Classroom Quality Standards in gifted and talented education: Layer 1

	Features	Prompts	Evaluation of practice in relation to providing challenge for all learners			Evaluation of practice in relation to providing challenge for G&T learners			Evidence to support self-evaluation of practice in relation to G&T learners
			Unsure	Quite well	Very well	Unsure	Quite well	Very well	
1	**Conditions for learning**	▪ How well do learning conditions ensure that learners are healthy and safe and enjoy their learning? ▪ How well is learning linked to the working world beyond the classroom allowing learners to make informed connections and decisions for learning? ▪ How well are learners enabled and challenged to demonstrate, use and develop their gifts and talents to make a positive contribution?							
2	**Development of learning**	▪ How well is an understanding of the development of learning applied and used to support pupils' learning? ▪ How well are learners enabled to take charge of their learning and become self-regulating?							
3	**Knowledge of subjects and themes**	▪ How well are knowledge and skills of subjects and themes used to stimulate and challenge learners? ▪ How well is learning developed through specific subject knowledge and skills? ▪ How well is the curriculum adapted to address the needs of different learners?							
4	**Understanding learners' needs**	▪ How well are the emotional and social needs of the learner identified and addressed to raise achievement? ▪ How well are barriers to learning identified and removed? ▪ How well is learners' progress assessed, monitored and evaluated in order to raise achievement? ▪ How well are the training and learning needs of teachers and classroom assistants identified in order that they meet the needs of learners?							
5	**Planning**	▪ How well does planning build on learners' prior knowledge and attainment? ▪ How well is planning used to improve outcomes for all learners? ▪ How well is a range of different teaching and learning styles and strategies used in planning activities to ensure extension, enrichment and progression?							
6	**Engagement with learners and learning**	▪ How well are teaching and learning skills and resources deployed to extend, inspire and challenge learners? ▪ How are available organisational structures and settings within the school used to identify potential and raise achievement?							

7	**Links beyond the classroom**	▪ How well are learning, and opportunities for learning beyond the classroom encouraged, known about, built upon, and celebrated? ▪ How well are parents and carers included in supporting and developing their children's learning?							

Classroom Quality Standards in gifted and talented education: Layer 2 – Mathematics

Feature and Prompts	Entry	Developing	Exemplary
1. Conditions for learning How well do learning conditions ensure that learners are healthy and safe, and enjoy their learning?	G&T learners enjoy their education, in a safe and healthy environment which is free from adverse peer pressure. Stimulating and well-organised classrooms support achievement. G&T learners show self-discipline and respect for others.	G&T learners are highly motivated, and feel confident and secure in sharing their experiences with others. They evaluate and influence their own learning, and apply themselves well to achieve good progress.	G&T learners confidently develop new ideas and ways of working which help them achieve excellent progress. They are able to direct their own learning and achieve excellent progress, free from institutional, social or emotional pressure on their performance. Creative and lateral thinking routinely informs their learning.
	Pupils engage in mathematics as an interesting and worthwhile activity in familiar contexts.	Pupils engage in mathematics as an interesting and worthwhile activity in increasingly unfamiliar contexts.	Pupils engage in mathematics as an interesting and worthwhile activity in unfamiliar and complex contexts.
	Exemplification Classroom ethos: Is it cool to succeed in mathematics?	**Exemplification** Classroom ethos: Is it cool to succeed in mathematics?	**Exemplification** Classroom ethos: Is it cool to succeed in mathematics?
How well is learning linked to the working world beyond the classroom allowing learners to make informed connections and decisions for learning?	Activities and tasks enable G&T learners to link their learning in a relevant way with the practical world outside the classroom. They begin to consider the economic, ecological, social and moral implications of aspects of life and learning regularly.	G&T learners are prepared well for adult life. Learning is regularly linked to the world of work. They evaluate the wider implications of aspects of their learning on others and regularly consider the global implications of social, political, ethical and moral decision making in their learning.	G&T learners successfully apply their learning to study global problems. They contribute productively to projects linked to the ecological and economic world. They routinely and critically analyse their learning in relation to social, political, ethical and moral matters.
	Pupils solve problems from real-life contexts where the mathematics is explicit. Pupils are encouraged to make mathematical links within the subject, across other subjects, and outside the classroom.	Pupils solve problems from real-life contexts where pupils choose the mathematics required to solve the problems. Pupils identify mathematical links within the subject, across other subjects, and outside the classroom.	Pupils solve problems from complex contexts which require independent research to obtain solutions. They evaluate their results and interpret them for a specific audience. Pupils identify and develop mathematical links within the subject, across other subjects, and outside the classroom.

