

Blocks to learning: Breaking down barriers

Blocks to learning

Many children encounter obstacles at some point on their learning pathway. Things which can make them struggle to make progress.

Sometimes they'll let you know, or you will notice it, or their teacher will tell you. Sometimes they will try to hide it, especially if they think it's going to be embarrassing to them, or cause them to be bullied at school.

None of this is either pleasant for the child, or helpful to their education.

I'll start by identifying a few of the blocks or barriers, then look at what you, as a home-educating parent can do to help. You may be surprised at what you can do, and what you can help your child(ren) to do.

Remember, you don't have to read the whole of this document, just the paragraphs to help with your child's need (although you may find it useful to go through the whole thing).

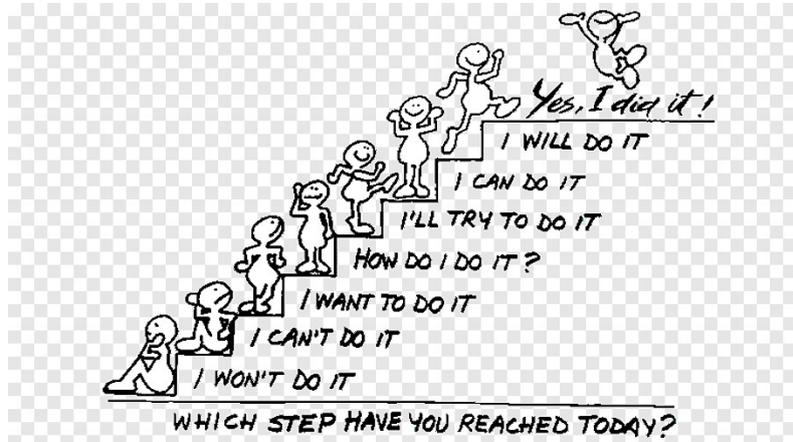
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Blocks to learning: Breaking down barriers

What are the blocks?

Whether we use the word obstacles, or terms like blocks or barriers, these are almost always things that a child can overcome, and some extra learning time in those areas can be a huge help. Here are a few of the more common blocks:

Handwriting



In adult life, some of us like to tend to our gardens as if we were competing for Britain in Bloom; others either prefer the wilderness look, or are simply too busy with more important things in life. It's much the same with children's handwriting, there are three very basic categories:

- First, the child who loves to try to make their writing look as neat and tidy as possible, sometimes to the point of losing track of *what* they are writing because they are so engaged in *how* they are writing it.
- Second, there is the child who finds writing a chore, and scribbles things down as fast as possible; wants to get it done and move on to the next thing.
- Then there is the child who has problems, either with learning how to control the movement of the pen, or with issues such as dyslexia.

If your daughter/son needs help here, you may be surprised at what you can help them achieve.

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What are the blocks?

Reading



"Studies show that most boys my age don't like to read. Who am I to tamper with statistics?"

Just as there are people who will apologise for their lack of attention to housekeeping, laundry, whatever, because they got stuck in a good book or magazine, so there are those for whom reading is a chore.

When a child loves reading, then learning many other subjects, especially English literature, history, modern languages – and many other subjects – will blossom.

Barriers to reading can be:

- Their teacher didn't make it interesting, exciting, enticing;
- They haven't practiced enough;
- They have some related difficulty (which may or may not have been identified, dyslexia for example).

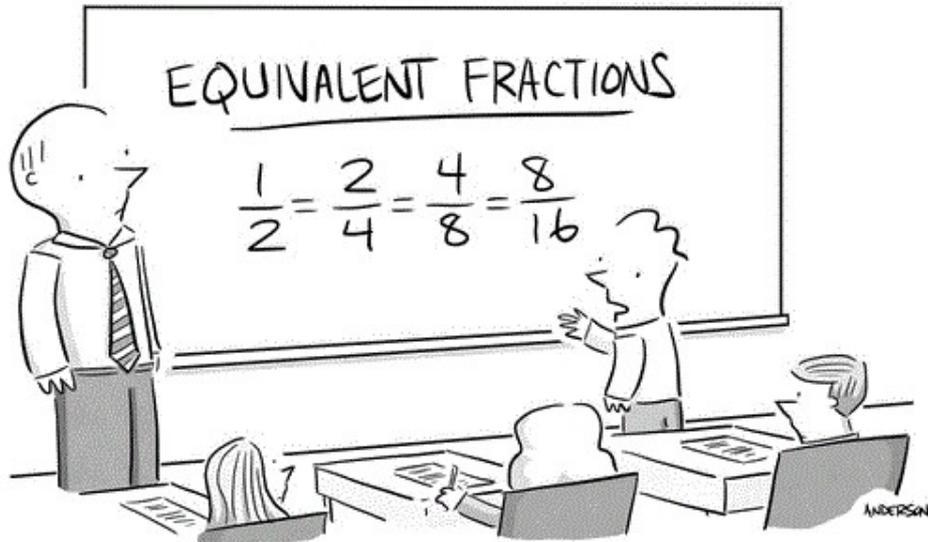
A lot can be done to help here.

