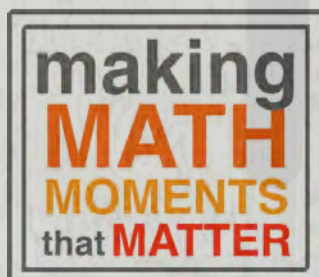
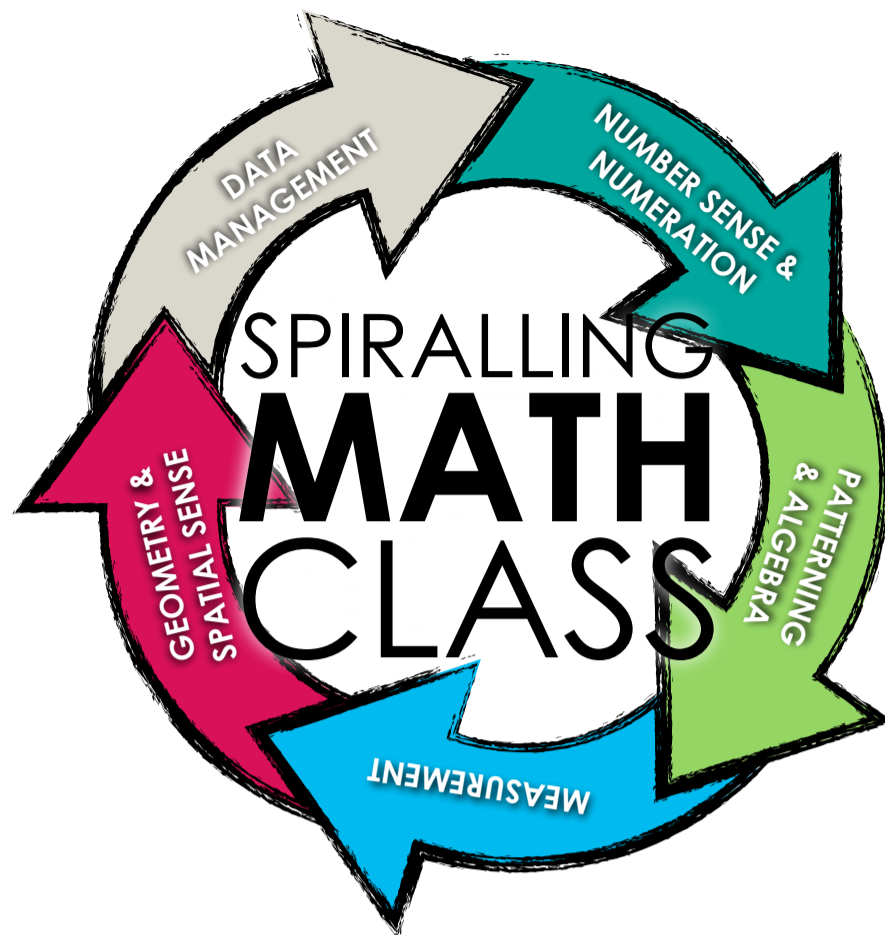


9
**STRATEGIES
TO BEGIN
SPIRALLING
NOW**





In This Guide, We'll Learn:

Starter Strategy #1 - Find a Buddy	_____	2
Starter Strategy #2 - Spiralling Warm-Up or Practice Problems	_____	3
Starter Strategy #3 - Think Back Thursdays	_____	4
Starter Strategy #4 - Interleave Your Assessments	_____	4
Starter Strategy #5 - Lag Your Homework	_____	5
Starter Strategy #6 - Look For Multiple Connections In Tasks	_____	6
Starter Strategy #7 - Divide Your Units Into Spirals	_____	7
Starter Strategy #8: Spiral a Single Concept	_____	7
Starter Strategy #9: Interleaving Activities and Investigations	_____	8
Spiralling Resources	_____	9



So glad to know that you've made it to the final section in this Spiralling Math Class 3-Part Video and Blog Post Series! It's clear that you're looking to dive into spiralling in some way, which is great!

