2023

Rush Green Primary School

Teaching & Learning

THE VISION FOR HIGH QUALITY FIRST TEACHING AT RUSH GREEN PRIMARY SCHOOL

We believe that good and better practice can be broken down into 3 areas for focus; 'PLANNING, DELIVERY and ASSESSMENT.' Teachers, Teaching Assistants and the Children must be a part of this process in order to ensure that efficient and effective learning takes place in the classroom.

OUR SHARED VISION IS: that all children at Rush Green Primary will receive an outstanding education so that they are given the knowledge, skills and tools that they need to thrive in an ever-changing global society.

IN OUR SCHOOL HIGH STANDARDS MEANS: that staff and pupils work together to produce the best of themselves irrespective of task, undertaking or endeavour.

IN OUR SCHOOL HIGH EXPECTATIONS MEANS: that good is not good enough and that as staff and pupils, we always expect the best of ourselves and from others.

PLANNING

Planning at pupil level involves the use of medium-term plans which are broken down to daily sessions. The planning process involves the children, through assessment for learning during and after the lesson. Lesson direction must ultimately lead towards the lesson focus and this is assessed through the use of success criteria. The needs of the class must be taken into account and this is achieved through adapting tasks and selecting suitable resources to support learning. Learning resources are selected from a range of sources and teachers must not solely rely on published schemes such as Abacus for day to day planning as these schemes are designed for the average ability child, have expectations which are too low and do not provide enough opportunities for using and applying.

Where possible, teachers should plan in opportunities for teacher modelling and for showcasing children's work as exemplar materials. This could be examples of work from previous years.

Pace of learning is defined as a 'clear and focussed determination to reach the end goal of the lesson.' Lessons are expected to be purposeful and make use of every learning opportunity. When planning, it is important to ensure that extension opportunities are planned for and that learning time is not lost through needless activities or unplanned slippage. Where possible ensure that the children understand how their learning links to previous lessons in the unit, other subjects and the world in general and that this is reinforced through activities which enable the children to apply their skills.

Teachers that work with sets must also plan for the ability range within their set.

After the lesson, any children requiring further input will have their needs met by the teaching assistant or teacher, preferably in the next lesson. Ongoing verbal feedback is vital between pupil/teacher, pupil/teaching assistant and teaching assistant/teacher. Pupil feedback to teaching staff can be in a range of different ways and is included in the assessment section of this policy.

If a third of the class are unable to grasp the concept taught then the lesson should be repeated. Teachers may also have to plan discrete and individual lessons to address any misconceptions or to fill gaps in learning. For example, particular weaknesses in spelling.

Typical Planning Meetings

A typical planning meeting should involve year group teams using medium term plans to identify learning objectives and then work together to find tasks and activities that meet the objectives and that cater for a range of needs, including the most able. Additional activities which provide stretch and challenge and scaffolded activities must also be planned for as necessary. Discussion should follow around how the children could use and apply what they have learned so that the children are not simply practising skills over and over again, but have the opportunity for deeper learning by seeing how to apply their newly learnt skills. When teachers make their own resources, they must ensure that there are no misspellings or grammatical errors.

In our planning:

- We use the agreed planning formats
- We include the learning objective
- Objectives are taken from the National Curriculum
- Success criteria are used to measure progress and are included in lesson plans
- Planning includes ideas for adapting lessons for all abilities and include opportunities for additional challenges in class
- Expectations are high
- Time is planned in to a lesson for children to edit/correct their work
- Time is planned in to a lesson for reflection of work against the success criteria
- Assessment informs planning
- Planning must be flexible to the needs of the children and adapted to suit needs (it is not acceptable to blindly follow a plan where planned lessons do not challenge pupils)
- Planning must allow opportunity for mastery, which will allow for the development of skills and/or knowledge over time
- The 'Guru Model' is used to ensure that our curriculum has both depth and breadth of coverage
- AfL strategies should be used throughout lessons to ensure the learning is adequately matched to the needs of the pupils.
- Planning must be seen as a 'working document' which should be adjusted to match the needs of groups of children/individuals
- Other adults should have input into planning
- Other adults should be used as a resource and planned for
- Planning should build on previous knowledge and make links to the world around us
- Planned activities should be varied – avoid over-use of notebook led lessons which can lead to very didactic teaching. Reams of text should not be copied and pasted into notebooks. It is inaccessible to learners. Teachers should use their professional judgement when creating Notebooks, but a rough guide of 3-5 slides should be sufficient for most lessons
- Planning (held over from year to year) must be adjusted to suit the needs of the group/class/year group
- Planning should make use of a range of available resources
- Computing should be embedded into other lessons as well as discrete weekly computing sessions
- Opportunities for practising the basic skills of mathematics, reading and writing must be provided for in the vast majority of all lessons
- Extension activities must be provided (these are additional activities which further challenge children)
- Planning must be completed and on the system by the Friday before the week planned for
- Planning must be clear and detailed enough to enable any teacher to teach from them, for instance at short notice
- Where appropriate, homework (adapted for different abilities) should consolidate learning done in school or provide an opportunity for pupils to research future learning.

