Appendices

Appendix 2 – Search Terms and Results

Initial Systematic Literature Search - March 2021

Databases	EBSCO host - British Education Index, Education Research Complete, ERIC, APA PsycArticles, APA PsycInfo	Scopus	JSTOR
Search Terms	TI (Math* OR Numeracy) AND TI (Parent* OR Famil* OR Mother OR Father OR Maternal OR Paternal) AND ABS (Anxi* OR attitude OR belie*)	(TITLE (math* OR numeracy) AND TITLE (parent* OR mother OR father OR famil* OR maternal OR paternal) AND TITLE-ABS-KEY (anxio OR attitude* OR belie*)) AND PUBYEAR > 2000 AND (LIMIT-TO (LANGUAGE , "English")	Title: Math* OR Numeracy NOT (Matthew OR Mathew OR Mathilde) AND Title Parent* OR Famil* OR Mother OR Father, AND All Fields Anxi* OR Belie* OR ""Self Efficacy""", Excluded Reviews,,
Article type	Scholarly (Peer Reviewed) Journals; Publication Date: 2000-2021	Scholarly (Peer Reviewed) Journals; Publication Date: 2000-2021	English, 2000 to present
Exclusions	Exclusions: Language of instruction / teacher training focus 'familiar / unfamiliar'	numeracy and medicine: family physican attitudes 'familiarity' computer attitudes in mathematics professors. familiar'/ unfamiliar preservice teaching focus on 'mother tongue' health numeracy	Coton Mather and the Emerson Family. Mathers – lesbian coparenting chemistry parenthood on faculty salaries father of mathematical geology
Total Results	106	93	37
Duplicates	5	8	5
Unique Articles	**99**	**85**	**32**

Once cross checked for duplicates 152 unique studies remained.

Rerun Searches

On each occasion, the searches were conducted in the same databases, with the same criteria for exclusions. Once duplicates were removed the follow studies remained.

Date	**New, unique studies**
March 2021	152
December 2021	15
January 2023	31
Total	**198**

Appendix 3 – Example Transcript

Phase 1 Interviews – Anna

PF
Basically, I've got a set of questions about how you found maths at school, how your daughter finds maths and how you get gone when you've done maths together. And then some general beliefs about maths to say whether you agree or disagree. And you don't need to answer everything. If there is something you don't want to answer. That's fine. If you want me to stop switch off the recording, that's absolutely fine. Nothing should make you worry about anything. It shouldn't be anything controversial. So can you just confirm you've seen the information about the study and about the data? And you're happy that I'm recording?

Anna
Yeah.

PF
Is there anything you want to ask me before we start being unsure about things?

Anna
No, I don't think so . .

PF
Because it's a university study, this is all confidential. Only I'll see it and I'll type it up anonymously. What I'm doing is I'm talking to as many parents as I can to really try and understand the experience of doing Maths with children. And then the second part will be trying to design a course in some format to help parents protect their children against maths anxiety or worrying about Maths.

Anna
Brilliant

PF
So, can you talk a bit about how you found Maths at school?

Anna
Challenging! You know I, I could do it if I really, really tried but I never found it easy. I never it would always be The subject I didn't want to do it would be way down on my list of that, you know, I like writing and reading. And I just found maths challenging, boring. You know, I used to get . . . . I remember being told off in secondary school for chatting in class and just being, you know, just uninterested. And I never found it very inspiring. Yeah, I think challenging. Is that primary and secondary, or was there a point that you got turned off it? Or can you remember? No. I guess I must have always found it challenging. I don't think it ever came easy to me. But I think at primary, you know, I must have I don't remember there ever being a problem. My mum never said there was a problem. You know, throughout my schooling, there was never like a big problem that I didn't do it and refuse to do it. But yeah, I just think it was one of the subjects that would be my least favourite If anyone asks, I'd probably be like, No, I don't like, you know, I don't like maths. It's my least favourite subject. But yeah, I can't quite remember in primary school, but I definitely remember secondary school. And yeah, just not enjoying it

PF
Can you remember what it was that you didn't enjoy? Was it the way it was taught? Or not seeing the point of it or the interactions?

Anna
yeah, I think not seeing the point of it. Probably, I think, the way I learn, I like to see it, you know, I sort of have to learn things. And there'll be a point to it, you know, why am I learning something? And that relates into my life. I learned much better in that way. And I just felt like maths, beyond adding and subtracting all that kind of the basic multiplication. in things like algebra, I just were, I just didn't get it. I didn't get why I was learning it and it just felt like a big waste of time. And, and I found it hard. So because I found it hard, is a confidence thing I would just not want to try because and I only realised that now from doing this, if I don't do it, you know, it's a confidence thing. You think you're bad at it. So you just switch off you don't want to engage in it because I you know, I'm a bit of a perfectionist as I can see in my daughter as well. You know, there's that wanting to be good at something and not being good at it and finding it more challenging. And then you sort of think, well, I'm rubbish at maths. I'm not going to even go there. And yeah.

PF
So how do you feel now if you have to work something out at work . . you're doing bookkeeping . . .

Anna
Yeah, know . .oddly . . . I think all that stuff , you know, I can do you know, I'm not stupid I can I can work it all out. Yeah. And I still think with I still at work, there's still things. When I'm asked things in a meeting, I still think I can't do it. And it's that label you put on yourself like, I can't do that. And then when you do work it out when you've got time by yourself to do it. It's like, Oh, yeah, that's, you know, that's that I can work that up. I think it's that having to work it out quickly. My brain doesn't work, you know, in math. I can't I can't do it. I you know,

PF
Being put on the spot in front of people.

Anna
Yeah, honestly. Yeah. Makes you really stupid and that you can't do it. And I mean, luckily, my job I don't have to do that very often. It's, it's usually, you know, if I go to a meeting, I've got the figures there. I'm prepared. And But yeah, I think sometimes I don't even try because I think I'm not going to do it because I'm not able to do it. But yeah, like I said, when I go away on my own and have time to work it out, I can work it out. And but, you know you I think you compare yourself with others as well you see people that can just bring it out . . you know, they're asked it asked a question and they can just come out with the answer. So you compare yourself with those people and think well, I'm rubbish because I can't you know, I can't do that. I can't just come up with the answer. I have to take time and work it out like in a more methodical way and, and yeah, and with work. Yeah, there's lots of maths in my job, but I can you know, I have the time I do it. I work on my own pretty much all the time. I work on my own, its a small company. So I have the time to work it out myself and I haven't got that pressure. Yeah. I think that's Yeah, that helps.

PF
So how do you think your daughter feels about Maths?

Anna
Similar I think she's she loves writing. She loves reading, she loves anything creative. Yes, she's . . It was so different with homeschooling her with maths. Its I mean, since half term, May half term, we've got into routine that we weren't in tears all the time . . but before that . . reading and writing absolutely fine you know, most of the time she'll do it herself. And she's better when she does it herself because she has ownership of it. And in terms of the work, and she would just crack on and it's her thing and she, she's great at doing it, and she enjoys it. Whereas when it comes to maths, it was just that was always a sticking point. And we did . . . we'd have to you know . . . we tried moving it around whether we do Maths first to sort of get it out the way whether we try it later on which is what they did at school. You know, we tried loads of different things and it would always be and we started off with fractions and equivalent fractions and it was really hard anyway so it got easier as the time went on, they just sort of did all the fractions and all that stuff that I find really difficult and she was finding difficult. They started with that. And I guess that's because that's what they were doing in class, you know, and then sort of following on. So it was a bit of an induction of fire to start off with something like that. I was like . . .ahhhh . .and I know I wasn't alone I know, there were lots of other parents in our year that similar. But we'd, yes, we'd start doing trying to do this maths, and she would, she would just not engage in it. Whereas, you know, if we're talking about something with writing or reading, she's really engaged and be really interested in come up with lots of ideas. Whereas with maths, she would think she can't, she would all straightaway think that she couldn't do it . .And I'd sit with her in it because she wouldn't listen. We'd watch the video - we had a video, the White Rose Maths - we were watching that, but she would just be messing around like, she wouldn't even engage in it. She was just like playing with her pencil. So then I would start getting anxious and irritated because she wasn't even watching the video. And I'd be like, well, I can't help you, if you don't watch the video and get to the end of the video, didn't know what she was doing because she hadn't watched the video because she just was not engaged in it at all. And then we tried lots of different things. So I would try and get her set up. So she'd watched the video on her own, because she seemed better when I wasn't in the room because she was messing around because I was in the room. And, you know, it felt like that was not really helping. But then I because I wasn't watching the video, I'd come in - she'd ask me question - I'd come in and I have no idea what to do. And I'd try and tell her how to do it one way, and then check the answers, and I've got it wrong. Oh, so she had no confidence in me, because I clearly didn't know what I was doing. And so there was a lot of weeks of that.