Spiralling is a pretty complex way to organize your course, but with positive implications for student learning. If you're feeling a bit scared, stressed or anxious, that's O.K.! I am certain that with all of the ideas I'll be sharing with you in this Cheat Sheet, you will be able to find a method that will help you get started based on your current comfort level.



COMPLEX



COMPLICATED

Although I shared **6 Steps to Start Spiralling in Your Math Class** previously, the reality is that you might not be feeling ready to take the plunge by spiralling the lesson content in your course. Rather than avoiding spiralling altogether, why not leverage the research around spiralling, interleaving, spaced practice and mixing by starting with one of the following easy to begin strategies.

After reading the many ideas shared by the Math Twitter Blogosphere in response to a **tweet by Jon Orr**, I've managed to summarize much of what was shared into these **9 Spiralling Starter Strategies**. All of these strategies are really useful ideas that can be used as very non-threatening first steps to spiralling, so let's dive in!

Note: Most of the images and buttons below are clickable, so you can check out these resources in real time. (If the image is not clickable, it means the resource is no longer live.)

Starter Strategy #1 – Find a Buddy

There is nothing more scary than taking on a new idea alone. The best part is, you don't have to! Reach out to colleagues in your school who might be open to trying something new and work out a plan together.

Maybe you don't agree on everything, but at least you'll have a sounding board to share and borrow ideas from.

Mary Bourassa recognizes how big of a jump spiralling is and suggests seeking mentorship from someone who has tried spiralling in some capacity:

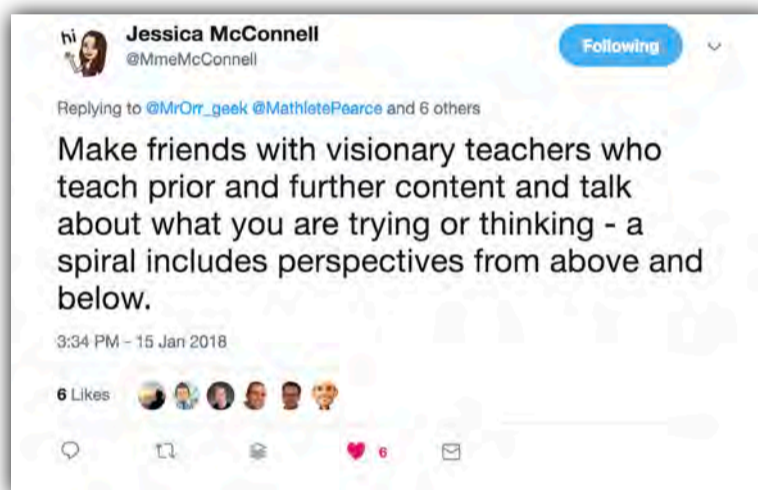


Can't find someone in your building or close by to collaborate with? **Mr. Hogg** urges you to use online resources that are free and accessible anytime such as reading teacher blogs and connecting with other math educators on Twitter.



Jessica McConnell takes seeking out math teachers online a step further recommending that you not only connect with math teachers who teach the same grade level, but also connect with teachers who teach younger students and with those who teach older students. Then, you can make better decisions of where and when to introduce topics as well as how long to anticipate spending on those concepts.

**CAN'T
FIND A
BUDDY?**



Starter Strategy #2 – Spiral Warm-Up or Practice Problems

Whether you call them bell work, bell ringers, warm-ups, or mind busters, many math teachers use some form of warm-up task to begin their lesson.

Early in my career I would make the warm-up problem related directly to the previous lesson, which seemed to work nicely. But why not stretch back and warm up to a problem involving a topic we haven't seen in a while to build that retrieval strength?