	Exemplification Are meaningful contexts explored? Economic, financial, business, engineering, scientific, ecological, etc…	**Exemplification** Are meaningful contexts explored? Economic, financial, business, engineering, scientific, ecological, etc…	**Exemplification** Are meaningful contexts explored? Economic, financial, business, engineering, scientific, ecological, etc…
How well are learners enabled and challenged to demonstrate, use and develop their gifts and talents to make a positive contribution?	G&T learners have extended opportunities to experience a wide and diverse range of activities. They explore, reflect upon and discuss their work. They contribute positively to lessons and to the school community. Achievement and commitment in relation to past performance is recognised.	Opportunities are provided for every G&T learner to develop identified abilities and skills and to discover new areas of talent. The classroom ethos values creativity, and encourages learners to use it to improve achievement.	There is an expectation that every G&T learner will have the highest aspirations for themselves and for the school community. Opportunities ensure G&T learners consistently demonstrate exceptional achievement.
	Pupils use precise mathematical language to share their knowledge and understanding with their peers. Pupils have regular, structured opportunities to reflect on their learning and identify curricular targets for development.	Pupils use precise mathematical language to share reasoning and develop convincing arguments with their peers. Pupils evaluate their learning regularly and reflect on this in relation to mathematical efficiency.	Pupils use precise mathematical notation and conventions to communicate their mathematical thinking. Pupils evaluate their learning and identify questions which challenge and extend their knowledge of mathematics.
	Exemplification Are errors and misconceptions used as learning opportunities?	**Exemplification** Are errors and misconceptions used as learning opportunities?	**Exemplification** Are errors and misconceptions used as learning opportunities?

2. Development of learning How well is an understanding of the development of learning applied and used to support pupils' learning?	Activities and tasks support personalised learning by identifying and providing for each G&T learner's specific ways of learning. There is provision for collaborative working, individual study and teacher-directed problem-solving. Teachers and other experts model and demonstrate effective ways to learn.	G&T learners are encouraged and supported to explore alternative ways of learning, and to develop both team and leadership skills. Regular opportunities are provided to use thinking and problem-solving skills, as well as creative and interpretative approaches.	There is strong understanding of how G&T learners achieve excellent performance and of the range of activities and techniques which contribute to high attainment. There is widespread and sustained use of critical thinking skills and problem-solving together with regular opportunities to discuss, explain and justify their reasoning. Learners select and make decisions about which strategies to use to improve their achievement.

	Mathematical thinking and enquiry is modelled by teachers. Pupils are encouraged to look for generalisations, extensions, applications and links within the subject. Pupils identify the mathematical techniques required to solve a problem and justify their reasoning. Pupils explore other solutions and compare each other's solutions to confirm results and to identify efficient working. Pupils model and demonstrate in class.	Mathematical thinking and enquiry is instinctively modelled by teachers. Pupils look for generalisations, extensions, applications and links within the subject. Pupils use their mathematical knowledge to solve problems in unfamiliar contexts. Pupils model situations explaining and justifying their approach. Pupils work independently on an open task.	Mathematics teaching and learning is increasingly a collaborative exploration between teacher and pupils. Pupils generalise their solutions to a wider context. Pupils model increasingly complex situations explaining and justifying their approach to a specific audience. Pupils experience mathematics beyond the constraints of the National Curriculum.
	Exemplification Peer-assessment.	**Exemplification**	**Exemplification**
How well are learners enabled to take charge of their own learning and become self-regulating?	G&T learners work independently and in groups. They develop an understanding of their personal learning preferences, as well as their strengths and weaknesses. They are given regular opportunities to reflect upon and discuss ways to influence and improve their learning.	There are increased opportunities for learner independence. G&T learners use initiative and independent thinking to deviate creatively from planned activity. Established self-review of all aspects of progress in learning informs the setting of personal targets.	G&T learners follow their own lines of enquiry and critically evaluate their own learning. They contribute to improving their curriculum and to promoting the learning of others.
	Pupils reflect on their working in mathematics and use a range of strategies and approaches to confirm the validity of their results.	Pupils reflect on their working in mathematics and use a range of increasingly enterprising and creative strategies and approaches to confirm the validity of their results.	Pupils reflect on their working in mathematics and use a range of increasingly enterprising and creative strategies and approaches, including research into new areas of mathematics, to confirm the validity of their results.