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What are the blocks?

Maths/Arithmetic/Numeracy

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"I understand they all have the same value, but I have to tell you, the ones on the right feel like more bang for your buck."

Even in the digital age, everyone needs some level of numeracy, and a reasonable standard is essential for the study of many other subjects, especially the sciences, computing, the technologies, business/economics, but also areas as diverse as geography and music.

Again, at a very simplified level, there are three groups:

- Children who naturally "get" maths, and love it (although even in this group, there will be occasions when a new concept baffles them to start with ...)
- Children who get stuck because they haven't understood the way some new concept in maths has been explained to them
- Children who experience genuine difficulty in understanding areas of numeracy.

If your son/daughter is in either of the last two groups, there is plenty you can do to help, and there are loads of good resources to be had,

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Overcoming the blocks - Handwriting

For the child who loves writing – fine – they can be encouraged to use this in every subject. Just try to keep their focus on the subject matter as well!

For the child who finds writing a chore, whose individual letters are uneven, who sometimes cannot even read their own writing the next day, there's often a limit to how much even the most dedicated of teachers and learning assistants can do to help in school because of the number of children they have to work with. This is one you can help with.

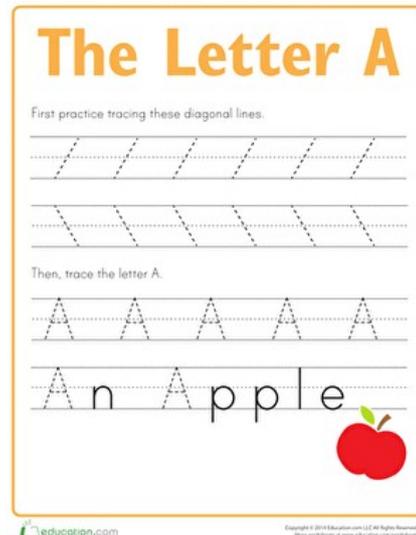
Encourage them to start slowly, to focus on the shapes of curves, and the directions of lines. You're quite likely to meet with some level of frustration and impatience here, especially at the start. All I can say is that it pays to gently persevere, to keep encouraging. There are plenty of resources around; I'll share some worksheets to help.

Initially, it helps just to keep working on exercise using lines and curves, until your child can uniformly repeat sets of lines and curves. Some children have problems creating straight vertical lines, lines slanting to the left or right, or to get the curves they need for the letter o, or to join the round and straight parts of b, d, p, q ... and so on. So we start with lines and shapes; once those are mastered, transforming them into letters can be much more rewarding.

For example, take a look at the image on the right:

The pupil has to get the right leaning and left leaning diagonal lines to work comfortably, before they can get to make the capital letter A work.

This may seem like “going back a long way”, or like a lot of work, but it can be very, very beneficial even with Key Stage 3 children whose writing isn't so legible [my own Art teacher, back when I was in year 7 (sometime back in the last century!) went back to sheets as fundamental as this to help some of us. I remain grateful to her.]



The sheet shown here is an example of the many sheets which you can download free at:

<https://www.education.com/worksheets/writing/>

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What to write with?

The pen your child is writing with can also have a huge influence on their writing.

Again, what works for one person doesn't work for another. For me personally, if I am to deliver my best, whether writing sentences, maths examples, marking pupils' work, or putting notes into a music score, I prefer to work with a fountain pen.

For many people (from primary-age children right up to my octogenarian mother) ballpoint or roller-ball pens with a slightly rubbery "comfort grip" can be a game changer. Pen maker Pilot makes a series named V5, some of which have a nice rubbery comfort-grip area. You'll see similar pens from other makers.

Pen thickness is another important factor.

Both the thickness of the writing tip, and the thickness of the barrel of the pen (the bit you hold).

Fatter bodies

It is worth experimenting with pens that are slightly thicker to hold, this encourages the writer to flex their finger muscles a little more, and actually put a little more work (and therefore concentration) into their writing.

Fatter lines

Broader writing tips can also be a great help. Many of the roller-ball type (like the Pilot V5 series I mentioned) are available with tips numbered 0.3, 0.5 and 0.7 (some even go up to 1.0) – this is the line thickness in millimetres. 0.5 is "average", but if your child is making tiny, scrawly letters, it may well be worth switching to a broader tip size to encourage greater pen movement. If the tip is thicker, they have to make their characters (letters and numbers) bigger in order to be able to recognise them.