DELIVERY

At Rush Green we recognise the importance of ensuring that lessons are flexible and that planning, whilst giving the focus for a lesson, should not be so rigidly adhered to that the differing needs of the children in a given lesson and in a given class are not met. Where this is the case, teachers should abandon the lesson plan for the day and provide different activities that enable the pupils' learning needs to be met. This could be for instance if the children are finding work too easy or too hard. This must be recorded on planning and adjustments made to future planning as appropriate. BE BRAVE!

At Rush Green we are committed to ensuring that each child has the best learning opportunity possible and we ensure that this is done through constantly assessing progress and adjusting to requirement. Adults must be mobile in order for high quality assessment to take place. In our experience, the best form of assessment is 'on the hoof,' also known as 'hot marking.'

We must ensure that pupils' spoken and written language is corrected as appropriate and that there are no lost opportunities for the practising of basic skills, although this should not distract from the aim of the lesson.

In a lesson:

- We share the learning objective (this does not have to be at the start of the lesson)
- We ensure that the learning objective relates to the knowledge that the children will gain NOT the vehicle it is delivered in (for instance, to write items for a sandwich in a list – should be to write a list of nouns using commas and the word 'and' to separate them)
- We explain how the learning will be useful or how it builds on what the children know
- We refer to and share examples of good work and discuss what it is that makes it effective
- We share (or devise with the children the success criteria for each lesson
- Time is given at the beginning of the lesson to allow children to read teacher feedback and edit/correct their work
- Work must be adapted for different ability levels – where appropriate, children can select their own tasks to complete
- Extension activities must be provided to offer further stretch and challenge after the main activity is completed
- Where possible, start the lesson with a hook

Good and outstanding practice is to constantly assess during the lesson. This can be done through 'on the hoof' marking which ensures that the teacher and teaching assistant fully understand the needs of the class and are able to act upon those needs immediately.

- Classroom furniture should be arranged to enable access to pupils through 'on the hoof' marking
- Progress is checked by assessment against the learning objective and success criteria
- Progress is checked during the activity and after the activity to ensure quality learning. Teachers sat at a chair or desk are unable to move around the room to do this
- Good use of adults within the classroom, focuses teaching on children who need help with learning – this is not the same as working with the SEN. ALL children must have access to high quality support and all children MUST have access to the teacher (e.g. TA must not only work with SEN children all of the time)
- Children should be used to explain/share their work with others
- There is always follow up when children struggle in a lesson this would, ideally, be done during the lesson but it should, at least be picked up on in the next lesson
- Expectations are high, although children are allowed to take risks with their work (eg. try themselves if they are not quite sure and see how they get on – if still unsure then ask for help)
- Children have the opportunity to self/peer assess against the success criteria
- Children should have the opportunity to edit and redraft their own work to improve it
- A range of resources are used to ensure good pace and also to relieve 'interactive whiteboard' for those who learn in different ways
- There are opportunities for children to partake in mini whiteboard work, partner work and group/table work depending on the activity
- Activities are purposeful and add to, not detract, from the lesson
- Teachers consider the flow of children around the room and ensure that resources are to hand rather than waste learning time through handing out or collecting in resources
- Thinking time is allowed where children discuss possible answers to questions
- (studies show we usually allow only approx 20secs before demanding the answer!)