LESSON PLAN DAY BOOK	
MONDAY	TUESDAY
12 MINDS ON NUMBER SENSE ADDING AND SUBTRACTING FRACTIONS	13 MINDS ON NUMBER SENSE MULTIPLYING WHOLE NUMBERS BY A FRACTION



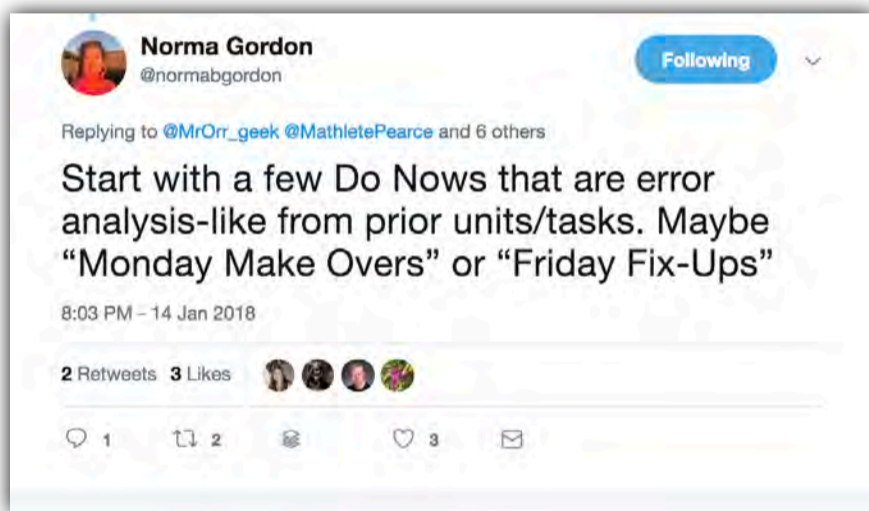
LESSON PLAN DAY BOOK	
MONDAY	TUESDAY
12 MINDS ON NUMBER SENSE ADDING AND SUBTRACTING FRACTIONS	13 MINDS ON PROPORTIONAL RELATIONSHIPS RATIOS, RATES AND PERCENTAGES

Once you're comfortable interleaving your warm-up problems, you might consider interleaving the independent practice problems you plan to assign. Instead of assigning problems that are all related to the content we focused on today, why not assign some from today and some from the past?

Starter Strategy #3 – Think Back Thursdays

Consider taking one day of the week to engage in your interleaving investigations. While it can be daunting to think that you are going to spiral all of your well organized and thoughtfully planned units of study, it's definitely reasonable to think that you'll commit one day a week to mixing things up. While I'm pretty proud to have come up with "Think Back Thursdays" as an option, the reality is that you can pick any day of the week and call it whatever you'd like!

A variation of this idea was brought to my attention by **Norma Gordon** when she recommended Monday Make Overs or Friday Fix-Ups where you spiral back to concepts students are struggling on for a re-attempt at learning.



LONG RANGE PLAN				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
3	4	5	6	7
NUMBER SENSE			THINK BACK	
10	11	12	13	14
NUMBER SENSE			THINK BACK	
17	18	19	20	21
PROPORTIONAL RELATIONS			THINK BACK	
24	25	26	27	28
	MEASUREMENT		THINK BACK	

Starter Strategy #4 – Interleave Your Assessments

When I was teaching in units or blocks, I would typically give assessments throughout the unit and at the end of the unit. Consider giving assessments at the same point you would during your current unit of study, but give an assortment of problems related to the current unit and some from previous units. While I think this is a great way to slowly introduce the concepts of spiralling in your math class, I think using this strategy would be most beneficial if introduced by a teacher who is progressive in the area of assessment.