	Exemplification Pupils adopt a questioning approach to mathematical activity. Pupils demonstrate their mastery of a topic by producing similar questions, for example for their peers.	**Exemplification** Pupils adopt a questioning approach to mathematical activity. Pupils' questions extend the mathematics to greater depth or other areas.	**Exemplification** Pupils adopt a questioning approach to mathematical activity. Peer-assessment. Pupils demonstrate their mastery of a topic by producing related, original questions, for example for their peers.

3. Knowledge of subjects and themes How well are subject knowledge and skills of subjects and themes, used to stimulate and challenge gifted and talented learners?	G&T learners are motivated by confident, enthusiastic communication of the subject or theme using specialist guidance and support.	G&T learning is underpinned by secure subject knowledge and understanding of the subject or theme which enables challenging learning targets to be set. Professionals with more limited subject or theme knowledge and skill receive coaching to sharpen their skills and strengthen the pool of expertise.	G&T learners are inspired to apply intellectual initiative and creative interpretation to subject study. Teachers' engagement with wider professional networks strengthens and extends subject expertise and knowledge of learning themes.
	Teachers have a depth of understanding of mathematics and are sufficiently confident in their knowledge and pedagogy to inspire and challenge learners.	Teachers have a depth of understanding of mathematics and are sufficiently and increasingly confident in their knowledge and pedagogy to inspire and challenge learners.	Teachers are continually developing their own interest in mathematics to secure an increasing depth of understanding. They are confident in their knowledge and pedagogy to inspire and challenge learners and other teachers.
	Exemplification	**Exemplification**	**Exemplification** Teachers share good practice and resources that motivate and challenge learners. School, mathematics department and/or individual teachers are active members of professional organisations.
How well is learning developed through specific-subject knowledge and skills?	G&T learners' subject knowledge and skills are identified, and then enhanced, through linking with other subjects and with experience from their own lives.	G&T learners' proficiency is strengthened by the use of higher-order concepts and terminology in reading, researching, and talking about the subject.	Clear progressions and connections between subjects are identified and adapted to G&T learners' needs and interests. G&T learners have frequent opportunities to demonstrate expert application of specific skills and knowledge, and this is supported through excellent coaching.

	Learners are sufficiently secure in their knowledge and understanding of mathematical concepts and processes to ask questions. Pupils are encouraged to make mathematical links within the subject, across other subjects, and outside the classroom.	Learners are sufficiently secure in their knowledge and understanding of mathematical concepts and processes to pose critical questions to extend their current knowledge. Pupils identify mathematical links within the subject, across other subjects, and outside the classroom.	Learners are sufficiently secure in their knowledge and understanding of mathematical concepts and processes to appreciate applications of mathematics beyond the classroom. Pupils have the opportunity to work collaboratively with peers from other years and (or) organisations. Pupils identify and develop mathematical links within the subject, across other subjects, and outside the classroom.
	Exemplification	**Exemplification** Personal research of own questions relating to mathematics.	**Exemplification**
How well is the curriculum adapted to address the needs of different learners?	Specific needs and interests of G&T learners are identified and built on, skilfully using matched and optimum pupil groupings, comprehensive resources and a wide range of activities.	Comprehensive resources, challenging subject content and effective use of ICT develop and extend G&T learners' subject skills and knowledge.	G&T learners confidently use subject-specific and cross-curricular skills in independent research which is well supported by resources.
	Pupils use a range of mathematical tools within a variety of activities extending prior knowledge and interest. Groupings are varied allowing pupils to work in mixed-ability and high-ability groups. Roles within groups are discussed as part of the learning.	Pupils use mathematics in a range of contexts to extend their prior knowledge and interest with increasing technical demand.	Pupils research an area of mathematics that interests them, pushing beyond the boundaries of the curriculum.
	Exemplification	**Exemplification** Content-free software.	**Exemplification** Use of Internet for research.