PF
You persevered . . you carried on doing the maths tasks. . .

Anna
Yeah, we did every single math task and it was there some days we take three hours to do like two sheets and there was Yeah, I mean, there was one point and I just emailed the teacher and I said, Look, we've taken three hours over the sheet there's one question left and I just . . . I couldn't even get it . . . and she was like, No, you shouldn't be spending that much time and we'd have you know, we do so we have breaks halfway through because I could see you know, with other, with reading, writing, she could do it for an hour easily and just even more, you know, she just be into it and just totally fine sitting there and getting on with it. Maths, after about 20 minutes you could see she start yawning she'd start

switching off So I you know, added a break. Sometimes that helps sometimes it was worse because she didn't want to come back to it . . . . .eventually what happened? Yeah, so yeah, we had like these points of like, Oh really, you know just really struggling and we would I we both ended up in tears, you know, worst days we should I'd i really bite because she just wasn't listening and that really pushed my buttons and probably the confidence thing as well you know that I felt I couldn't do it. So I had no confidence in teaching her didn't know if I was doing it in the right way. And she obviously picked up on that as well, but I had no idea. And so we Yeah, so what but what really helped was, I would get up really early. Before she woke up, watch the video, do the maths, do the both maths sheets, and then I knew what to do.

PF
That's very proactive . .

I didn't do it towards it towards the end. I didn't need to but with fractions and equivalent fractions, I had no idea. You know, I just can't remember any of that stuff that we learned and, and I wasn't sure what how they were teaching them. So I that was the time that I was that was what that was the best way that I could work. It still wasn't perfect, but . . .

PF
It gave you the confidence to then sound more authoritative about it . . .

Anna
Yeah. And she could ask the question, and I was like, Oh, yeah, actually, no, I know this. And I didn't then have to go back and watch the video while she was there as well. And, you know, I could let her watch the video, but I wasn't over her shoulder, which she didn't like, and so I'd go in the other room and do some work or whatever. And then she asked me a question. You know, I'd come back in and help. But then actually, because we didn't see my boyfriend for two months over lockdown. And then when we started seeing him again, at the end of May, beginning of June, he really really likes maths and is good at it. He did maths with her one day and because he knew I was struggling, and he said that, and he said to me, just let her do it. Like, don't go in. If she asks a question, tell her to leave it until the end. So go on to the next question. Because what was happening, I would go in try and help her. And then she'd rely on that. And then she'd asked me the next question. So because I would keep coming in, and then we'd end up close, then she'd end up, can't do it, then we'd end up fighting. So it was like, leave her to do it. If there's questions, she can't do fine. She can just leave until the end and then we go through them together at the end. That helped massively and so that I just wasn't in the room at all the whole time she was doing really helped out so you know, he did a couple of lessons with her and when he wasn't at work, and then he went back to work, but that just having that really how and somebody else coming in and helped a lot and he said she can do it. She just thinks that she can't do it. So her, you know, her default will be please can you help me with it? Whereas Actually, she doesn't need help. She just needs to sit and think about it, but she thinks she's not good at it. So she, you know, will ask for help. And so that was interesting.

PF 8
Yeah, the dynamic tricky. I would completely agree. It's the dynamic of having one child and one adult. And I'm a qualified teacher, and we've had broadly similar . . .

Anna
that's reassuring!

PF
Not necessarily with maths, but just, you know, it's it's really challenging. It sounds like you've put a lot of commitment into it.

Anna
yeah, I mean, I'm lucky I don't have a full time job.

PF
Even so, just holding that emotion all day.

Anna
Yeah.

PF
Keeping going without other children around you. It's hard. . . .

Anna
Yeah

PF
So have there have been any positive occasions where maths has gone well and you've both enjoyed it.

Anna
Definitely. Yeah. And I mean, I think when we got over the equivalent when we finished with equivalent fractions, that was a good moment. And it actually yeah, starting with the really difficult stuff did help in some ways that the rest of it seemed a lot easier. And yeah, she is she enjoyed it, there was some bit the measuring she really enjoyed. And, you know, it's the interactive stuff. But she and again, she's probably quite similar to me that she needs to see why she's doing it. And so, you know, measuring her feet measuring me, you know, see how far we could jump, all that kind of stuff was brilliant, and she loved all that. And, and there were moments when she could really do something and get it. She said, Oh, I really enjoyed doing that. I really mean and that's like, Oh, you've enjoyed Maths that was really great. And it seemed because she felt confident in it that she knew what she was doing. And yet she really actually really enjoyed it. So yeah, she has said, at points I've really enjoyed doing it. And whether that's because I'm more relaxed as well. You know, I understand what she's doing a lot, you know, weights measurements, yeah, they are more relevant to our day to day life. So, if that has been, yeah, that's been pretty good. I've actually just bought her a book called, I think it's what's the point of maths and I think that's what it's called What's the point of Maths, that's a really great book and it sort of relates a lot of the stuff she's done. You know, the shapes, hieroglyphics, it sort of relates back to hieroglyphics. There's lots of different things throughout the book that it relates maths back to, you know, to day to day life and history, how it's formed and I'm hoping . . I only gave it to her a few weeks ago but I'm hoping that will help her with Maths, as well, to sort of see the point of it.

PF
I think that's really important. Yeah. I mean, children like to know why they're learning the things they're learning. Yep, totally. So did you do any maths, . . .sounds like books, but any

activities that aren't homework, math activities. Do you have any maths games you play? Or do you do cooking and talk about the measuring, weighing, or,

Anna
I mean, it seems like it again, is cooking and measuring. And I'm sort of now letting her you know, if it's a simple recipe, I'm just letting her do it herself, which she really likes. She's very independent, strong willed, and, you know, wants to do it herself and having that ownership of it is actually really good for her. And so yeah, we did. Yeah, we do lots of

PF
Do you draw out the maths or numbers in life as you go along. Is there anything when you notice the numbers with her or

Anna
Actually, I don't know . .we . . . in terms in when we've been going on walks, actually the daily walks and things we started doing times tables as well like reciting the times tables. And I'm not great at times tables, she's better than me at some of them, you know, some numbers I knew she didn't and vice versa. So that that was quite good just sort of being out side and reciting them. You know, and she found that quite fun. And she found fun that she could teach me what numbers that I didn't know. So you know, the times tables so that's been really good sort of Incorporated, incorporating it into our walks, and you know, she likes being outside and stuff like that. So that's been quite good. Yeah, I don't know. I mean, maybe there's things I just haven't thought of. Yeah, measurements are the main things.

PF
Do you use any apps? I mean, just like Mathletics doodle math, that sort of stuff.

Anna
What do they do? They do rock star TT rockstars. And they do what are they called . . What have they been using recently . . . Oh, Maths Shed, Yeah, they do a Spelling Shed and a Maths Shed. So, yeah, so that's the main ones they use at school.

PF
And does she enjoy those?

Anna
Yeah, kind of, she prefers the spelling Shed to the Maths Shed, I mean, she'll do it but I think over lock down, we didn't really do it that much. And just because I felt I wasn't going to push as she was doing her work. You know, we were doing all the work and stuff. And it was more screens and yeah, you know, yeah, and she has a screen time,. You know, she has like 40 minutes to an hour of screen time. She can choose whether she does Minecraft or she can have some telly or whatever. So she sort of has that screentime and her schoolwork on screen as well. You know, she's got all the information on screen. So she's on her iPad, getting information for school, researching on screen, so I just sort of felt ,I'm not going to push it, I think so i think one week the teacher said, I'm not doing maths today. You can go on Maths Shed or TT rockstars. So she did that, but she didn't particularly seem to enjoy it that much. So I didn't, I didn't. I mean, a friend has just mentioned last week actually that a Carol Vorderman website that is supposed to be really good for children and she said her daughter's really struggle with homeschooling generally and she really likes that so I thought I might give that over the holidays. I thought I might give that a try . ..

PF
Yeah, its almost overwhelming how much there is out there particularly when everybody's going you're homeschooling have all these resources and

Anna
Yes, too much, overwhelming. I feel thankful that school has actually given us a lot of work which has been great because you have that structure, and I haven't had to look and field it myself, really, because I think it can be overwhelming, like you say all these resources are being thrown at you. So I've been quite lucky in school, I think.