ASSESSMENTS

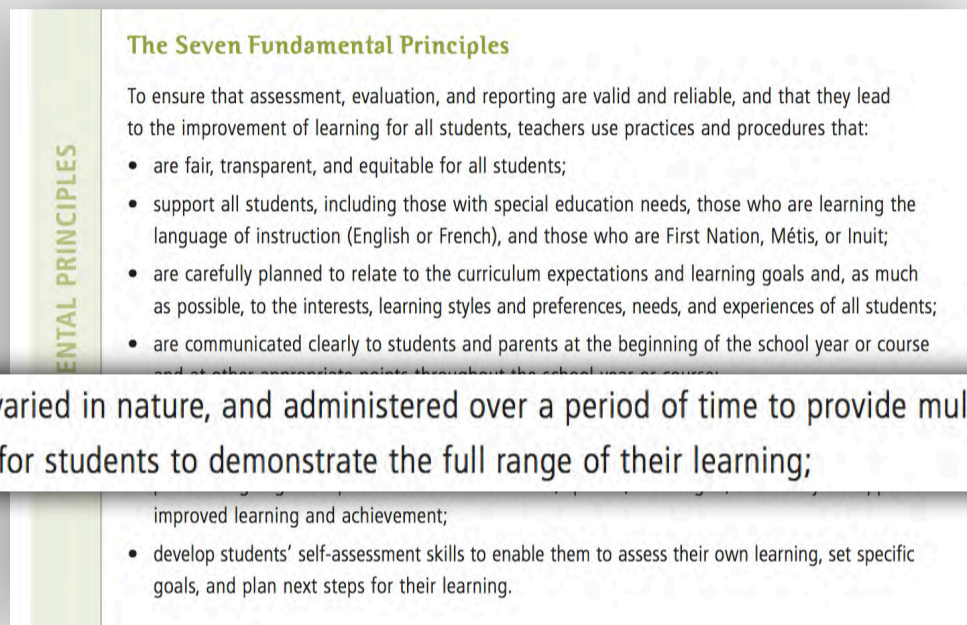
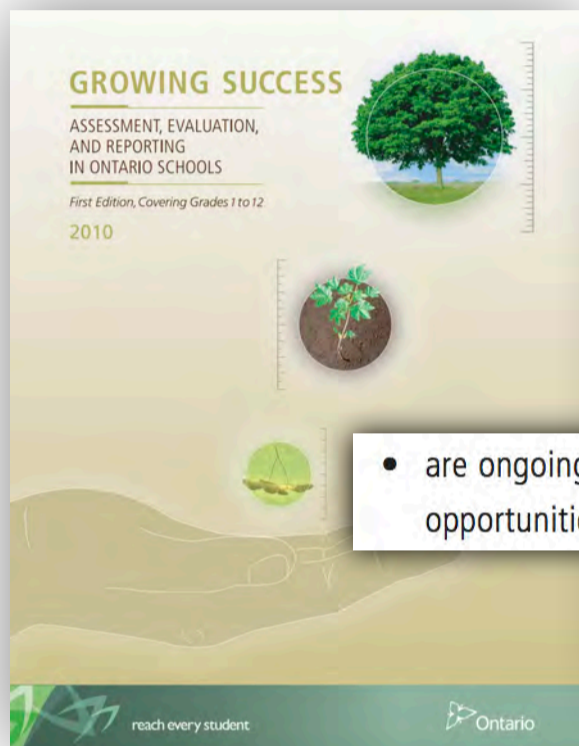
- Q1) UNIT 4 MATERIAL
- Q2) UNIT 1 MATERIAL
- Q3) UNIT 4 MATERIAL
- Q4) UNIT 2 MATERIAL

What I mean by this is that the assessments we are giving our students are actually being used as a way to **push the learning further** rather than simply labelling a student with a letter. While this strategy is easy to implement on paper, I feel that it would be more of a punishment for students if the teacher using the strategy does not believe in giving students multiple opportunities to learn and demonstrate that learning.

ASSESSMENT
used to promote:

 **LEARNING**

 **LABELLING**



• are ongoing, varied in nature, and administered over a period of time to provide multiple opportunities for students to demonstrate the full range of their learning;