- Questions are differentiated by ability and are also focussed on the children who may not have their hand up
- Questions are followed up with further questions
- Temporary displays (eg. sheets of sugar paper) of the main points of the lesson or examples given by the children should be used to capture learning and displayed as prompts around the room
- Teachers should be wary of slippage – especially when time to deliver the curriculum is already tight
- Lessons should start promptly and finish on time
- The plenary may (for instance in science) be where the teaching point is delivered; be a summary of learning in the lesson; be a drawing together of ideas; an opportunity for pupils to feedback on what they have learned to others and/or an opportunity to assess
- Teachers must take care that once pupils have grasped concepts, they are not taught to death through pages and pages of the same work. Use resources around the school, video clips etc to ensure that pupils are given real and interesting opportunities to apply their new skills/ knowledge.

DAY TO DAY ASSESSMENT

This area in the teaching and learning policy is key in that it enables us to really know our children and make an impact on their learning though planning a delivery which meets their needs and sets next steps. Our assessment must be useful and impact on learning. In order to do this, children must have the opportunity to read teacher comments and act upon them. Further dialogue between the teacher and pupils, through feedback marking, provides opportunities for more challenge and deeper learning.

Good and outstanding practice would be where teachers and support staff move children on through a clear dialogue in the marking. Marking should be purposeful!

Where teachers struggle to think of comments to write, this is either because the work set was not challenging enough, or they have been successful in meeting the learning objective at the taught level

Day to day marking should identify what the child has done well, so that this can be repeated and what needs to be improved and how it can be improved. Further comments for challenge should also be included.

Opportunities to correct spelling and grammar should be taken as this reaffirms what has been taught elsewhere.

- Assessment will be against (although not exclusively) the success criteria/learning objective
- We will refer to the success criteria in our feedback to the pupils and ensure that they understand what they have done well and why, and also what they need to improve and why
- We will provide next steps in our marking to help children develop a deeper understanding of their learning, reflect and/or provide more challenge
- We will use a range of strategies to assess children's learning, including verbal feedback, answers on whiteboards etc (thumbs up / thumbs down)
- Teaching assistants will mark work for the children they work with, explaining the quantity of support given and then relay this to the teacher
- Where appropriate for communication purposes, teachers and teaching assistants should both annotate planning to show next steps for groups/individuals – this should always be followed up, particularly when verbal feedback has been given
- Assessment can take place at any time during a lesson through a quick check of work against the success criteria, peer assessing a peer's work, or a short test etc. Those children not meeting the success criteria then have an opportunity to readjust or the teacher can alter the lesson
- **Children should not be queuing at the teacher's desk - this is not high-quality learning for the child at the back!**

- Teachers/TAs should endeavour to mark 'on the hoof'- this enables instant feedback during the lesson
- An opportunity should always be given for children to read teacher feedback and act upon it to improve their work (this reinforces the fact that making mistakes is a part of the learning process)
- Foundation books should be marked in time for the next lesson
- AfL should be used at the beginning every lesson to judge what the children already know
- What we find out through daily assessment should be used to inform planning for the next day
- Assessment, regardless of type, should be useful and impact on learning
- The best form of assessment is marking/giving feedback with/to a child at their desk during a lesson
- Concept Maps should be revisited and updated in every lesson, and any misconceptions addressed before the learning is built on
- At the start of each lesson, the following four questions should be used to prompt the children's knowledge and understanding of the topic being taught:
  - **What did you learn in KS1?** (specific to KS2)
  - **What did you learn last year?**
  - **What did you learn last half term?**
  - **What did you learn last lesson?**

Examples of prompts for marking and feedback:

How could you improve this work further?

… think about this sentence that you wrote and correct the grammar…

Add to this sentence so that it describes the setting much more clearly.

Add the correct punctuation to this sentence…

Well done, you have managed to put the correct punctuation in your sentence but show me how you would use a semi colon in a sentence of your own…

This is some lovely dialogue but think about how you could include more characterisation.

Write a few lines of conversation underneath which shows me how the characters are behaving while speaking to each other…

You have fully understood the concept of dissolving materials today. Well done! What do you think might happen if we kept putting more and more sugar in to the water?

Yes, well done. That is exactly what would happen. Can you explain why?

Now try these 3 sums so that I can see if you have really got it…

Please refer to our marking and feedback policy for further examples.

