

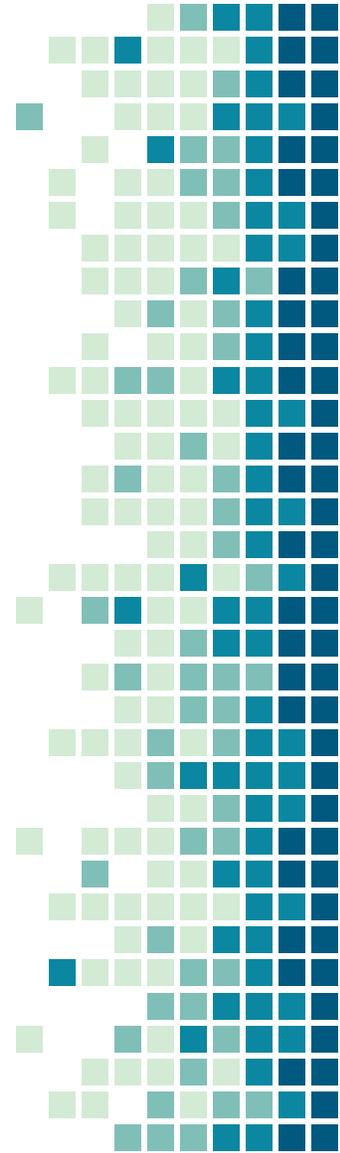
MTSS Math: Standards & Strategies

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Professional Development
ESU 2



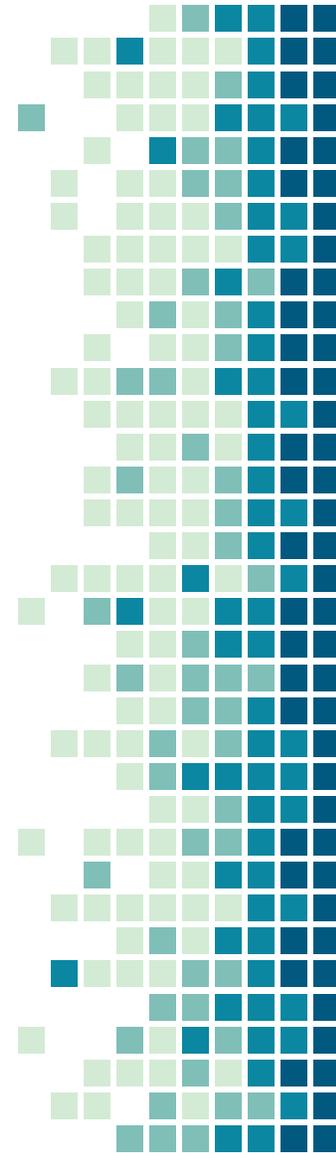
Goals

- See the cyclic approach to MTSS in Math
- Determine needs for individual interventions
- Understand breaking down of standards
- Connect and prioritize strategies