PF
Good, Now I'm going to try to share my screen. And what there is a there's a number of statements about maths. This is sort of the last part. So there's eight of them, and just tell me whether you agree or disagree with the statements and why and any thoughts you have about it. Okay, can you see a PowerPoint now? Yeah, yeah. So some people are born with a natural ability and maths.

Anna
Strongly Agree.

PF
What makes you think that?

Anna
Um, I think just Yeah, and I think listening from friends with children and, and they're like, Oh, my child will get through maths in 10 minutes, and then they struggle with reading or writing. And yeah, and I think the way people's brains work, yeah, like I look at my boyfriend and how, you know, he obviously enjoys it and the way his brain works, and he finds it a lot easier than I do. Whereas I yeah ,I do have to take my time over it. I lost quick. I think that's what it is. Okay.

PF
It's more important in life to be good at English than Maths.

Anna
Now, I disagree. I think I think they are both important. And yeah, I wish I was better at maths. So I think yeah. Yeah, I think they're both important.

PF
Boys tend to enjoy mathematical activities more than girls.

Anna
Mmm hmm. I'd probably agree. Yeah, just I don't know. I'm only basing it on you know friends of Alice's, school friends. Yeah, I'd probably agree. I did. Yeah. I don't know if I'm right or wrong but yeah.

PF
Maths mainly involves facts and procedures and learning things by heart. Yeah, I agree. I think with the right teaching and experiences, everyone can reach high levels in maths.

Anna
Um, i don't know about the high levels. I probably disagree. I think you can get farther But I think Yeah, I'd probably say not the high levels. But yeah, so probably disagree.

PF
So would that be because of the way people's brains are? or?

Anna
Yeah. I think Yeah, And, and the and how, and the wants to, I think, you know, if you enjoy something you want to get high levels. Whereas if you don't, you know, you don't want it's a lot harder to push through. And yeah, having that will to want to do it, I think. Yeah.

PF
Reading with your child is more important than doing Maths.

Anna
No, I disagree. I think it is. I think both are important.

PF
It is important to be able to solve math problems quickly.

Anna
Yeah, depends on sometimes. Yeah, I think it would have to be Yes, I think for confidence, I think. Yes, I agree. I think I think I'd be a lot more conscious, if I could do things quickly,

PF
but do you think it's necessary? If you're good at maths that you are quick at it? Or could you be good at maths and more slow?

Anna
You can but I, I mean, I guess it depends on what you're doing. And, you know, if you're in a test situation, or you know, you're like you're in a meeting, you know, in life, yeah, I think, I think if you're, if you're on an exam, if you don't have much, you know, you don't have that much time, I think you're going to get better marks if you finish complete the whole math sheets, whereas if you're not quick, then you might even finish the maths sheet.

PF
And last one, Maths is a creative and visual subject.

Anna
I'd probably say it's visual, but not creative. I think it's so I'm going to disagree. I think it's it seems quite structured. You know, there's a right and a wrong answer. So yeah, I'm going to disagree, I think.

PF
Okay, thank you. That's right. stop sharing my screen. Thank you very much. That's really, really interesting, really detailed. What I'm going to do is use all of the information and understanding the I gained from talking to parents and design a course. So hypothetically speaking, in a world of COVID, it's likely to be an online course of or so if you if you're going to Would you be interested in doing something? And would you be interested in engaging online or would you do you think people would prefer to wait until we can do face to face?

Anna
Yeah, no, I'd definitely be interested. I think, just to have that confidence would be really helpful. I mean, in an ideal world you'd have sort of one for every year group you know that because we'll see you know what . . .so you're studying what they're going to study and

PF
It wouldn't be any content of maths it would be more how to talk to your child how to respond yes those rather I'm there are other people out there doing how to teach fractions to understand what the people would like you know, there's so many courses at the moment where you just dip in in your own time online yeah or there's webinars where your online at a particular time or there's the traditional meet at school at four o'clock or whatever Yeah, you have any thought which you'd be more likely to be able to do?

Anna
and I'm going to say, I think online is good I think Yeah, either face to face all right. Let you know either. Like I said, I to school, but I think, actually if it's online in an evening or I mean I can do during the day because I don't work full time but I'm just thinking of parents that do work full time. And lots of them don't do pickups and things like that. And so I do think the evenings probably better to get a wide range of people attending evening is probably good. And, and, and from being at home is you know, everyone's so used to being online now, since COVID And I think Yeah, you can kind of get right okay, um, sat here, I'd have to leave the house, which is a bonus in some in some ways. So yeah, I think online is probably quite good.

PF
Well, thank you so much. That's been really interesting, really useful. And just to reiterate, this is all completely confidential. I will type it up without any names involved. Anything you're concerned about? Get back to me if you change your mind and you don't want me to use this if you let me know next week and then it will have been processed.

Anna
I think it's great what you're doing and I think it'd be really interesting to yeah to know how to speak to them to your children. Yeah in a balanced way.

PF
maths and girls as part of a masters and realised that girls are quite anxious about matters particularly girls as young as seven and then so it's almost that's what I started looking at the home environment that if you've got children in infant school worried about that, then you've got to look at the messages that come in from home and how to engender a more positive attitude. Then again, I can get from that and then I hear myself talking about music or something that I can't do and I'm just as . . .

Anna
and the way you saying about you know, bringing life into everyday life you know, tips about that would be great, really beneficial so yeah

PF
Thank you very much.

Appendix 4 – Questions and Amends

Interview Protocol for Phase 1 Interviews

Warm up Q

Are children back to school yet? How have they found being at home? Looking forward to the summer holidays?

I've got a set of questions to talk about – about how you find maths yourself, how your child finds maths, some general beliefs about maths to agree or disagree with. Really no need to answer every questions. Can move on at any point, or stop altogether and turn off the recording – just let me know. Can you just confirm that you've seen the information about the study, and about data protection and that you're happy for this to be recorded. Is there anything you'd like to ask me before we start?

Part 1 - Your own maths

Can you talk to me about maths at school?

Any memories of things you particularly liked or disliked? Any age that your attitude changed or particular incidents?

How do you feel if you need to work something out using maths now? shopping / bills? Any situations better than others?

Part 2 - Maths with your child

How do you think your child/children feel about maths?

How do you think your child gets on with maths? How do you think their maths compares to other subjects?

How have you found doing maths work during lockdown? Can you give me any examples of times when it has gone well? or gone badly? What's been straight forward? What's been difficult?

How do you tend to get on with maths homework – in life before lockdown!

Can you tell me how you feel if your child is finding some maths hard?

Can you remember any occasions when you've enjoyed doing something mathematical with your child?

Do you do any activities that need maths with your child that aren't homework – games / puzzles / cooking?

Do you find any online maths apps helpful? Doodle maths / Mathletics . . .

Part 3 - Maths as a subject – statements to show on power point on screen, one at a time.

How much do you agree with these statements? Can you explain?

- Some people are born with a greater aptitude for maths.
- It's more important in life to be good at English than maths.
- Boys tend to enjoy mathematical activities more than girls.
- Maths mostly involves facts and procedures and learning things by heart
- With effort and practice everyone can reach high levels in maths
- Maths is a creative and visual subject.
- Those who are good at maths can work things out quickly.
- Reading with your child is more important that doing maths.

Part 4 -Intervention Format

Research tells us that parents pass on their feelings about maths to their children. I'm designing an online intervention to learn how to pass on positive feelings about maths (even if you don't always feel positive?)

Would you be interested in doing a brief online course – videos to watch / questions to think about?

What time do you think people would be willing to spend on it? and hour – more less?

6 x 10 mins? 3 x 20 min? 1 x hour?

Prefer face to face? Would it be better to wait and do a more conventional 'course' ?

<u>Amends to Questions Introduced after Interview 4</u>

Questions added to part 1

Who do you think has influenced your attitude to maths?

Questions added to part 2

Can you tell me how you feel if your child is finding some maths hard? Describe how it goes – what do you tend to do or say if they are stuck. How does your child react?

If hard, what is it that makes it hard or stressful? New methods / child's emotions . .