The RGPS 5-Point Learning Check = +6months/+4 months

(especially where individual instruction is given as a result)

1. **Ensuring children understand what they are learning:**

The 5-point check is:

- **Check understanding at the end of the teaching point (all about AfL). Follow up on misconceptions, nurture and direct learning. Do all children understand what and how to do something and are they able to access the task?**

- **Stop the lesson part way through the main activity (approx. 10 minutes in) and check learning against the success criteria. Are all children learning? Do some children require further support/challenge?**

- **On the hoof marking is carried out by adults in the classroom and misconceptions addressed as they happen through verbal feedback and one to one/small group support.**

- **During the plenary, assess learning**

- **Remote marking and feedback are carried out**

2. **Pre-assessment can be carried out to assess what the children do not know but it is worth remembering that children do not know what they do not know, so using this as the sole basis for planning the next steps, is not appropriate.**

Reviewed in January 2014, January 2015, September 2016 and February 2018, September 2020, January 2022

Next review January 2024

Bottom 20% Toolkit

Parental Engagement = +4 months

1. Parental engagement has a positive impact on average of 4 months' additional progress. It is crucial to consider how to engage with all parents to avoid widening attainment gaps.

2. Consider how to tailor school communications to encourage positive dialogue about learning. There is some evidence that personalised messages linked to learning can promote positive interactions.

3. Parental engagement strategies are typically more effective with parents of very young children. It is important to consider how you will maintain parental engagement as children get older. For example, providing flexible communications (e.g. short sessions at flexible times) might create opportunities for parents of older pupils to engage with the school.

4. Consider what support you can give to parents to ensure home learning is of high quality. For example, providing practical strategies with tips, support, and resources to assist learning at home may be more beneficial to pupil outcomes than simply gifting a book to pupils or asking parents to provide generic help to their children.

5. Consider and make allowances where needed for EAL communications, translated documents, letters, reports etc and also where parents have a fear of 'the establishment'. Bring them in gently and give them positive news about their children when you can and 'smile' when meeting them.

Behaviour = +4 months

1. Both targeted interventions and universal approaches have positive overall effects (+ 4 months). Schools should consider the appropriate combination of behaviour approaches to reduce overall disruption and provide tailored support where required.

2. There is evidence across a range of different interventions with highest impacts for approaches that focus on self-management or role-play and rehearsal.

3. Even within programme types there is a range of impact. If selecting a behaviour intervention, schools should look for programmes that have been evaluated and shown to have a positive impact.

4. When adopting behaviour interventions – whether targeted or universal – it is important to consider providing professional development to staff to ensure high quality delivery and consistency across the school.

Collaborative Learning Approaches = +5 months

1. Collaborative learning approaches have a positive impact, on average, and may be a cost-effective approach for raising attainment. Think carefully about how you might manage this – particularly when using setting.

2. Pupils need support and practice to work together; it does not happen automatically. Professional development can support the effective management of collaborative learning activities.

3. Tasks and activities need to be designed carefully so that working together is effective and efficient, otherwise some pupils may struggle to participate or try to work on their own. It is important to ensure that all pupils talk and articulate their thinking in collaborative tasks to ensure they benefit fully.

4. Competition between groups can be used to support pupils in working together more effectively. However, overemphasis on competition can cause learners to focus on winning rather than succeeding in their learning.

5. The most promising collaborative learning approaches tend to have group sizes between 3 and 5 pupils and have a shared outcome or goal.

High Quality Feedback = +6 months (see RGPS Teaching and Learning Policy and RGPS Marking and Feedback policy - 2023)

1. Providing feedback is a well-evidenced and has a high impact on learning outcomes. Effective feedback tends to focus on the task, subject and self-regulation strategies: it provides specific information on how to improve.

2. Feedback can be effective during, immediately after and sometime after learning.

3. Feedback can come from a variety of sources – studies have shown positive effects of feedback from teachers and peers. Feedback delivered by digital technology also has positive effects (albeit slightly lower than the overall average).

4. Different methods of feedback delivery can be effective and feedback should not be limited exclusively to written marking. Studies of verbal feedback show slightly higher impacts overall (+7 months). Written marking may play one part of an effective feedback strategy – but it is crucial to monitor impacts on staff workload.

5. It is important to give feedback when things are correct – not just when they are incorrect. High-quality feedback may focus on a task, subject, and self-regulation strategies.

6. At RGPS we aim to use Verbal feedback and live feedback, through on the hoof marking, to give 'real time' feedback to pupils, because we know that when this is used, learning is maximised, as it happens.