Finger exercises

There are squeezable egg-shaped balls available – marketed either as stress balls or for physiotherapy. The idea is they can be squeezed tightly, either for stress relief (I know call-centre agents who rely on these to prevent themselves from screaming!), or for physiotherapy (to rebuild finger strength after an injury, for example). These can be another useful aid to your child's writing – developing the finger muscles in their writing hand will give them better control over the pen.



[Actually, don't just stop with the writing hand – developing this in the fingers of both hands can lead to better control of their cutlery at the meal table, and will help with playing many musical instruments, from piano and guitar to pretty much any stringed or wind instrument...]

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Overcoming the blocks – Handwriting (continued) and Reading

Dyslexia, Dyspraxia and other barriers to writing

Dyslexia is a condition where people may have difficulty recognising the differences between some letters, sometimes write letters “back to front”, having difficulty with the differences between some letters: b and d , p and q , or s, 5, 2 and z can be a huge barrier to learning and communication.

A lot of research has been put into understanding dyslexia, and what can be done to help people to overcome it.

The issue of dyslexia and moving the pen (in some cases a form of dyspraxia) may need specialist help, but there is a lot you may be able to do to help here.

This site is a good starting point:

<https://www.understood.org/en/learning-thinking-differences/child-learning-disabilities/dysgraphia/difference-between-dysgraphia-dyspraxia>

Dyslexia can also be a barrier to reading – and helping to understand and work with it will usually help both reading and writing skills.

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Overcoming the blocks - Reading

Encourage reading.

With younger children, it helps to sit with them and read with them, helping them first identify and understand words, then put the words in context so they understand what the sentences are telling them.

The more they begin to understand the meaning – the story – the words make up, the more they will start to engage and enjoy reading. As your child gets older (and this can easily be as early as 4 or 5) so you need to make sure the books she or he is reading are interesting – books on football are no use if they're not really interested in sport...

With younger children, you should also encourage reading aloud to you, reading you a story from a book. The next step from here, is to discuss the story from the book, seeing how much they remember from what they have just read. As their reading skills improve, so should their understanding and retention (memory) of what they have just read.

Get radical!

This one may or may not go down well, but it's worth allocating a time in the evening, or one evening a week (or a set time a couple of evenings a week...) when there is No TV – and no video games or other stuff on the computer, 'phone... and encourage reading – ideally from books, or suitable magazines (with paragraphs of text rather than cartoons!)



Encouraging reading can help **enormously** with your child's ability to progress in other subjects.

As your child gets older, and certainly by Key Stage 3, you should be able to start to encourage them to grasp the concept of *independent learning* – that is learning for herself or himself. This can only be really effective if s/he is able to focus. Concentrate and read whole pages or sections of a book (or similar text online) and make sense of it.

As a teacher, I find it hugely frustrating when students, particularly A Level students,

come to me with questions which they can perfectly well answer by reading the paragraph with the appropriate title in the text book. Encouraging independent learning from an early age helps to encourage your child to want to look for knowledge, and think for himself / herself. It also discourages laziness!

Blocks to learning: Breaking down barriers

Overcoming the blocks - Maths/Arithmetic/Numeracy

Some kids just “get” maths. It’s like swimming, or playing a guitar – for some people it’s naturally intuitive.

Some pupils have a block with maths because it wasn’t taught in a way they can understand. For almost ever mathematical concept, from addition and subtraction, right up to the mechanics of Calculus and Quantum mechanics, there are usually at least three ways to explain how to do something. Very, very often, if a child cannot understand a concept (like long multiplication, for example) it’s because their teacher hasn’t shown them the way that works for them.

I am passionate here to use the words of that great scientist and thinker, Albert Einstein:

Albert Einstein wrote, “Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid.”

And that is very, very true in the maths classroom.

With a class of 30 children of very mixed “ability”, the maths teacher could try explaining one method for long multiplication – you know, the one “everybody uses”. Let’s say 24 of the kids get it. The laziest of teachers might stop there. (Yes, sadly, I have seen this).

A better teacher will then set work for those 24, and take the remaining six to one side, and explain again, perhaps using the “box method”. If the six now “get it” problem solved, everyone has a method they can use to solve the same problem, even if they use different methods. If one pupil still doesn’t get it, the best teacher will now set the 5 pupils who got method 2 some exercises, and try a third method with that one remaining pupil.

That does not mean that last remaining child has a problem; it doesn’t justify the rest of the class calling him or her “thick” – it’s just that s/he thinks in a different way. Fish were never meant to climb trees.