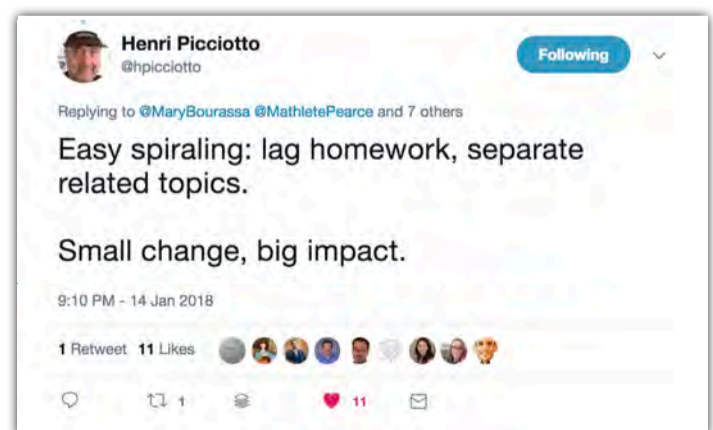
Growing Success: Assessment, Evaluation and Reporting in Ontario's Schools : Covering Grades 1 to 12. Toronto: Ministry of Education, 2010. Print.

*“Assessments should be used as a tool to **push learning forward**, not for **labelling** and **sorting**.”*

 [CLICK TO TWEET](#)

Starter Strategy #5 – Lag Your Homework

If you are teaching a math course where homework is developmentally appropriate - say Grade 7 or so and up - **Henri Picciotto** suggests that you “lag” homework. Lagging homework involves having your students practicing concepts from the past - say topics from last week - instead of working on a brand new concept introduced that day. The logic here is that students are given some time to digest the new ideas and are not left all alone at home with an unfamiliar concept to work on.



Here's an example of a long range plan with a homework schedule that corresponds to the same topic introduced each day on the left vs. a possible "lagged" homework schedule on the right:

Typical Lesson and Corresponding Homework Schedule

LONG RANGE PLAN				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
3	4	5	6	7
NUMBER SENSE				
10	11	12	13	14
NUMBER SENSE			PROPORTIONAL RELATIONS	
17	18	19	20	21
PROPORTIONAL RELATIONS				
24	25	26	27	28
PR	MEASUREMENT			

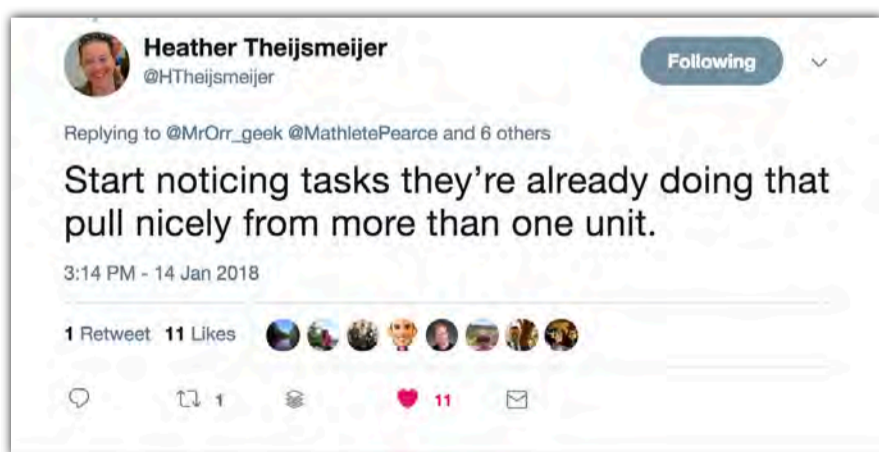
VS.

Lesson Schedule With Lagged Homework

LONG RANGE PLAN				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
3	4	5	6	7
LESSONS				
HOMEWORK				
10	11	12	13	14
LESSONS			LESSONS	
HOMEWORK			HOMEWORK	
17	18	19	20	21
LESSONS				
HOMEWORK				
24	25	26	27	28
	LESSONS			
	HOMEWORK			

Starter Strategy #6: Look For Multiple Connections in Tasks

It is highly likely that you are already using some really rich tasks throughout your course. Both **Ve Anusic** and **Heather Theijsmeijer** suggest we can easily start by spending more time on intentionally noticing how the tasks you are already using connect to other topics.



By looking at tasks through the lens of different big ideas or strands in your course, you will have an easier time making multiple topic connections while still feeling as though you're organizing your curriculum in blocks.