Metacognition and Self-Regulation = +7 months

1. The potential impact of metacognition and self-regulation approaches is high (+7 months additional progress), although it can be difficult to realise this impact in practice as such methods require pupils to take greater responsibility for their learning and develop their understanding of what is required to succeed. Editing and drafting processes – using purple pens, cold tasks and hot tasks are good examples of these, as is children carrying out self-assessment or potentially, peer assessment (if done well), encouraging independent use of dictionaries and encouraging/modelling the independent use of words around the classroom to expand vocabulary and use vocabulary in different contexts. Children using the whiteboard to share problem solving in maths for discussion around a choice of different methods used, would also be a good example.

2. The evidence indicates that explicitly teaching strategies to help plan, monitor and evaluate specific aspects of their learning can be effective. Using clear concise LOs and SC will give the children structure to use when applying self-regulation skills.

3. These approaches are more effective when they are applied to challenging tasks rooted in the usual curriculum content.

4. Teachers can demonstrate effective use of metacognitive and self-regulatory strategies by modelling their own thought processes. For example, teachers might explain their thinking when interpreting a text or solving a mathematical task, alongside promoting and developing metacognitive talk related to lesson objectives. A good example of this might be in modelling writing or when solving a mathematical problem. Children teaching children and modelling how they would solve a problem to each other is always a good method of pushing children on – especially in mixed ability groups. This is something that children need to have carefully modelled to them first. Staff training on this is required.

5. Professional development can be used to develop a mental model of metacognition and self-regulation, alongside an understanding of teaching metacognitive strategies. Peer assessment is used in year 6 and could have potential in other year groups but it needs to be a school-wide policy decision, with specific training for staff and pupils please.

Homework = +5months

1. Homework has a positive impact, on average (+ 5 months).

2. Some pupils may not have a quiet space for home learning – it is important for schools to consider how home learning can be supported (e.g. through providing homework clubs for pupils). Be mindful of this and try to understand that there may be other barriers at home, preventing children from completing homework.

3. Homework that is linked to classroom work tends to be more effective. In particular, studies that included feedback on homework had higher impacts on learning.

4. It is important to make the purpose of homework clear to pupils (e.g. to increase a specific area of knowledge, or to develop fluency in a particular area). **It is also important to make sure that pupils are able to access this homework, particularly if it's too challenging or the resources needed are not available at home.**

Reading Comprehension Strategies = +6 months

1. Reading comprehension strategies are high impact on average (+6 months). Alongside phonics it is a crucial component of early reading instruction.

2. It is important to identify the appropriate level of text difficulty, to provide appropriate context to practice the skills, desire to engage with the text and enough challenge to improve reading comprehension.

3. Effective diagnosis of reading difficulties is important in identifying possible solutions, particularly for older struggling readers. Pupils can struggle with decoding words, understanding the structure of the language used, or understanding particular vocabulary, which may be subject-specific.

4. A wide range of strategies and approaches can be successful, but for many pupils they need to be taught explicitly and consistently.

5. It is crucial to support pupils to apply the comprehension strategies independently to other reading tasks, contexts and subjects.

6. REMEMBER, children do not learn from just doing comprehension tests. They cannot pick up the skills needed via osmosis, they need to be taught the skills. DR is fundamental in teaching these skills.

Phonics = +5 months

1. Phonics has a positive impact overall (+5 months) with very extensive evidence and is an important component in the development of early reading skills, particularly for children from disadvantaged backgrounds.

2. The teaching of phonics should be explicit and systematic to support children in making connections between the sound patterns they hear in words and the way that these words are written.

3. The teaching of phonics should be matched to children's current level of skill in terms of their phonemic awareness and their knowledge of letter sounds and patterns (graphemes).

4. Phonics improves the accuracy of the child's reading but not necessarily their comprehension. It is important that children are successful in making progress in all aspects of reading including comprehension, the development of vocabulary and spelling, which should also be taught explicitly.

5. Is your expertise sufficient enough to support children with a very basic level of phonics understanding in KS2? You can 'hack' into this knowledge and experience by using other staff, or attending further training/swaps with KS1.

Repeating a Year/Working with Younger Pupils (e.g. Phonics Groups) = -3months

1. Requiring pupils to repeat a year has a negative impact on average. Negative effects are rare for educational interventions, so the extent to which pupils who repeat a year make less progress is striking.

2. Negative effects are disproportionately greater for disadvantaged pupils, for pupils from ethnic minorities, and for pupils who are relatively young in their year group.

