Implementing a Tiered System of Supports at the Middle Grades

HOW ONE SCHOOL IS APPROACHING MATHEMATICS INTERVENTION

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About the presenter...

- Lamoille Union Middle School in Hyde Park, VT
- Grades 7 and 8
- Currently the Math Specialist
- Dedicated to middle level philosophy, math education, collaboration, and working hard to provide students what they need
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Goals for today's presentation...

- Summarize the work my department and I have been doing on our system of RTI in the middle school the last two years.
 - Why we went to the model we are using
 - How we are implementing the model
 - Schedules, topics, assessments, and data
 - Positives and areas to improve upon
- Look at intervention and data in a new way
- Foster discussion about the best way to meet all students' needs

PLEASE ASK QUESTIONS!

RTI? MTSS? What is it all about?

<u>RTI – Response to Intervention:</u>

- Intervention is intentional and systemic

Multi-Tiered System of Supports:

- Supports wrap into PLP's and extend beyond traditional "academic interventions"



Snapshot: Lamoille Union Middle School

- A rural Vermont school
- Supervisory Union: five sending elementary schools (K-6) and one middle/high school (7-12)
- On average between 120-140 students per grade level (7/8)
- Four interdisciplinary teams
- Four special educators
- Average class sizes between 15 and 18
- High migrant population
- About 15% IEP
- 5% 504
- 0% ELL

History of RTI: Lamoille Union Middle School

 3efore 2011 3efore 2011 3efore 2011 3efore 2011 3efore 2011 3efore 2011 3efor 2012-2013 3efor 3till is middle school 3efor		in the serving 4-6 am for the	2014-20 - Wee Sem perf - Push mod inter	-2015 /eekly "Math eminar" for high erformers ush in/pull out todel for tervention 2015-2016/2016-2017		
 2011-2012 "Algebra 1" now offered in the middle school "Math labs" created. Students pulled from Applied Academics Can serve 6-8 students per grade/per team/per quarter Focuses on basic skills 		2013-20 - "Adva repla - "Mat but n servii stude	 2013-2014 "Advanced Math" replaces "Algebra 1" "Math Labs" continue, but many "spots" serving Tier III SPED students 		 2015-2016/2016-2017 Advanced 8th Math covering grade level curricula New model for interventions and enrichment opportunities. 	

NCTM Annual Meeting: BOSTON 2015

A new way of looking at the triangle:

Brittany Horton North Middle School Rapid City, SD



BROKE APART TIER II

Lamoille's New Triangle...

How I adapted North Middle School's work at Lamoille...

LUMS RTI Model

Overarching Philosophy...

ALL TEACHERS ARE RESPONSIBLE FOR INTERVENTION

- It is not just left up to the interventionist or specialist
- Special educators are providing services to their students at the same time
- Students can move fluidly in and out of targeted groups based on their knowledge and performance of the current topic

- EST's are used to support students who continue to struggle and for whom the interventions are not working

Implementations/Decisions...

- How to fit it into the schedule
- Topics and Curriculum
- Assessing students, making groups, and progress monitoring

Fitting it in the schedule...

- Modified Block Schedule
- Students have long blocks (85 minutes) twice a week
- On Fridays they have a half of a block (42 minutes)
- The other two days are "skinny" (half) blocks reserved for reinforcement, intervention, and enrichment
- My schedule has flexibility to grade assessments and analyze data

Monday (G) Tuesday (B) Wednesdav(G) Thursday (B) Friday (G) Math Block One Language Math Language Math 8:15-9:40 Arts Arts Science Language Arts Block Two Social Science Social Science 9:44-11:10 Studies Studies Social Studies 11:10-12:06 Break/Lunch Break/Lunch Break/Lunch Break/Lunch Break/Lunch Block Three Language Arts Language Arts 12:10-12:54 Applied Applied Applied Academic Academic Academic Classes Classes Classes Block Three Social Studies Social Studies 12:56 - 1:38 Math Applied Math Applied Block Four Academic Academic Team Time 1:42-3:04 Classes Classes Science Science

Student Schedule Sample

Spiraling Topics within the Curriculum...