Starter Strategy #7: Divide Your Units Into Spirals

If you've taught your course in the past using blocks or units, why not take that long range plan and simply chop up the units into smaller chunks. For example, you could take your first 3 days of each unit and make them one spiral, then the next 3 days from each unit for your second spiral, and so on.

LONG RANGE PLAN				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
3	4	5	6	7
NUMBER SENSE				
10	11	12	13	14
NUMBER SENSE			PROPORTIONAL RELATIONS	
17	18	19	20	21
PROPORTIONAL RELATIONS				
24	25	26	27	28
PR	MEASUREMENT			

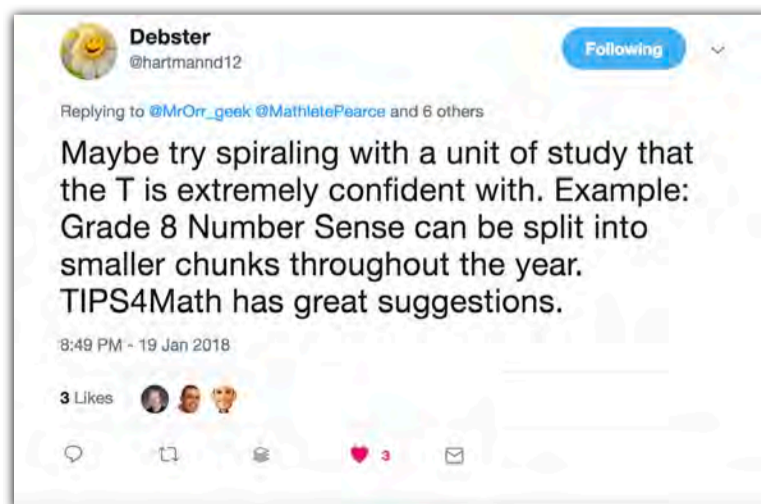
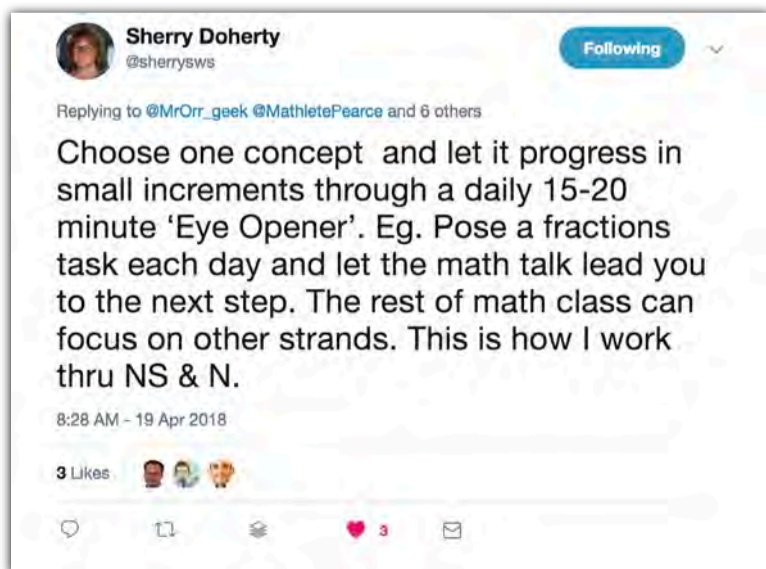
VS.

LONG RANGE PLAN				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
3	4	5	6	7
NS	NS	NS	PR	PR
10	11	12	13	14
PR	M	M	M	NS
17	18	19	20	21
NS	NS	PR	PR	PR
24	25	26	27	28
NS	NS	PR	PR	M