3. Where pupils are not achieving expected outcomes, alternative interventions might provide intensive support that may make repeating a school year unnecessary.

4. Negative effects tend to increase with time and repeating more than one year significantly increases the risk of students dropping out of school.

5. Be very mindful of the negative impact of moving children between groups in your classroom too, or in streamed sets. This needs to be handled very carefully so that children do not lose confidence.

The RGPS 5-Point Learning Check = +6months/+4 months (where individual instruction is given as a result)

1. Ensuring children understand what they are learning.

- The 5-point check is:
    - Check understanding at the end of the teaching point (all about AfL). Follow up on misconceptions, nurture and direct learning. Do all children understand what and how to do something and are they able to access the task?
    - Stop the lesson part way through the main activity (approx. 10 minutes in) and check learning against the success criteria. Are all children learning? Do some children require further support/challenge?
    - On the hoof marking is carried out by adults in the classroom and misconceptions addressed as they happen through verbal feedback and one to one/small group support.

- During the plenary, assess learning
- Remote marking and feedback is carried out

2. Pre-assessment can be carried out to assess what the children do not know but it is worth remembering that children do not know what they do not know, so using this as the sole basis for planning the next steps, is not appropriate.

Classroom Management Strategies (including use of adult support): Simple yet effective strategies previously discussed, include…

- Preparation. Know what you are teaching.
- Do not blindly follow Powerpoints/Notebooks
- Engage the pupils and make sure they are active participants (can they see and hear you or resources they are directed to, is a good start)
- No child should have their back to you or the board
- Deal with any low-level disruption. Don't let the children talk when you are and make sure that if you have a point to deliver that the children are listening
- Follow the behaviour policy – we do not accept calling out
- Children should not be wandering corridors. Make sure you keep track of children going to and from toilets etc
- TAs should support **all** children and are not to solely work with the SEND or struggling children. There should be equal access to the class teacher
- Use meaningful resources that impact on learning. Avoid needless worksheets or photographs in books.
- Ensure CPA process is used in maths lessons and that appropriate resources are available for all children in all year groups
- Make sure furniture and other resources (including manipulatives) are available and easily accessed. Will table arrangements avoid bottle necks?
- Pace
- Challenge for all. In the last learning walks, children were seen sitting waiting for the next activity (particularly with starters). In other cases, teachers were going through a couple of examples on the board and several children had not only already done the examples, but also gone on to complete 5 or 6 of the main activity questions before the teaching input had finished. Think about how you could manage this better. Could you have gone through a single example, checked learning of the top table and then got them started whilst you worked with the rest of the class for example?
- Smoother and speedier transitions (can you cut down/eliminate opportunities for poor behaviour? Reduce bottlenecks and gathering groups of pupils)
- There should not be queues of children waiting for the teacher to mark their books.
- Children should start learning promptly and should not be standing in lines for too long, when getting the class ready to go home

- Too much wasted time - resources not prepared and ready on the tables - children wandering around the room handing out - too much faff in the cloakrooms and settling down - THINK about carpet time - is it really necessary? Do children need something physical to look at/touch etc during the starter - spending considerable wasted time discussing something that the children already knew and in the worst cases, preventing children from moving on to the next activity until the teacher had given them the ok. Also... in some cases, unnecessary overused interactive whiteboards and slides. Think about previous insets and some of the strategies that were discussed around engagement
- Learning MUST always be checked - USE the 5 point check
- Manage your TAs so that they support learning! In the worst practice seen, they stood at the side of the room with their arms folded listening to the teacher. TA's need to be actively involved in the learning.
- Where visual resources are used, make them BIG and BOLD so that they can be seen and refer to them and use them!
- Get around the room
- Modelling be clear so that expectations are set. Be clear in expectations, show and involve the children. Teach them what to do and how to improve. Teacher modelling is one of the best tools in our toolbox. Use it and make sure what you model can be seen
- Have an 'all seated' policy and resources available on desks, so that children do not wander around the room when they should be learning
- Adaptations in learning. Know your children, have high expectations and understand their needs.

Overcoming Maths Anxiety:

Learning mathematics can be challenging; however, not all mathematics difficulties result from cognitive difficulties. Some children and adults have mathematics anxiety (MA) which severely disrupts their performance.