4. Understanding learners' needs How well are the emotional and social needs of the learner identified and addressed?	Accurate identification of G&T learners is informed through a wide variety of provision experiences. Learners' academic, social and emotional needs are recognised and met in a sensitive way. Underachievement is tackled and exceptional ability and (or) talent provided for through effective progress tracking and staff consultation.	Identification is made against criteria which aid discovery of previously unrecognised or latent ability and talent. Identification is shared with learners and their parents and carers.	Identification and review of G&T learners use multiple criteria, performance and value-added data. Provision and its impact are regularly reviewed by professionals working collaboratively.
	Teachers recognise the possibility of underachievement by gifted mathematicians, particularly on more routine and less-demanding activities in the subject. There is sufficient differentiation to challenge the highest attaining pupils in every mathematics group.	Exceptional ability in mathematics is recognised and valued. Learners with exceptional ability still feel part of the class and are encouraged to contribute.	No amplification required.
	Exemplification	**Exemplification** Learners with exceptional ability still feel part of the class, and are encouraged to contribute to general discussions.	**Exemplification**
How well are barriers to learning identified and removed?	There is a comprehensive and inclusive response to the needs of each learner and recognition that there may be outstanding aptitude in one area and difficulty in others. Influences on the G&T learner from outside the school are understood and steps taken to minimise negative factors. Cultural differences are recognised and respected.	There is routine identification of dual- or multiple-exceptionality. There is targeted support for groups under-represented as G&T learners (for example LAC, EAL and BME). Mentoring G&T learners' supports promotion of positive self-worth.	Comprehensive strategies counteract adverse social, organisational, and curriculum pressures. Specialised, focused support is provided for G&T underachievers and those with exceptional ability or talent.
	Learners are encouraged to persevere recognising that success in mathematics is often not without struggle. Teachers and learners recognise that risk-taking is important in doing mathematics.	No amplification required.	No amplification required.
	Exemplification Opportunities are provided for learning from mistakes to eliminate misconceptions	**Exemplification**	**Exemplification**

How well is gifted and talented learners' progress assessed, monitored and evaluated to raise achievement?	Assessment and evaluation of performance is learner-, as well as teacher-led. It is recognised that G&T learners need a different starting point for their work. When learners change schools, classes, settings or teachers there is good recognition of prior learning and good practical use is made of transfer information. Assessment and evaluation outcomes are made known to G&T learners and their parents and carers.	G&T learners assess the impact of tasks and activities on development of their knowledge and understanding. Potential and actual performance is evaluated in all learning contexts. G&T learners self-assess, making use of oral and written feedback. Their self-assessment informs planning and setting of challenging future targets.	Classroom practice regularly requires G&T learners to reflect on progress against their targets and to determine the direction of their own learning. Assessment uses predictive data (local and national) from other subject areas.
	Pupils have a clear understanding of the level they are working at and are given regular opportunities for peer- and self-assessment. Oral feedback is supported by mathematical dialogue. Summative assessment is used to set curricular targets by pupils.	Pupils have a clear understanding of the level they are working at and are given regular opportunities for peer- and self-assessment to identify further progress. Pupils lead mathematical dialogue in the classroom to support peer- and self-assessment. Pupils have a role in planning areas for development.	Pupils use assessment data to identify and plan for their own curricular targets.
	Exemplification	**Exemplification**	**Exemplification**
How well are the training and learning needs of teachers and classroom assistants identified so that they can meet the needs of learners?	The CPD needs of adults are met by closely matching training and coaching opportunities to the identified needs of G&T learners, using peer observation, professional consultation and mentoring. All professionals seek opportunities to identify and develop professional knowledge and expertise.	Professional knowledge and subject expertise are shared in designing coaching and professional development opportunities, including support in induction. Collective groups of staff have a shared understanding of G&T learners' needs.	Professionals share their knowledge (including that from action research) and their analysis of what is good G&T practice. This contributes to enhanced provision for G&T learners in a 'community of learning' of teachers, parents and carers and pupils.
	Teachers engage in discussions relating to mathematical problems and pedagogy. Opportunities are created to develop good practice through peer observation.	No amplification required.	No amplification required.