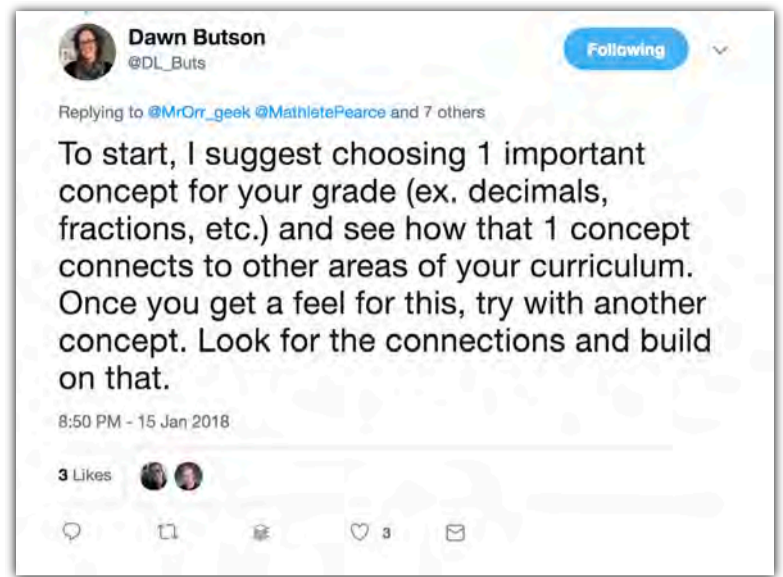
The benefit here is that you will still feel like you are organized in units, but your units are just being spread out over longer periods of time.

Starter Strategy #8: Spiral a Single Concept

Another great starter strategy was brought to my attention by [Sherry Doherty](#) and [Deborah Hartmann](#). They suggest starting with a big idea - like fractions - or a single unit - like say measurement - and sprinkling those lessons, activities and investigations throughout your regular units as a manageable first step.



Ms. Butson also suggests starting with one important concept, but rather than spreading your lessons related to that idea throughout the course, why not focus specifically on how that specific concept connects to other areas of your curriculum and intentionally pulling that concept out as often as possible. Once you get a feel for how to do that with one concept, you move on to try doing the same with another concept. Eventually, you'll be full blown spiralling and making multiple topic connections daily!



Starter Strategy #9: Interleaving Activities & Investigations

Finally, the last of the spiralling starter strategies was mentioned by **Dave Lanovaz**. He suggests that you get started by keeping your units or blocks in tact, but spiralling activities that you might do throughout a unit with a mix from other units across the course. So while your long range plan will feel like you are maintaining the same order and structure you've used in the past, the activities being introduced are mixed from different parts of the course. Seems pretty doable!



Which Spiralling Starter Strategy Are YOU Going to Try?

So, there you have it; **9 Spiralling Starter Strategies** that you can use to get your feet wet with spiralling. If you've made it this far, that means that you must be seriously considering implementing spiralling in some capacity.

While you can attempt all 9 of these strategies, I'm going to suggest that you pick one and fully commit to implementing it. Be sure to download and print the spiralling cheat sheets included with each section in this series and come back to it for reflection and planning your next step to integrating spiralling and interleaving in your math class.



Make yourself small, attainable goals and you will find yourself confidently spiralling your classroom in the way that suits YOU and your students best.

Resources

People From The Math Twitter Blogosphere (#MTBoS) Who Spiral & Their Blog Posts

Jon Orr [[Twitter](#) | Blog: [Teaching With Spiralled 3 Act Tasks](#)]

Alex Overwijk [[Twitter](#) | Blog: [Spiralling Post](#)]

Henri Pincciotto [[Twitter](#) | Blog: [Lagged Homework](#) | Blog: [Separating Related Topics](#)]

Mary Bourassa [[Twitter](#) | Blog: [Spiralling Post](#)]

Dave Lanovaz [[Twitter](#)]

Mr. Hogg [[Twitter](#) | Blog: [Spiralling Post](#)]

Jimmy Pai [[Twitter](#) | Blog: [Spiralling Posts](#)]

Jessica McConnell [[Twitter](#)]

Norma Gordon [[Twitter](#)]

Ve Anusic [[Twitter](#)]

Heather Theijsmeijer [[Twitter](#)]

Dawn Butson [[Twitter](#)]

Great Books, Articles and Documents Supporting Spiralling and Interleaving

How We Learn [[AMAZON](#)]

Make It Stick [[AMAZON](#)]

Interleaved Mathematics Practice [[ARTICLE](#)]