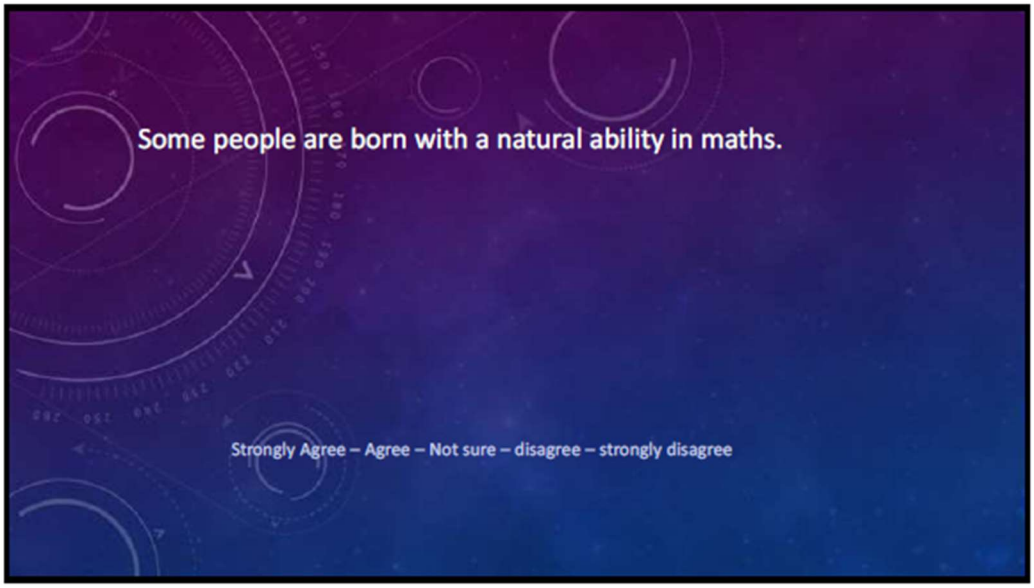
What do you think is most important for them when learning maths? what are your priorities?

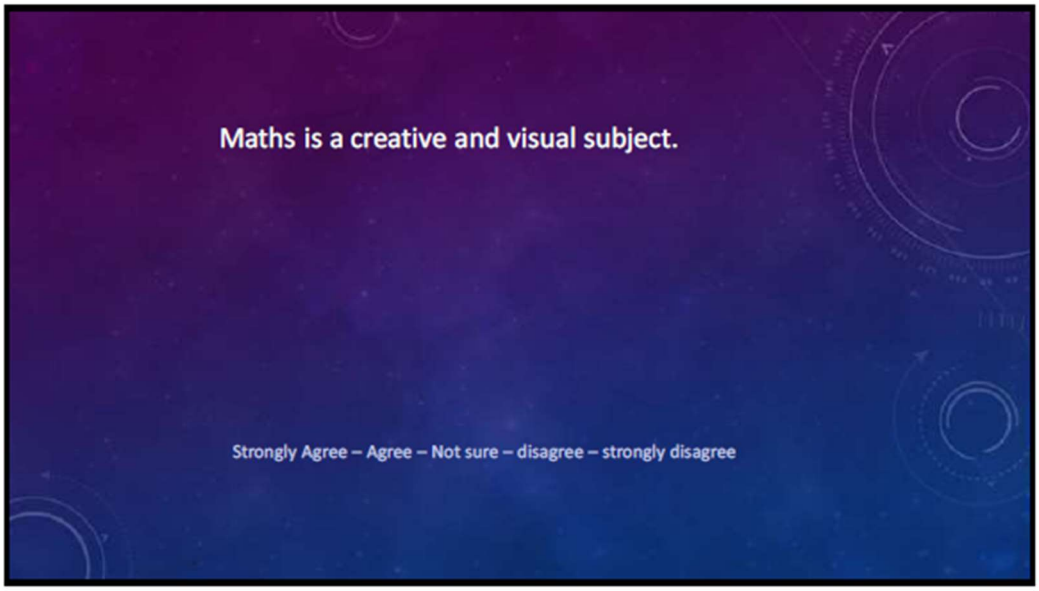
Changed format for part 3

After 4 interviews, the power point slides were removed and the questions were asked in a more open manner.

- Where do you think mathematics abilty comes from?
- Which do you think is more important in life beyond school, Maths or English?
- Do you think there are any difference in how boys and girls enjoy maths?
- How would you describe maths, as a subject?
- Do you think, with the right teaching and experiences, everyone can be successful in maths?
- Do you think speed is important in maths?
- Which do you think should be more of a priority for parents – reading with their child or doing maths?
- Can you think of any situations where maths is creative? Or visual?

Appendix 5 - PowerPoint Slide Examples





Appendix 6 – Phase 1 Recruitment flyer and website

Phase 1 – Flyer

Children, Parents and Mathematics Study

I'm pleased to offer an **£8 Book Token** for participating.

Do you feel anxious about doing maths with your child?

Have you found the maths daunting during home schooling?

Do you worry about how well your child will do in maths?

I am looking for parents with a primary child who feel worried or anxious about maths to help me with a study. I am trying to find out more about how a parent's anxiety about maths affects the way they work with their children.

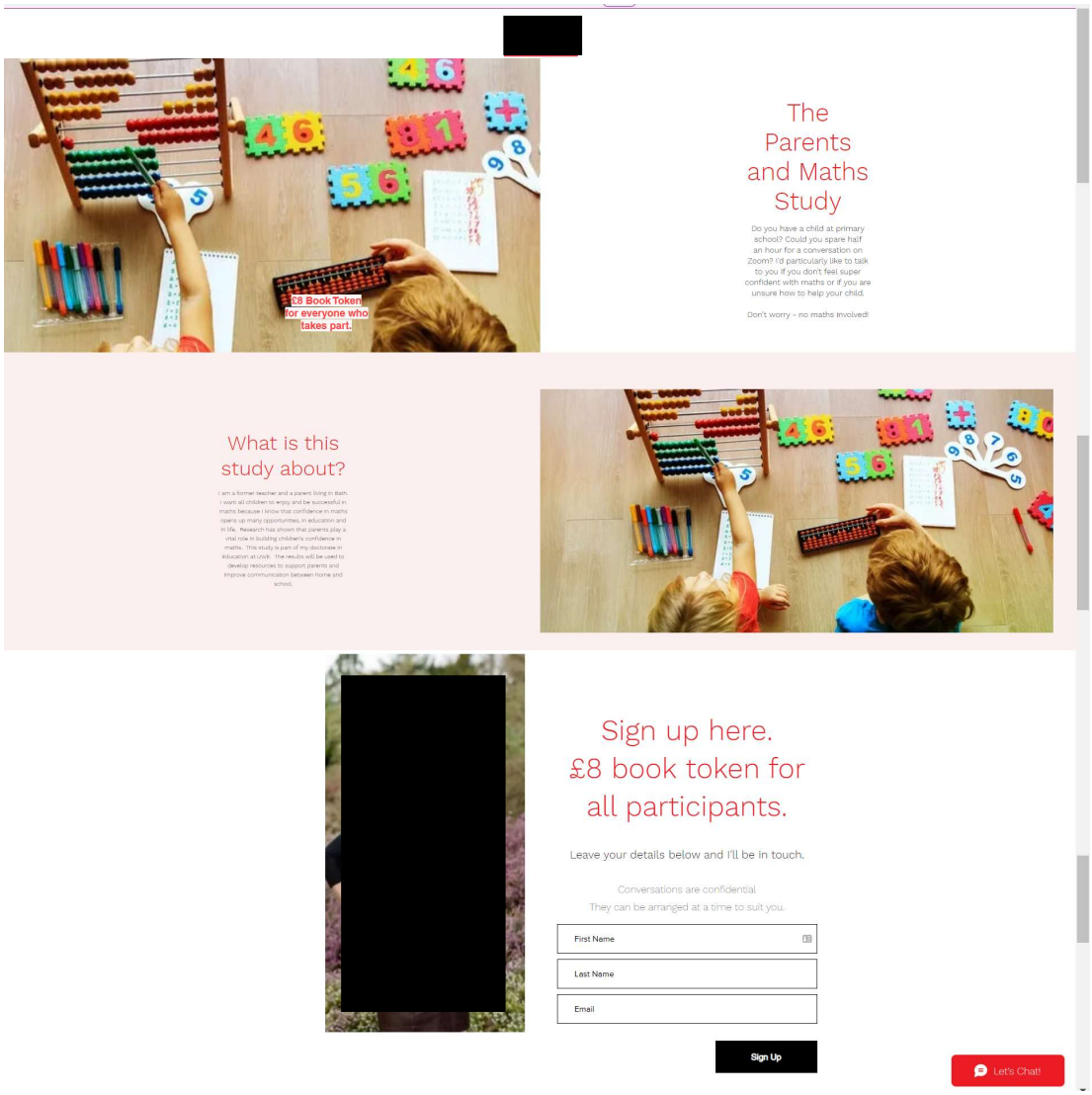
Taking part would involve one conversation with me, on Zoom, lasting 30-40 minutes