	Exemplification Teachers regularly attend national subject association annual conferences.	**Exemplification**	**Exemplification**

5. Planning How well does planning build on gifted and talented learners' prior knowledge and attainment?	Past learning experiences and performance of G&T learners are systematically analysed in consultation with learner and parents and carers. Future targets for development are planned to meet identified needs.	Professional collaboration in the systematic exchange of information and transition data ensures that G&T learners' progression in learning is carefully planned for, particularly whenever a transfer or change of setting takes place.	Learning targets are planned to G&T learners' stage of learning, rather than chronological age. Teachers and other adults routinely share strategies to improve meeting learner needs and well-being.
	No amplification required.	No amplification required.	No amplification required.
	Exemplification	**Exemplification** Master classes with link primary schools help identify G&T mathematics pupils.	**Exemplification**
How well is planning used to improve outcomes for all learners?	Assessment and evaluation of achievement across all aspects of learning inform future planning and support. Clear objectives for learning determine a balanced range of activities, which are focused on improving outcomes and which reflect individual learners' interests, learning styles and potential.	Planning for G&T learners assures progressive development of higher-order learning skills, as well as space and opportunity for private enquiry. There is breadth and variety for learners to reveal previously unrecognised gifts and talents.	Planning is provisional and flexible to the progress and style of learners. Resources challenge G&T learners to explore new areas, develop new skills, and to cross subject disciplines.
	Pupils have a clear understanding of the level they are working at and are given regular opportunities for peer- and self-assessment. Oral feedback is supported by mathematical dialogue. Summative assessment is used to set curricular targets by pupils and teachers.	Pupils work independently on an open task.	Pupils identify and develop mathematical links within the subject, across other subjects, and outside the classroom. Pupils research an area of mathematics that interests them.
	Exemplification Mathematics challenge papers and higher-level test papers are used to identify expectations of high-attaining pupils in mathematics.	**Exemplification**	**Exemplification**

How well is a range of different teaching and learning styles and strategies used in planning activities to ensure extension, enrichment and progression?	Activities for G&T learners offer increasing complexity and depth, and add breadth through a range of content, tasks and resources. Tasks are qualitatively different, rather than merely longer.	Activities for G&T learners are planned to accelerate in pace, and to expand their understanding of what makes for effective learning. There are structured opportunities to experiment and take risks. Lesson plans make reference to personalised tasks for G&T learners.	Activities are planned to prompt G&T learners to collaborate and innovate. G&T learners are involved in planning and allocating their own tasks based on an evaluation of holistic learning needs.
	Teachers' mathematical expertise and skilled pedagogy exploit rich tasks to encourage higher-order questioning, dialogue and critical thinking. Tasks are differentiated according to context, familiarity, independence, and technical demand	Teachers use questioning and dialogue to challenge learners and create opportunities for higher-level critical thinking and generalisation. Teachers create opportunities for learners to discuss and challenge each other's mathematical thinking and learning. Tasks are differentiated according to context, familiarity, independence, and technical demand.	Learners use questioning and dialogue to challenge their own and others' logic and reasoning. Pupils have the opportunity to work collaboratively with peers from other year groups and (or) organisations. Pupils research an area of mathematics that interests them. Tasks are differentiated according to context, familiarity, independence, and technical demand.
	Exemplification	**Exemplification**	**Exemplification**