8TH GRADE OVERVIEW

TRIMESTER	LONG BLOCKS	SKINNY BLOCKS			
1A	Equations and Inequalities	Proportional Relationships			
1B		Transformations			
2A	Linear Relationships	Equations and Inequalities			
2B		Linear Relationships	7TH GRADE O	VERVIEW	
3A	Pythagorean Theorem and Irr. Numbers	Pythagorean Theorem	TRIMESTER	LONG BLOCKS	SKINNY BLOCKS
20		Problem Solving Posterme	1A	Ratios and Proportional Relationships	Fraction Operations
30	3d Geometry	Problem Solving Boolcamp	1B		Integers and Integer Ops
			2A	Expressions and Equations	Ratios and Proportions
			2B		Percents
			3A	Statistics and Probability	Expressions, Equations, and Inequalities
			3B		Problem Solving Bootcamp

Assessing Students...

- SBAC
- Universal Screener: SMI (3-4 times a year)
- LNSU Benchmark
- Intervention Progress Monitoring (Pre, Mid, Post)

Progress monitoring and assessment...

- Pre, Mid, Post (This year we probably won't do many "mids" with all of the initiatives)
- Assessment design
- Intended to be completed in 10-15 minutes
- Straight skills (integers, simplifying expressions)
- OGAP type problems (fractions, ratios and proportions)
- Math specialist collects all and scores to promote consistency
- Data is shared back with math classroom teachers to inform interventions
- Pre-assessments are discussed at a PLC when possible
- Pre to Post data is analyzed to show student growth/effectiveness of interventions

Sample Pre-Assessment

LNSU BENCHMARK: Solve multi-step equations involving simplification of expressions.

1. Solve the problem below to determine a value for x.

3x + 4 + 5x = 20

2. Ava solved the problem below *incorrectly*. Circle and describe Ava's error.

$$5(x + 2) = 20$$

$$5x + 5 = 20$$

$$5x = 15$$

$$x = 3$$

Focusing on Proficiencies:





PBGR: Proficiency Based Graduation Requirements

PLP's: Personalized Learning Plans

Targets and Scales

Performance Indicator (CCSS - Content Standards):

Solve real-life and mathematical problems using numerical and algebraic expressions and equations. (7.EE.B)

Learning Targets (What students will know and be able to do in "I can" statements.)

- I can use variables to represent quantities in real-world or mathematical problems.
- I can solve word problems with equations.
- I can solve word problems with inequalities.

I can solve word	1: Beginning	2: Developing	3: Proficient	4: Expanding
problems with equations.	I can identify inverse operations and fact families.	I can solve one- and two-step equations.	I can solve real-world problems involving one- and two-step equations with rational number constants and coefficients.	

So now what?

✓ Schedule

✓ Topics

Progress Monitoring Assessments

Dividing kids up...

- Students are divided up based on the preassessments, and other past data
- During the first skinny, High/Medium High students go to the team teacher or the Math Specialist
- During the second skinny, Special Educators take their kids for services, and Low/Medium Low students go to the team teacher or the Math Specialist
- The process repeats each intervention
- Students often move groups and many students have been all over the place (from medium to low to high) based on their mastery of each topic

Sept 14th - Oct 30th (#1)						
Tier IIA Tier IIB						
Kendrew	Collman					
Molly Mouse	Martha Flag					
Sammy Case	Billy Apple					
Cleo Rock	Mickey Ball					
	1					
	1					
Enrichment						
Kendrew						
Haley Rich						
Morgan Bats						
Nick Flowers						
Archie Goldman						
Maria Vann						
	t 14th - Oct 30th (# Tier IIB Kendrew Molly Mouse Sammy Case Cleo Rock Cleo Rock Enrichment Kendrew Haley Rich Morgan Bats Nick Flowers Archie Goldman Maria Vann					