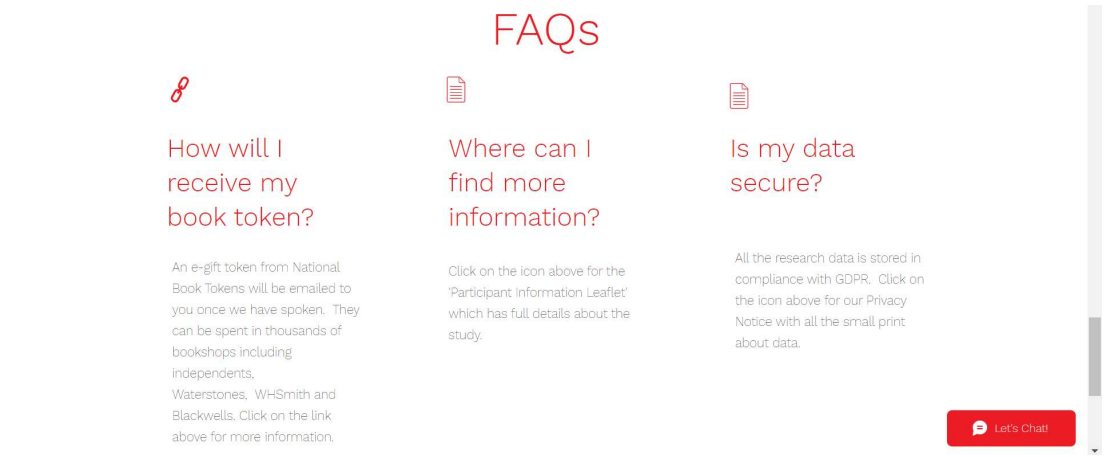
We will talk about your own experience of maths and how things go when you do maths with your children. The conversation will be confidential. I am not connected with the school and will not be talking to your children's teachers.
It can be arranged at a time to suit you.
You will not be asked to do any maths.

These conversations will help me design a course to help parents. You will have the opportunity to take part in the course next year if you wish, but there is no obligation to.

[redacted]

Phase 1 - Recruitment Website





Appendix 7 – Phase 2 Recruitment

Phase 2 – Recruitment Website

[redacted]

A free course for parents who want their children to like maths more than they did.

Does helping with Maths homework stress you out?

Does it often end in tears?

Does it feel like everything has changed since you were at school?

Do you struggle to motivate your children to keep going?

This short course uses coffee break length videos to help you support and motivate your children without learning to do all the maths.

It will take around an hour of your time in three 20 min sessions, online and anytime.
There is no maths to do . . . honestly . . none at all . .

Please leave your details here if you'd like more information.

First Name

Last Name

Email

Why was this course created?

[redacted]

[redacted]

Who is it for?

The course is aimed at the parents or carers of primary aged children, especially those who worry about passing on their dislike or fear of maths to their children.

It's also for parents who like maths themselves but don't know how to motivate their children.

Would you like to try this course and tell me what you think of it?

It's designed to be completed online in three coffee break length sessions. There will then be a feedback questionnaire to let me know what you thought.

Please leave your details here if you'd like more information.

First Name

Last Name

Email

Submit

FAQs

How do I access the course?

I will send you a link to the course on the Teachable platform. It can be accessed on a phone, tablet or computer.
It is made up of three sessions, mostly short videos. There is a survey at the beginning and an evaluation to complete at the end.
You can change your mind about participating at any point.

Where can I find more information?

Click on the icon above for the 'Participant Information Leaflet' which has full details about the study.

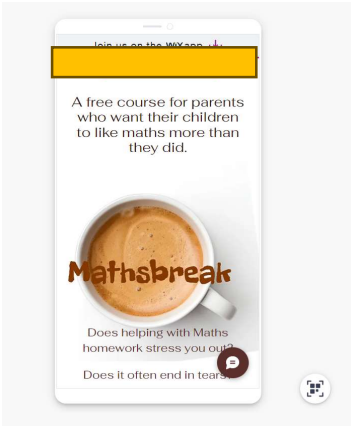
Who is supervising the study?

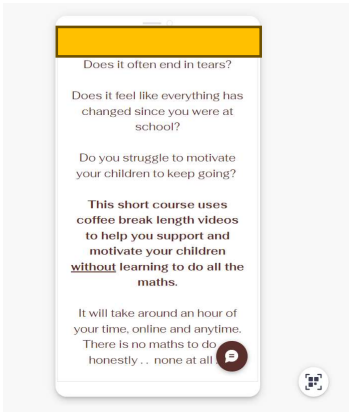
[redacted]

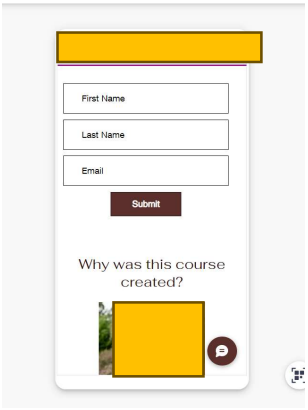
Is my data secure?

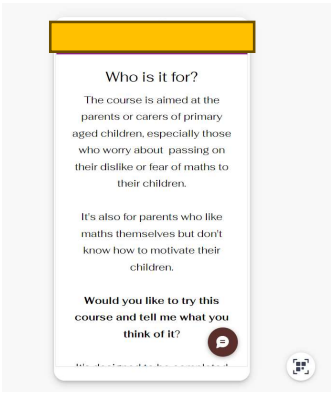
All the research data is stored in compliance with GDPR. Click on the icon above for our Privacy Notice with all the small print about data.

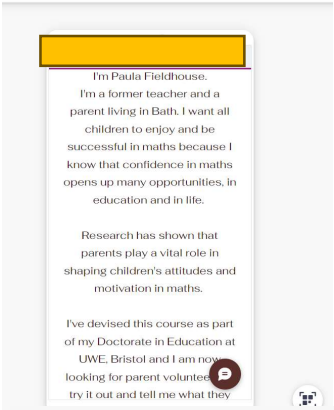
Phase 2 Recruitment Site – Mobile

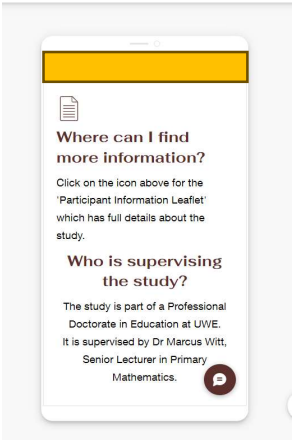


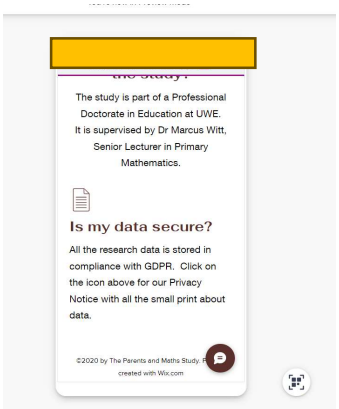


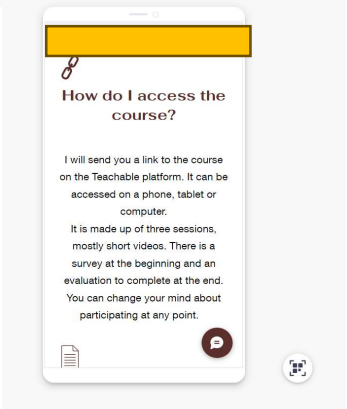




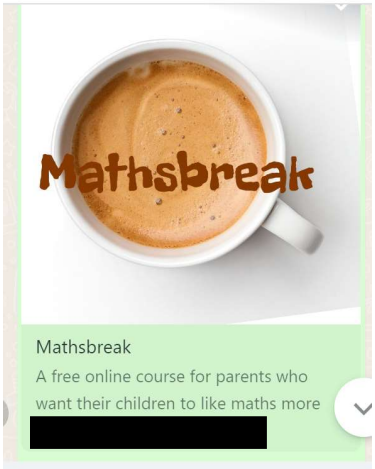








Phase 2 - Social Media Thumbnail with link to site



Appendix 11 – Teachable GDPR Compliance

Teachable statement of GDPR compliance

Teachable's GDPR Compliance

As a company that processes personal data from all over the world, we've always taken the privacy of our users very seriously. To maintain this standard, Teachable is committed to being fully compliant with the EU GDPR.