6. Engagement with learning and learners How well are teaching and learning skills and resources deployed to extend, inspire and challenge gifted and talented learners?	Tasks and activities for G&T learners have clear learning objectives and involve focused discussion and questioning. Teachers and learning assistants deploy a wide repertoire of skills and resources (including ICT) to raise G&T achievement.	Activity and task intentions are clear and regularly reinforced. There is a high level of productive and stimulating interaction between and with G&T learners, including challenging use of language. A personalised learning approach uses focused intervention, based on an understanding that G&T learners are all different and therefore require a variety of pace, depth, and complexity of task.	Lesson and activity intentions are positively influenced by learners and teaching assistants who are proactively involved in planning and lesson delivery. Secure and sustained processes assure the development and sharing of new knowledge about how G&T learners learn. Sustained progress, attainment and achievement for G&T learners are secured above local and national benchmarks.

	Teachers' mathematical expertise and skilled pedagogy exploit rich tasks to encourage higher-order questioning, dialogue and critical thinking. Tasks are differentiated according to context, familiarity, independence, and technical demand.	Teachers use questioning, and dialogue to challenge learners and create opportunities for higher-level critical thinking and generalisation. Teachers create opportunities for learners to discuss and challenge each other's mathematical thinking. Tasks are differentiated according to context, familiarity, independence, and technical demand.	Learners use questioning, and dialogue to challenge their own and others' logic and reasoning. Tasks are differentiated according to context, familiarity, independence, and technical demand.
	Exemplification Differentiation by outcome. Writing own questions.	**Exemplification** Cognitive conflict.	**Exemplification**

How are available organisational structures and settings within the school used to identify potential and raise achievement?	Pupil grouping is informed by ongoing assessment and is planned to provide G&T learners with challenge and support in peer interaction. Groups are structured to enable effective teacher and teaching assistant engagement and collaboration. There are opportunities for G&T learners to develop team and leadership roles.	Grouping is flexible and creative (for example not year-group specific) and enables learners to join subject groups which promote optimum learning**.**	Grouping is designed around G&T learners' identified needs. Use is made of other learning settings (for example other schools or colleges) when these can provide additional opportunities. Group dynamics are well established, so that G&T learners quickly organise learning tasks. They elect and support leaders and team members.
	No amplification required.	No amplification required.	No amplification required.
	Exemplification	**Exemplification**	**Exemplification**

7. Links beyond the classroom How well are learning, and opportunities for learning beyond the classroom encouraged, known about, built upon, and celebrated?	G&T learners access homework that extends interests and raises achievement. Those with particular talents or interests are informed about and supported in accessing specific activities, events or opportunities. A variety of approaches, notably ICT, is used to help G&T learners extend their learning beyond the classroom.	Links between in- and out-of-school activities ensure coherent and broadening experience. G&T learners are helped to explore new and wider learning and are informed about regional and national opportunities (for example summer schools). Those who would benefit are supported to attend.	Sustained and secure links are established and maintained with external agencies. These links facilitate an extension of student voice, and support achievement of 'positive contribution' by G&T learners both within the school and wider community.
	Enterprising use of ICT encouraged with content-free mathematical software such as spreadsheet, graph-plotter, and dynamic geometry encouraged for individual enquiry.	Involvement in regional mathematics master classes.	
	Exemplification Involvement in UKMT Mathematics Challenge activities for groups and individuals.	**Exemplification** Participation in YG&T Summer Schools	**Exemplification** Pupils progress to subsequent rounds of the UKMT Mathematics Challenge to compete for mathematics Olympiad places.
How well are parents and carers included and supported in developing their children's learning?	Parents and carers of G&T learners have regular opportunities to discuss the progress and achievement of their children both in and out of school. Ways are suggested in which the home and school may contribute, jointly support, and develop learners' progress.	There is an induction programme for the parents and carers of G&T learners. Links are in place to engage and support parents and carers who are hard to reach. These links ensure that learners do not miss out on opportunities both within and outside school.	The insights and skills of G&T learners' parents and carers are identified and used creatively within specific learning settings to support their children. Strong links with the school including parental networks, workshops, and services are promoted and tailored to achieve optimum levels of support.
	No amplification required.	No amplification required.	No amplification required.
	Exemplification	**Exemplification**	Exemplification