maths anxiety,</li> <li>○ cultural diversity,</li> <li>○ mature students,</li> <li>○ remote learners,</li> <li>○ non-traditional entry students,</li> </ul> and applying this knowledge to tailor/adapt own practice </li> </ul>

Core Knowledge: **K2**  
(continued...)

Approaches to teaching and/or supporting learning, appropriate for subjects and level of study.

- Access CPD, or read the literature, on assessment and feedback, inclusivity and diversity and apply this knowledge
- Provide CPD for colleagues on the implications of dyscalculia or maths anxiety on student learning
- Work in collaboration with SpLD specialist advisers, run joint advice sessions
- Contribute to the development of new modules or programmes, with maths support embedded as appropriate.
- Contribute to collaborative developmental projects (eg: new resources, addressing specific needs)
- Attend conferences that focus on the scholarship of maths teaching, learning and support and keeping up-to-date with the latest developments within the maths support community; attend in-house learning and teaching events; attend regional and national conferences or networking events regarding learning and teaching
- Conduct research among own students on their ways of learning

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Core Knowledge: <b>K3</b></p> <p>Critical evaluation as a basis for effective practice.</p>	<ul style="list-style-type: none"> <li>• Access CPD, or read the literature, on critical evaluation of practice (in maths and statistics support in particular, or general education more widely), and apply this knowledge</li> <li>• Implement existing evaluation mechanisms for your maths and statistics support provision</li> <li>• Keep records of student visits to your provision to evaluate and adapt your service accordingly</li> <li>• Devise new or modified systems for gaining user feedback (e.g. social media interactions)</li> <li>• Analyse the responses to service evaluation, summarise results, discuss within service team, make modifications to your practice accordingly. Appraise the impact of this at the next evaluation point.</li> <li>• Liaise with departments/lecturers to determine how students are progressing according to how they use your service. Use departmental feedback to review the support you provide to their students</li> <li>• Participate in design/analysis of regional/national surveys of maths support provision</li> <li>• Disseminate and/or publish analysis of the effectiveness of your service provision in-house, and to the wider mathematics support community</li> <li>• Attend conferences that focus on the scholarship of maths teaching, learning and support, and keep up to date with the latest developments within the maths support community. Attend in-house learning and teaching events. Attend regional and national conferences or networking events regarding learning and teaching. Reflect specifically on evaluating effectiveness</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Core Knowledge: <b>K4</b></p> <p>Appropriate use of digital and/or other technologies, and resources for learning.</p>	<ul style="list-style-type: none"> <li>• Deliver or facilitate technology-enabled group workshops/lectures</li> <li>• Offer online or remote support (eg: through Skype, Zoom, Teams, webinars, email, blogs, discussion forums, etc) and/or contribute to off-campus learning</li> <li>• Use appropriate technology to create learning materials for group or individual use</li> <li>• Design maths diagnostic tests or interactive online practice materials, perhaps incorporating feedback</li> <li>• Ensure accessibility of maths and statistics support resources</li> <li>• Devise new or modified systems for gaining user feedback (eg: social media interactions)</li> <li>• Set up (or contribute to) social media or other online platforms, to promote your provision locally, nationally or internationally</li> <li>• Learn new software, that may be used for mathematics or statistics in different curriculum areas, in order to be able to support students more effectively</li> <li>• Demonstrate awareness of the potential – and pitfalls – of generative AI in teaching and learning</li> <li>• Attend conferences that focus on the scholarship of maths teaching, learning and support. Attend in-house learning and teaching events. Attend regional and national conferences or networking events regarding learning and teaching. Reflect specifically on use of learning technologies.</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Core Knowledge: <b>K5</b></p> <p>Requirements for quality assurance and enhancement, and their implications for practice.</p>	<ul style="list-style-type: none"> <li>• Implement a system of peer observation among tutors working in your maths support centre, to ensure good practice is shared and disseminated among the team</li> <li>• Analyse the responses to service evaluation, summarise results, discuss within service team. Act on results of service evaluation to modify and improve provision</li> <li>• Contribute outcome of maths support service evaluation to wider institutional quality review</li> <li>• Encourage visits (learning walks) by maths support specialists from other institutions, to gain an impartial review of your service from a critical friend. (Or align with your institution's network of external examiners)</li> <li>• Liaise with departments/lecturers to determine how students are progressing according to how they use your service. Use departmental feedback to review the support you provide to their students</li> <li>• Participate in design/analysis of regional/national surveys of maths support provision</li> <li>• Disseminate and/or publish analysis of the effectiveness of your service provision in-house and to the wider mathematics support community. Be open to peer review.</li> <li>• Submit or review worksheets/materials to MathCentre or StatsTutor and/or provide feedback for materials already posted via the Community Project</li> <li>• Use evidence-informed approaches and the outcomes of research to help lead and shape your service</li> <li>• Attend conferences that focus on the scholarship of maths teaching, learning and support and keeping up to date with the latest developments within the maths support community. Focus on quality enhancement.</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Professional Values: <b>V1</b></p> <p>Respect individual learners and diverse groups of learners.</p>	<ul style="list-style-type: none"> <li>• Awareness of <ul style="list-style-type: none"> <li>○ specific learning differences and difficulties (SpLD),</li> <li>○ cultural diversity,</li> <li>○ dyscalculia and/or maths anxiety,</li> <li>○ the needs of mature students,</li> <li>○ the maths background of non-traditional entry students,</li> <li>○ the needs of remote learners,</li> </ul> <p>applying this knowledge to tailor/adapt own practice when planning and delivering 1-1 support sessions or lectures/workshops</p> </li> <li>• Access CPD, or read the literature, on inclusivity and diversity, and apply this knowledge</li> <li>• Work in collaboration with SpLD specialist advisers, run joint advice sessions</li> <li>• Participate in access summer schools and other projects aimed at widening participation</li> <li>• Ensure accessibility of maths and statistics support resources</li> <li>• Provide CPD for colleagues on the implications of dyscalculia or maths anxiety on student learning</li> <li>• Create and/or disseminate materials in a variety of formats to promote your maths support provision</li> <li>• Learn new software applications to be able to support students from different backgrounds</li> <li>• Collaborate with course lecturers to plan embedded sessions and produce accessible resources</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Professional Values: <b>V2</b></p> <p>Promote engagement in learning and equity of opportunity for all to reach their potential.</p>	<ul style="list-style-type: none"> <li>• Participate in access summer schools and other projects aimed at widening participation or aiding transition to higher education</li> <li>• Create and/or disseminate materials in a variety of formats to promote your maths support provision</li> <li>• Set up or contribute to social media or other online platforms to represent your provision locally, regionally or nationally</li> <li>• Engage with students or the student union to nurture champions for your provision at various levels</li> <li>• Host informal learning sessions to encourage participation and engagement (eg: maths café, problem solving groups)</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p><b>Professional Values: V3</b></p> <p>Use scholarship, or research, or professional learning, or other evidence-informed approaches as a basis of effective practice.</p>	<ul style="list-style-type: none"> <li>• Access CPD, or read the literature, on topics such as: <ul style="list-style-type: none"> <li>○ assessment and feedback,</li> <li>○ embedding academic skills,</li> <li>○ inclusivity and diversity,</li> <li>○ service evaluation and impact,</li> <li>○ pedagogy and learning styles,</li> </ul> and use this to inform own practice in maths support </li> <li>• Advise lecturers on curriculum design that incorporates maths and statistics support</li> <li>• Devise new or modified systems for gaining user feedback, and evaluate the responses</li> <li>• Keep records of student visits to quantify and evaluate the uptake of your maths support provision</li> <li>• Publish the analysis of the effectiveness of your service provision to the wider maths support community</li> <li>• Attend conferences that focus on the scholarship of maths teaching, learning and support</li> <li>• Contribute to policy relating to maths and statistics support at local, regional, and/or national level</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Professional Values: <b>V4</b></p> <p>Respond to the wider context in which higher education operates, recognising implications for practice.</p>	<ul style="list-style-type: none"> <li>• Collaborate with course lecturers on developments in curriculum design that are being steered nationally (e.g. foundation courses, modern apprenticeships), and identify how best to incorporate and embed mathematics and statistics skills support</li> <li>• Awareness of the needs of non-traditional students, adapting provision accordingly</li> <li>• Awareness of the maths support needs of widening participation students, organising provision accordingly</li> <li>• Contribute the outcomes of the maths support service evaluation to wider institutional quality review</li> <li>• Identify project or development work relevant to maths and statistics support through collaboration with other university services (for example, initiatives relating to employability)</li> <li>• Engage with a national maths support network (eg: <b>sigma</b>, SMSN, IMLSN) in order to develop awareness of emerging issues and how to respond to new challenges</li> <li>• Actively engage with policy relating to mathematics and statistics support at local, regional or national level</li> </ul>