Teachable has done the following to ensure that we are compliant with the EU GDPR:

- Retained outside counsel to ensure that we comply with every requirement of the GDPR
- Updated our Terms of Use and Privacy Policy to include GDPR-required disclosures
- Provided a DPA agreement for school owner's to view, sign, and submit to Teachable
- Reviewed our contracts with our subprocessors to make sure their data protection policies and procedures comply with GDPR requirements
- Designed a procedure for EU users to request access to or deletion of their personal data
- Added email opt-in checkboxes to a course's checkout page
- Built a native contact form for students to contact school owners directly
- Improved school owners' ability to pass unsubscribe events to third-party services via Zapier or webhook

Available from https://support.teachable.com/hc/en-us/articles/360000954272-EU-GDPR-and-Teachable#eu-gdpr-overview-0-0

Appendix 2 Video Scripts

Session 1 - Introduction

Hi. I'm Paula. I've spent the last few years researching how people learn maths. I've spoken to lots of parents about their experiences of maths homework, and home schooling during the Covid lockdowns. I've made this course based on what I've learnt. I'm hoping it will help you reflect on the ways you think about maths and the ways you help your children.

The course is made up of short videos and a few questions that prompt you to think about what you have heard. Don't worry, there won't be any maths for you to do. It should take about an hour of your time. It's designed to be completed in 3 sessions of about 20 minutes each. So, thank you for trying it out for me. I will be really interested to know what you think.

So, lets get started. Below is short survey about your experiences of doing maths yourself and with your children . . .

Session 1 – Three key messages - You will be successful, maths will be useful to you and attitudes are contagious.

So, how can you help your child do well in maths? How you can help them feel positive and motivated in maths rather than worried by it? This may feel particularly difficult if you feel anxious yourself when working with numbers, or if you had a bad experience of maths at school, but it is something you can do. Importantly, it is something you can do without having to get your head around all the maths your children are learning. You can make a real difference to their motivation, their confidence and their success by changing the way you think about maths and the way you talk about it.

When you are learning something, there are two beliefs that really matter.

You need to believe you will be successful, and you need to believe it will be useful to you.

Why would anyone put effort into learning something if they thought there was no hope of success or if they thought it was pointless?

So what can you do to help your child believe they can do well in maths and that it will be useful to them?

Firstly, they need to belief that Everyone can learn maths and there's no such thing as a maths brain!

. . . some people may pick things up quickly, others may take longer, but everyone can learn . .and improve . How much you know, or what you can do, is a result of the experiences you have had . . . not some magical superpower. You may have heard your child's school talk about a Growth mindset. Someone with a growth mindset believes that everyone can learn, brains can grow and skills can be improved. Unfortunately, maths is a subject that many people hold a fixed mindset towards. They believe people can either do maths or they can't. This is reflected in the way we talk about maths in daily conversation. We make unhelpful comments that lead children, and adults, to a fixed mindset – to the belief that only some people will succeed in maths. I wonder if you have people say things like this . . .

[animation of voices saying they can't do maths]

But now imagine they were saying the same things about reading or writing?

[animation of voices saying they can't do English]

Do you notice a difference in your reaction? Its important to avoid talking about maths like this - either to your child or in their hearing, even if your intention is to be kind or reassuring. This is because they continue the belief that only some people can do maths. If a child believes that they don't have this magical thing called a 'maths brain', they are unlikely to keep trying and are more likely to give up. Some young children, as young as 7, pick up these messages and believe that maths is just not for them . . .they don't have a maths brain . . This can lead to a negative spiral, of feeling hopeless, avoiding maths, doing less practice and losing confidence. You may have felt like this yourself. The good news is that you can help your child think differently

So, the first important message is, that everyone can learn maths, everyone can improve.

The second important message is that Maths is useful and maths is everywhere

Children need to know that maths will be useful to them in their lives, that it is worth putting in the effort . . .

This is where you, as a parent, are in a perfect position to make a difference. Helping children make connections between the maths they are learning and the real world can really help motivate them and help them stick at it when it gets challenging.

The videos and activities in this course are designed to help you do that, to see how primary school maths is used in the real world, so you can help your children see those connections. If they see how math connects to their interests, they are more likely to be motivated to learn.

The third important message – a message to you – is that attitudes are contagious

Children are really sensitive to their parent's beliefs and attitudes. If you are afraid of spiders, they will see them as something to fear. If you are relaxed at the dentist, its likely they will be too. If you believe maths is a valuable subject for them to learn, you will pass that on without even realising it. Research has shown parents can have a really positive impact simply by believing that maths is useful. This is true even if the parents themselves dislike maths.

Communicating these messages, that everyone can learn maths and that maths is useful, and keeping in mind the fact that attitudes are contagious - will make far more difference to your child than being able to teach them fractions or long division. These may not be messages that you have grown up with, or that you really believe yourself yet.

I hope the videos in this course will help you put these ideas into action.

<u>Session 2 – Being a role model and the atmosphere around Maths homework</u>

Hello again. Last time, I talked about the key messages that children need to hear to be motivated in maths?

- Everyone can do well in maths and
- Maths is useful
- I also explained that attitudes and beliefs are contagious

So, how should we work with our children in a way that supports these messages? Last time I talked about the importance of a growth mindset – of avoiding the myth of the 'maths brain'.

Today I'm going to explain, firstly, why the atmosphere of maths homework is so important, and secondly why as a parent you are in the perfect position to show children how maths will be useful to THEM.

Like many parents, the thought of doing maths with your child may fill you with terror, or at least make you feel uncomfortable. Many parents have described to me the stress of doing maths with their children, particularly during lockdown, and how it often ended in tears. Maths evoked emotions and arguments in a way other subjects just didn't. Parents were worried when they didn't know what to do . . which made them anxious and impatient. Their own memories of school maths added to their stress levels and for some, meant they avoided getting involved at all. Children picked up the stress and became stressed themselves . . . . If this feels familiar, you are not alone of parents feel confused about what they are supposed to be doing. They don't recognise the methods, or believe they have forgotten them; they are unsure how much they should be helping their child or they feel frustrated that their child isn't understanding more quickly The way maths is taught has changed, often for good reasons, and it's not your fault that you don't know new methods.

I know some of you have signed up for this course hoping to learn new methods, or pick up tips how to explain concepts to your children. Many parents believe that if only they understood how maths was now taught now, everything would be fine. Of course its beneficial to understand the methods your child is using, and schools often offer workshops or send home information, but learning how to explain all the maths in seven years of primary schooling, let alone secondary, would be a huge task. You are not supposed to be a maths teacher – understanding how children learn and how to help them is a complex process that teachers have studied and practiced over years. Many parents feel terrible they don't know all of this . . you shouldn't. . .most people don't.

I'm going to suggest a different way to support your child, that doesn't involve learning all this maths, and could be far more powerful. The most important things you can do are 'behind the scenes'. As a parent you are in a really powerful position to influence your child. You can model that maths is nothing to fear and, as you know them better than anyone, you can show them how maths relates to their interests and their plans for the future. Research has shown that children who experience positive attitudes to maths at home and have frequent conversations about how maths relates to their personal interests are more likely to positive and resilient learners.

Secondly, when it comes to maths homework, children will remember the atmosphere – not the detail.

The most valuable thing you can do is to help is to stay calm and be positive. I'm a parent. I know that's harder than it sounds . . . . It may be useful to have some stock phrases up your sleeve for when you don't know what to do . . .and when you feel your stress levels rising. There are some examples of helpful things to say in the resources of this course. A calm and positive experience of maths homework is so much more important than whether your child learns a particular multiplication method.

Remember, attitudes are contagious – if a child picks up that you are anxious about maths, they will see it as something to fear . . . if they think you doubt them, they will start to doubt themselves. Instead be positive. Praise the effort they are making, rather than the answer. Be honest if it's a new method for you. Far better to stop if the whole activity is becoming fraught than soldier on with everyone getting stressed.

Maths Anxiety is a real thing. If you think your child may be feeling anxious about maths, there is more information in the resources on this course. Many people, both adults and children, do feel anxious doing maths, but its no reflection of what they are capable of and it can be resolved.

Finally, if children learn to see the maths in the world, the more useful they will think it to be, and you are in the perfect position to show your child this.

Maths is all around us – in anything that can be measured, counted, compared, designed, bought or budgeted for – not just in the subjects of maths lessons such as quadratic equations or algebra. You probably do far more maths than you realise in your daily life. Many people feel that they haven't really done maths since they left school, because they only think of school calculations, or because they do it on spreadsheets or calculators. Very few people use quadratic equations in their daily lives, but pretty much everyone uses money. Very few people calculate by hand in their work – its more accurate and efficient to use a calculator. It's still maths. It's certainly not 'faking it' to use the tools you have. Point out to your children the maths you are doing, so that they can see its relevance to the real world.