The Key to Interleaving: Jumble It Up! [[ARTICLE](#)]

The Interleaving Effect: Mixing It Up Boosts Learning [[ARTICLE](#)]

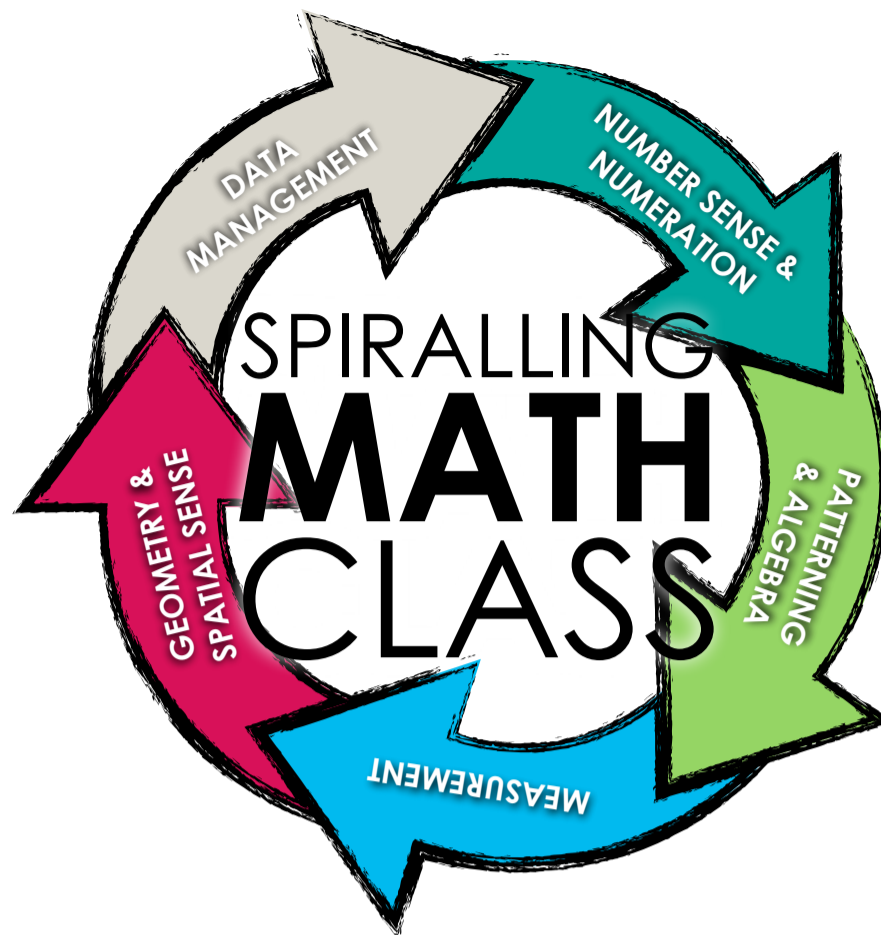
Research Supporting Spiralling and Interleaving

Interleaved Practice Improves Mathematics Learning (Rohrer, Dedrick, & Stershic) [[PDF](#)]

The benefit of interleaved mathematics practice is not limited to superficially similar kinds of problems (Rohrer, Dedrick, Burgess) [[PDF](#)]

Interleaved Practice Enhances Skill Learning and the Functional Connectivity of Fronto-Parietal Networks (Lin, C. H. J., Chiang, M. C., Knowlton, B. J., Iacoboni, M., Udompholkul, P., & Wu, A. D. 2013) [[PDF](#)]

Why interleaving enhances inductive learning: The roles of discrimination and retrieval (Birnbaum, Kornell, Bjork, Bjork) [[PDF](#)]



I'm **extremely excited** that you've dedicated so much time to learn about spiralling with me. I hope you've found this resource useful for your own professional learning and I look forward to continue learning with you in an upcoming blog post, video or course real soon!

If you know of a friend or colleague who would benefit from this video series, please share on your favourite social media platform.

What are you waiting for? Let's get spiralling!

Read About Spiralling on the Blog



WATCH & READ