UKPSF Dimension	Indicative areas of Maths Support activity
<p>Professional Values: <b>V5</b></p> <p>Collaborate with others to enhance practice.</p>	<ul style="list-style-type: none"> <li>• Collaboration with course lecturers on developments in curriculum design that incorporates and embeds mathematics and statistics skills support</li> <li>• Work with faculties/departments to identify emerging needs for maths support, for example if regulatory bodies impose certain standards/expectations in quantitative skills</li> <li>• Plan and implement diagnostic testing that meets the specific skills expectations of students on specific courses, and discuss with course leaders how to respond to identified needs</li> <li>• Share own knowledge/awareness of the needs of students with dyscalculia or maths anxiety with course teams, and provide appropriate support</li> <li>• Summarise the results of maths support service evaluations and share with wider stakeholders (course teams, faculty management, student union) for action-planning</li> <li>• Provide mentoring/consultancy to other institutions to evaluate and develop their maths support provision or train new maths support tutors</li> <li>• Contribute to events organised by your national professional maths support network (e.g. <b>sigma</b>, SMSN, IMLSN) and glean ideas to implement in your own service</li> <li>• Contribute to collaborative development projects (e.g. creation of resources for <i>mathcentre</i> or <i>statstutor</i>, <b>sigma</b> special interest groups) and use this to inform your own practice</li> </ul>

# References and further reading

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Further resources for those working in mathematics and statistics support are available at:

[www.sigma-network.ac.uk](http://www.sigma-network.ac.uk)

[www.mathcentre.ac.uk](http://www.mathcentre.ac.uk)

[www.statstutor.ac.uk](http://www.statstutor.ac.uk)

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