The videos on this course have been made by people in a variety of jobs to show how they use the maths taught in primary school. They are there to help you tune in to the maths people use, so that you can point this out to your children. Please choose two . .or more . . that interest you and spend a few minutes watching them. They are designed for you, but you are very welcome to share them with your child as well. There are a couple of reflection questions at the end. There are no right or wrong answers; they are there to prompt you to reflect on what you have seen.

Session 3 – Gender Stereotypes

In the previous sessions we've discussed the key messages children need to hear.

Everyone can learn maths and maths is useful.

We've talked about the importance of making maths homework a calm and positive experience for you and your children and how they need to see how maths is used in the real world. You've seen a few videos showing how maths is used in the real world. Before you watch some more, there's one more point I'd like to make and it's one about Gender stereotypes . . .

There is still lots of evidence that boys receive more positive messages about maths than girls. Parents don't believe themselves to be perpetuating this and almost all the parents I spoke to didn't think they held any stereotypical views about what their children would be good at. However, there is still a lot of evidence of social stereotyping in how we talk to children, the things we point out to them, the games we play, the toys we buy, the adverts they see and the expectations we have for them. Despite our beliefs that we are treating our children the same, boys are still more likely to receive the message that maths is for them and that they will be good at it. Interestingly, many girls and women say that one of the reasons they lost interest in Maths was that they couldn't see how they would use it, how it related to the things that interested them.

There is also evidence that parents talk more to boys about money – having these conversations more often and in more detail – which can leave young women at a financial disadvantage as they reach independence. So what can we do?

We need to actively discuss numbers, and especially money, with our daughters and to make connections between maths and the things they are interested in. We need to keep telling them that they can do well in maths and that maths will be useful to them.

Below are some more videos. Please chose two – or more - that interest you.

Appendix 13 Printable Downloads

Printed Resources

Information Sheet – What is Maths Anxiety?

What is Maths Anxiety?

Maths Anxiety is a feeling of anxiety, apprehension, tension or discomfort when confronted by a maths problem. It can limit performance in certain situations and contexts, it's not linked to intelligence or ability. Anyone can experience maths anxiety, although girls and women are more commonly affected.

To find out more:
https://www.nationalnumeracy.org.uk/what-issue/about-maths-anxiety

What can be done about it?

If you think your child gets anxious doing maths . . .

- Remove any time pressures and avoid doing activities 'against the clock'.
- Use tools such as counters to reduce the demand on working memory. (This is the mental jotting pad we use when calculating. We use for remembering a phone number while we write it down. It is really affected by anxiety.)
- Unless the point of the activity is times tables, let your child use aids such as times tables charts for support, then they don't need to worry about remembering them. This will free up their brain to focus on actual understanding. For example, if the point is simplifying fractions, let them use a times tables chart.
- Put a time limit on how long they need work for – don't let them sit there for ages feeling stuck.
- Don't over-focus on test scores. Anxious children, or those who panic under time pressure, often don't show their full understanding in tests. Start reducing this anxiety by reassuring them that it's what they understand that matters, not what they can do in test conditions. Many children underperform in tests, not because they don't care but because they care too much.

- Remind them how much they have learnt already. Remind them of something they used to find hard and now do easily. Remind them of maths topics they do feel confident with.
- Teach them breathing techniques to help them calm their mind down.

- Use physical activities such as trampolining or kicking a football to channel stress and help relax the mind.

- Talk about how they are feeling – help them develop the vocabulary to express their feelings.

- Talk to the school. There are lots of adjustments that can be made in a classroom to reduce anxiety.

- Reassure you child that speed is not that important in maths. Some of the best mathematicians are slow.

- Combat negative thinking – encourage them to replace "I can't do Maths" with "I'm learning Maths".

- Try reading some books about anxiety to help start a conversation. Here are some . . .

Hey Warrior by Karen Young

The Huge Bag of Worries by Virginia Ironside

My Hidden Chimp by Prof Steve Peters

Starving the Anxiety Gremlin by Kate Collins-Donnelly

Sitting Still like a Frog – Mindfulness Exercises for Kids by Eline Snel

Yoga Pretzels – Fun Yoga activities for kids and grownups by Leah Ayres and Tara Guber

No Worries – an activity book for young people who sometimes feel anxious or stressed by Lily Murray and Sharie Coombes

Emotionary – Say what you feel by Cristina Nunex Pereira and Rafael R Valcarcel.

Information sheet – Growth Mindset

Where to find out more about a growth mindset

Books – children

Your fantastic elastic brain: Stretch in Shape it by JoAnne Deak

You are awesome. Find your confidence and dare to be brilliant at (almost)anything by Mathew Syed

Books - adults

Mindset – changing the way you think to fulfil your potential by Carol Dweck.

Online resources

The Big life journal website has a lot of resources on this topic.

Here's one.

https://biglifejournal.com/blogs/blog/teach-growth-mindset-kids-activities

Videos

- This is a TED talk by Carol Dweck, the professor behind the growth mindset idea.

https://www.youtube.com/watch?v=hiiEeMN7vbQ

Google: Developing a Growth Mindset with Carol Dweck

- This is a TED talk by Jo Boaler, an inspirational maths campaigner, about why there is no such thing as a maths brain . . .

Google: How you can be good at math, and other surprising facts about learning

https://www.youtube.com/watch?v=3icoSeGqQtY

- This is another TED talk by Jo Boaler. She shows how everyone can learn maths.

https://www.youtube.com/watch?v=al6gO9SLqBY

Google: Believe in your maths potential – set your self free.

- This is a short animation summarising the key messages of Carol Dweck's book *Mindset*

https://www.youtube.com/watch?v=2nF90sAW-Yg

Online articles

A short article showing about the impact parents can have on children's achievements.

https://www.youcubed.org/resources/parents-beliefs-math-change-childrens-achievement/

Information Sheet – Ways to bring mathematics into the conversation.

Ways to bring maths into the conversation . . . .

Remember . . .

- in passing
- no pressure,
- keep it light hearted
- don't ask children to 'do sums' on demand.

In the swimming pool . . . .

How deep do you think this is? Use your body to estimate.

How fast can you swim a length? Use a timer or count seconds.

How far do you think you've swum?

Compare different pools – do you think this pool is longer than . . ?

Look to see how warm the pool is.

Watch the pool attendant measuring the quantities of chemicals in the pool and talk about the importance of the right amounts of chlorine etc . .

Remember your swimming speeds and then look up the speeds/ distances of turtles, sharks etc . .

Out for a walk or cycle.

Use phones or smart watches to measure distances and look at the data together.

Make up challenges and compare data - lets do a km as fast as we can etc . . how long do you think it will take to get to the top of the hill – who's guess was closest?

Which bike is heaviest? Which wheels have the largest diameter?

Talk about how to measure tyre pressure – what measurements are used.

Look for unusual shapes, ie octogan spotting.

Why do you think windows are usually squares not circles? Can we spot any unusual shaped windows? What would happen if they were . . .

Why do you think roofs are triangular?

Out in nature

Look for repeating patterns, in pine cones, on flowers, on bark. Make a mandala pattern.

Look for symmetry

Compare leaves. Find the biggest, the smallest, find one closes to the size of your hand.

Search for tiny things – can you find interesting things smaller than your fingernail?

Estimate the height of trees (there are some fun ways to do this if you look online)

Improvise comparing the girth of tree trunks – use string or people stretching etc . .

Use a compass.

Follow a map, looking at the symbols on the map and what they mean.

Look at the gradients and how they're shown on a map.

If its windy, talk about windspeed and when measuring it might be important.

Get into the habit of looking at the data on a weather app before you head out.

Pets

How much does the cat weigh? Why is it useful to know that?

How much food does the dog eat? How long do you think this bag of food will last? How much do you think it costs to feed the dog every week?

How much water is in the fish tank? What temperature do we keep it at?

What's the dog most likely to be doing when we get home . . . . (Definitely / could be / probably won't be)

On a journey . .

Talk about how far, how long it will take, speeds on different roads.

Engage your child with the bus or train timetables.

Look at road signs with distances.

Talk about how much fuel you'll need – half a tank, quarter of a tank.

How is fuel measured? How much does it cost? Where is that displayed at the petrol station?

Show children how you to check tyre pressure and how its measured.

Number spot – first look for a 1, then a 2 etc . . how high can you get.

What do you think is the most common car make / colour?

Information Sheet – What to say if you child is stuck . . and you are too!