DATA, DATA, DATA

- All data is kept in excel

- LNSU District Assessments are entered into PowerSchool and tracked Longitudinally

- Teachers recieve "SnapShots" for their particular students after each assessment

- A pre/post analysis is done after each topic to assess student growth

Analysis					
- Example of some scoring on a Ratios and Proportions Pre, Mid, and Post Assessment.					
- Based on OGAP Framework for Proportional Reasoning					
Non-Proportional					
Early Transitional					
Late Transitional					
Proportional					

	Rat/Prop Pre	Rat/Prop Mid	Rat/Prop Post
	TE	TE	TE
	А	N	N
_	А	N	N
	TE	TE	TE
	N	TE	TL
	TE	х	TE
	TL	TL	TL
	N	х	TL
	N	N	N
	TL	N	TL
	N	N	N
	N	N	TL
	TE	TE	TL
	TE	TL	TE
	N	N	N
	TL	TE	N
	TE	TL	TE
	TL	TE	TL
	N	N	N

As a classroom teacher, what do I see/need?

Teacher Data Snap Shot.

Summative Analysis...





Level of Fractional Reasoning

	Pre Add/Subtract	Mid Add/Subtract	Post Add/Subtract
0-2	30.10%	22.77%	22.55%
3-4	59.22%	46.53%	38.24%
5-6	10.68%	30.69%	39.22%
	Pre Mult/Div	Mid Mult/Div	Post Mult/Div
0-2	37.86%	21.78%	28.43%
3-4	55.34%	50.50%	24.519
5-6	6.80%	27.72%	47.06%
	Pre Abs Value	Mid Abs Value	Post Abs Value
0	67.96%	18.81%	21.579
1	20.39%	27.72%	20.599
2	11.65%	53.47%	57,849

Student data sheets...

- Snapshot of an individual student
- Show student progress over time
- Used by teachers, students, parents

			_					
TARGETS	LAST NAME							
TARGETS	FIRST NAME							
			-					
30	6th Bench							
		-						
20?	6th - MCAP							
40?	6th - MCOMP							
3	SBAC 2015		SBAC 2016	2				
865	Fall 2015	395	Winter	/15	Spring	125	Fall 2016	465
805	Fail 2015	365	2016	415	2016	425	Fail 2010	405
Proficient	Fall SMI	Below Basic	Winter SMI	Below Basic	Spring SMI	Below Basic	Fall SMI	Below Basic
6	Integers Pre1		Integers	_				
6	(6)	4	Post1 (6)	5				
6	Integers Pre2	-	Integers	2				
6	(6)	2	Post2 (6)	3				
	Integers Pre3		Integers	_				
2	(2)	0	Post3 (2)	0				
Р	RP Pre	TE	RP Post	TL				
-			Fraction					
F	Fraction Pre	N	Post	N				

Positives since switching to this model...

- SMI has been a success and gives us much more information than Aimsweb
- Students are reassigned each intervention so students have the chance to move each time
- Some students have been in both my highest group and my lowest group throughout the year
- Teachers are responsible for the interventions as well as the Math Specialist
- Our system is a model that other departments are starting to look at (Language Arts in particular)
- We have data to show that we are moving students forward in their learning
- We can really track individual student growth
- Teams, EST, and SPED have data to bring to meetings and create plans for students

Future considerations...

- Improve the quality of assessments
- Use SMI more effectively (recommendations, resources, etc.)
- Discuss more with department about pre-assessments, intervention materials, strategies...
- Tweak the "spiral" to leave more of a gap between main content and intervention
- Collaborate/align more closely with SPED services
- Revisit our triangle, especially for students who continue to struggle
- Share data with parents and teachers
- Other thoughts/ what if's?

Wrap-Up

Questions and/or Discussion

Thank You!

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