Here are some examples for long multiplication – there’s a similarly wide range of methods for many other aspects of mathematics.

Long multiplication – the “classic” method

$$\begin{array}{r} 58 \\ \times 32 \\ \hline 16 \\ 100 \\ 240 \\ + 1500 \\ \hline 1856 \end{array}$$
$$\begin{array}{r} 21 \\ 58 \\ \times 32 \\ \hline 116 \\ + 1740 \\ \hline 1856 \end{array}$$

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Long multiplication: Examples of some different methods

An expanded method

(similar to the "classic" method)

Once you have the hang of extended multiplication, you can apply it to larger numbers. Try these:

a

	2	4	5
x	3	2	

(2 × 5)
(2 × 40)
(2 × 200)
(30 × 5)
(30 × 40)
(30 × 200)

b

	3	2	9
x	4	3	

(3 × 9)
(3 × 20)
(3 × 300)
(40 × 9)
(40 × 20)
(40 × 300)

c

	2	2	3	8
x	5	2		

(2 × 8)
(2 × 30)
(2 × 200)
(50 × 8)
(50 × 30)
(50 × 200)

The Box method

Long multiplication

- a) 17x23
- b) 32x42
- c) 19x45
- d) 56x46
- e) 12x346
- f) 32x541
- g) 27x147
- h) 39x213

Box method (partitions)

36 x 43

x	30	6	
40	1200	240	1440
3	90	18	108
+			

Column Method

36 x 43

3	6
×	4
×	3
+	

The Chinese Method

Long Multiplication

Learning Objective: Calculate the product of two or more integers.

Find the product of:

3.2 × 4.2 = 13.44

a) 32 x 42 = 1344

ANS

4.8 x 5.6 = 26.88

b) 48 x 56 = 2688

ANS

c) 157 x 35

ANS

mr-mathematics.com

Where to go from here with Maths?:

There are lots of excellent resources online; although it may take a little while to identify the right ones for your child.

A very good place to start is the **NRICH Project** at the University of Cambridge, their website has links to a wealth of resources for every age and Key Stage.

<https://rich.maths.org/>

Blocks to learning: Breaking down barriers

How long should we take ... ?

A number of parents have asked me whether it's sensible to spend "extra time" during the start of home-schooling, to try to overcome a more serious block to their child's learning (like handwriting, literacy or numeracy) before going much further with the child's more general education.

My general view here is: **Heck, Yes!**

If your child is having trouble with writing, that will affect their progress in any subject where writing is required, from English and maths through to the humanities, languages, sciences... Spend some good quality time and focus on the writing now; once it ceases to be a problem, so it ceases to be a barrier to learning in other subjects.

If your child is having problems with reading, again, focus on this as a priority and overcome it – they will thank you for it in the long run, and will be able to make far, far better progress in all other subjects afterwards.

Similarly with maths/numeracy – this is an essential skill, and has a huge influence on how your child can progress in the sciences, computing, business studies, geography, even music to some extent.

DO

- Plan some real, quality time to tackle these barriers head-on.
- Focus and prioritise these things for a while.
- **Make sure you keep it in manageable chunks** – No kid is going to like sweating through three solid hours of writing or sums every morning! Break it up, intersperse it with other activities and topics, but hit the problem area 2 or 3 times in each teaching day.
- Persevere until you win – you're doing your child a huge favour!
- **Try different methods.** Don't bang your head on the wall. There is more than one way to tackle most topics, and different approaches work with different learners. It's what we call *differentiation* in the teaching profession. If you have two or more children, don't automatically assume that what works for the first one will automatically work for the other(s).
- **Keep the love; keep home their "safe place"**. Stay positive; stay cool.

DON'T

- Get obsessive with three solid hours of maths (or writing, or whatever) every day. This won't help learning, or make your son/daughter a happy bunny.
- Stress out if you feel you're not getting anywhere. Sometimes it takes a while of gentle perseverance before you suddenly hit that magic moment, that slight change in approach, or whatever that just "clicks".
- Stress out if you're running out of ideas. Within the Unit Support Threads there are other parents and experienced teachers who have faced what you are facing. One of us will either have the solution, or be able to point you at someone (or somewhere on the Web) that can help.
- Expect miracles. If your child has a barrier to learning that his or her school has failed to address in the last school year, it may take you a few weeks (sometimes more) to overcome that.
- Above all else, please try never to get impatient, or use words like "stupid" – however frustrated you may feel. There's usually another angle, even a very tiny change, that will "click" and make the difference.

ALWAYS

Stay positive. Stay loving. Stay safe.