What to say if your child is stuck . . and you are too!

It's important to stay calm yourself. Look for positives in what they are doing that you can praise, such as perseverance or effort and empathise with their feelings. If you are feeling stressed or anxious, walk away.

Can you show me how you did it at school?

I didn't learn to do it that way . . .. . can you show me?

Do you have an example in your book we can look at?

Give me a few minutes to look at it – I can't think in a rush!

Can we break it down into parts?

Can we draw the problem?

Could we use counters / pasta shapes / coins to help?

I can see you're struggling / frustrated . . .

Its sooo frustrating when you can't remember something isn't it. I can understand how you're feeling.

When you learn new things it is hard. When you struggle, your brain grows.

Shall we look and see if there's an example online?

Lets pause there and come back to it. I'll have a think who could help us.

Lets leave it there and ask . . tomorrow.

You're trying really hard. You should be proud of that.

Information Sheet – What to say when your child does well

Useful Praise - What to say when they do well

- Praise specifically - 'You've really got the hang of division now haven't you!'.
- Avoid sweeping, general praise like 'You're so clever'. 'You're brilliant at times tables'. 'You're such a good boy'. These encourage a fixed mindset.
- Avoid comparing with other people – 'I'm sure you're the best in your class at this'
- Praise honestly – a child can tell if you're exaggerating.
- Praise the effort, rather than the outcome or the score.
- Being genuinely interested is praise in itself.

I can see you really took time to do this well.

I'm so impressed with your concentration.

That's an interesting strategy – did you think of it yourself?

All that practice paid off!

Looks like you were choosing to really challenge yourself.

You've shown your working out really clearly.

This looks like it took a lot of effort. Well done.

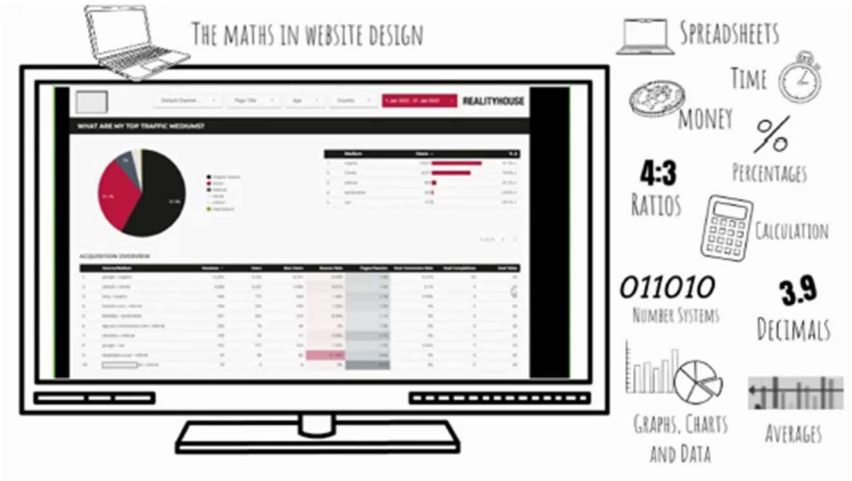
I remember how hard this was when you were first learning it – you've really got it now.

You must be proud of that!

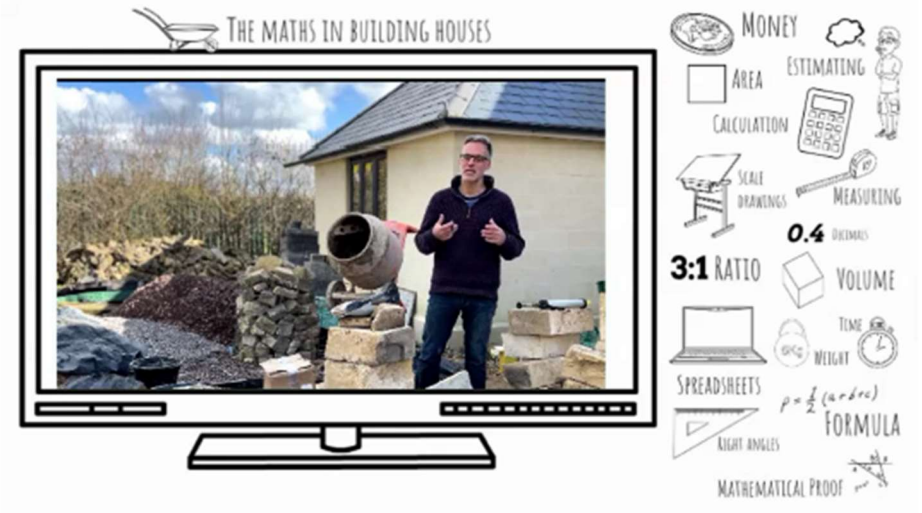
Tell me how you worked it out.

Printable Summaries of the ‘Maths in Jobs’ Videos


THE MATHS IN MAKING JEWELLERY . . .
SHAPE
SYMMETRY
0.6
DECIMALS
MEASURING LENGTH
EQUATIONS
CALCULATION
GEOMETRY
MEASURING TEMPERATURE
CHARTS AND TABLES
MEASURING WEIGHT
MONEY
PERCENTAGES


THE MATHS IN WEBSITE DESIGN
REALITYHOUSE
WHAT ARE MY TOP TRAFFIC MEDIUMS?
ACQUISITION OVERVIEW
SPREADSHEETS
TIME
MONEY
PERCENTAGES
4:3
RATIOS
CALCULATION
011010
NUMBER SYSTEMS
3.9
DECIMALS
GRAPHS, CHARTS AND DATA
AVERAGES


THE MATHS IN MUSIC
1,2,3,4
COUNTING
FRACTIONS
DOUBLING AND HALVING
SYMMETRY
REPEATING PATTERN
TRANSLATION


THE MATHS IN BUILDING HOUSES
MONEY
ESTIMATING
AREA
CALCULATION
SCALE DRAWINGS
MEASURING
0.4
3:1 RATIO
VOLUME
TIME
WEIGHT
SPREADSHEETS
FORMULA
RIGHT ANGLES
MATHEMATICAL PROOF


The Maths in Veterinary Medicine
Measuring Weight
Converting Units
15Kg
Counting
Time
Calculation
1:50
Ratio
Fractions
Measuring Capacity
Reading Scales
$p = \frac{1}{2}(a+b+c)$
Formula
0.54
Decimals

Appendix 14 Video Viewing Data for Mathsbreak.

Consent	Number of log ins	Intro	Motivation	Maths Teacher	Football	Jewellrey	Conservation	Web	Gender	Vet	Building	Music	complete v
Yes	3	1 play complete	1 play complete	no	no	1 play complete	3 play 100%	1 play 50%	1 play complete	1 play complete	No	1 play complete	7
Yes	6	1 play skipped mid	1 play 50%	3 play 75%	2 play 50/%	2 play 20%	1 play 10 %	1 play 5 %	No	1 play 40%	1 play 10%	No	0
Yes	2	1 play complete	1 play complete	1 play complete	2 play complete	No	No	No	1 play complete	No	No	No	5
Yes	1	2 play comp	No	2 play complete	2 play skip mid	1 play complete	1 play complete	No	No	2 play complete	No	1 play complete	6
Yes	2	1 play complete	2 play complete	2 play complete	2 play complete	1 play complete	1 play 80%	1 play 70%	1 play complete	No	No	1 play complete	7
Yes	2	2 play complete	1 play complete	2 play skipped thru	No	No	1 play complete	2 play complet	1 play complete	4 play - complete a	6 play complete	4 play complete and	8
Yes	1	No	1 play 20%	1 play 75%	1 play - final 5%	1 play 5%	1 play 20%	1 play skip thr	1 play 20%	1 play 50%	No	No	0
Yes	2	1 play complete	3 play complete and	5 plays complete an	2 play complete	2 play complete	1 play complete	No	1 play complete	1 play complete	1 play 25%	No	8
Yes	2	1 play complete	2 play complete	3 play complete	No	No	skip thru	skip thru	1 play 40%	No	No	1 play 60%	3
Yes	2	I play complete	I play complete	I play complete	No	2 play 60%	1 play complete	No	1 play complete	No	No	1 play 60%	5
Yes	1	1 play complete	1 play complete	2 play complete	No	No	1 play 75%	No	1 play complete	No	no	no	4
Yes	2	1 play complete	No	1 play 75%	1 play complete	1 play - 60% skip	2 play 50% skip m	1 play complet	1 play complete	1 play complete	1 play complete	1 play complete	7
mplete		10	8	7	4	4	5	2	8	5	2	5	