MA is a debilitating emotional reaction to mathematics that is increasingly recognised in psychology and education. It has been defined as "a feeling of tension and anxiety that interferes with the manipulation of numbers and the solving of mathematical problems in ordinary life and academic situations". MA ranges from feelings of mild tension to a strong fear of mathematics. MA is not restricted to test or classroom settings, with the result that those affected develop a severe avoidance of situations involving any kinds of mathematics. They may not choose careers involving the application of mathematics, even if cognitively they would be perfectly capable of good mathematics development.

Some decent resources for supporting pupils (girls in particular) – check for typos though, as not especially well presented!

Guidance (mathsanxietytrust.com)

Reasons for Maths Anxiety

1. The child's genetic disposition at birth (mental and physical)
2. Child's economic background (hunger, cramped conditions)
3. Family's social background (drink, drugs, violence)
4. Parental positive encouragement in maths
5. The school environment
6. Unusual exterior reasons for missing school (illness, frequent family moves)
7. The Maths teacher has maths anxiety
8. The Maths pedagogy: possible inflexibility of some methods used to teach teachers to teach.
9. Online Maths courses (screen teaching)
10. The maths course in text books

Learning mathematics can be challenging; however, not all mathematics difficulties result from cognitive difficulties. Some children and adults have mathematics anxiety (MA) which severely disrupts their performance.

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Understanding mathematics anxiety - Nuffield Foundation 2013 research and Early intervention is key to breaking 'vicious circle' of maths anxiety - Nuffield Foundation 2019 paper which says…

Three quarters (77%) of children with high maths anxiety are normal to high achievers on curriculum maths tests, according to Nuffield-funded research from the Centre for Neuroscience in Education at the University of Cambridge.

However, it is almost certainly the case that in the long term, people with greater maths anxiety perform worse than their true maths ability. Today's report includes a review of existing research literature that shows that this can lead to a vicious circle: maths anxiety leading to poorer performance and poorer performance increasing maths anxiety.

Whilst maths is often considered a hard subject, not all difficulties with the subject result from cognitive difficulties. Many children and adults experience feelings of anxiety, apprehension, tension or discomfort when confronted with a maths problem. Girls in both primary and secondary school were found to have higher levels of both maths anxiety and general anxiety.

The researchers found that teachers and parents might influence student maths anxiety. Parents and teachers tackling their own anxieties and belief systems in maths might be the first step to helping their children or students.

Researchers worked with more than 2,700 primary and secondary students in the UK and Italy to examine both maths anxiety and general anxiety, and gain a measure of mathematics performance. Students pointed to poor marks or test results, or negative comparisons to peers or siblings as reasons for feeling anxious.

"Because these children perform well at tests, their maths anxiety is at high risk of going unnoticed by their teachers and parents, who may only look at performance but not at emotional factors," says researcher Dr Amy Devine. "But their anxiety may keep these students away from STEM fields for life when in fact they would be perfectly able to perform well in these fields."

Secondary students also indicated that the transition from primary to secondary school had been a cause of maths anxiety, as the work seemed harder and they couldn't cope. There was also greater pressure from tests – in particular, SATS – and an increased homework load.

The report sets out a series of recommendations, including:

- Teachers should be aware that maths anxiety can affect students' maths performance.
- Teachers and parents also need to be aware that their own maths anxiety might influence their students' or child's maths anxiety and that gendered stereotypes about mathematics suitability and ability might contribute to the gender gap in maths performance.
- Certain interventions, such as reducing classroom pressure and using methods like free writing about emotions prior to a test could help alleviate maths anxiety.

Project lead, Dr Denes Szucs, said:

> "Our findings should be of real concern for educators. We should be tackling the problem of maths anxiety now to enable these young people to stop feeling anxious about learning mathematics and give them the opportunity to flourish. If we can improve a student's experience within their maths lessons, we can help lessen their maths anxiety, and in turn this may increase their overall maths performance."

Josh Hillman, Director of Education at the Nuffield Foundation, said:

> "Mathematical achievement is valuable in its own right, as a foundation for many other subjects and as an important predictor of future academic outcomes, employment opportunities and even health. Maths anxiety can severely disrupt students' performance in the subject in both primary and secondary school. But importantly – and surprisingly – this new research suggests that the majority of students experiencing maths anxiety have normal to high maths ability. We hope that the report's recommendations will inform the design of school and home-based interventions and approaches to prevent maths anxiety developing in the first place."

These strategies are not just for the bottom 20%. QFT will support ALL children to achieve!