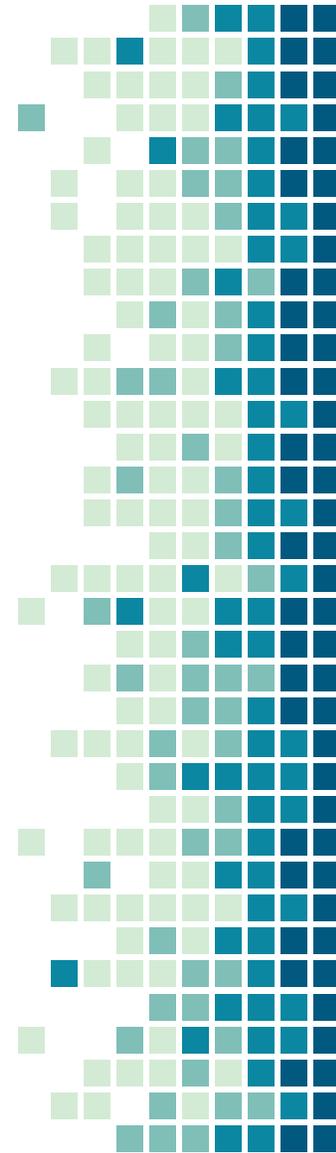
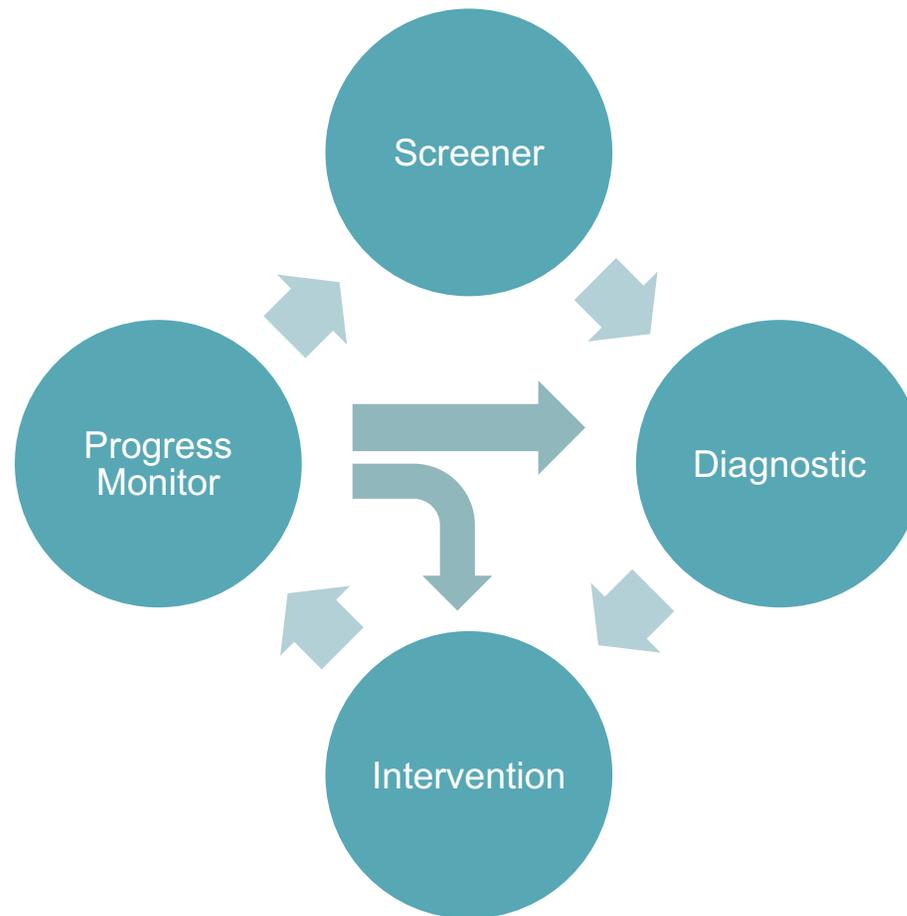
Nebraska definition

MTSS is defined as a service delivery system based on the concept that ALL students require early and powerful academic and behavioral core instruction with potential high-quality interventions of increasing intensity.



“... to ensure that no struggling student goes unnoticed, where the concerns are in academics, social-emotional development or mental health”

(Wall, 2018)



Diagnostic

MAP Student Profile – Standards

Focus on standards around problem solving and...

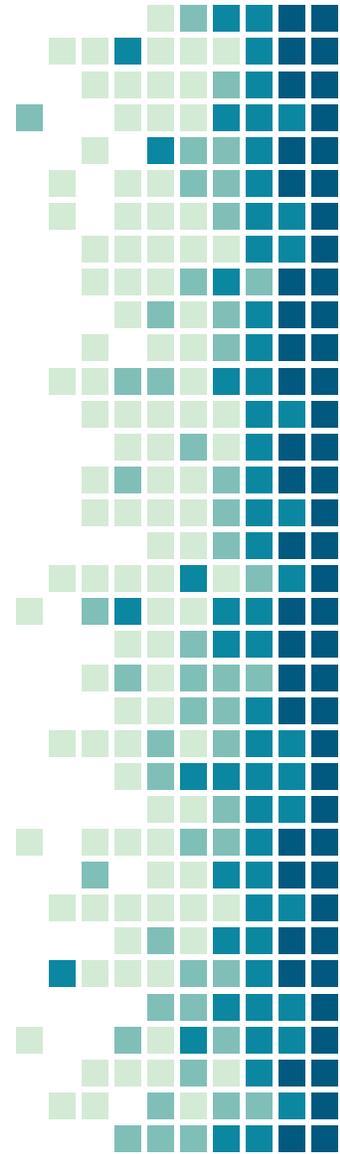
K-2 number sense

3-5 operations

6-8 integers and fractions

9-12 solving equations

Priority standards for your school



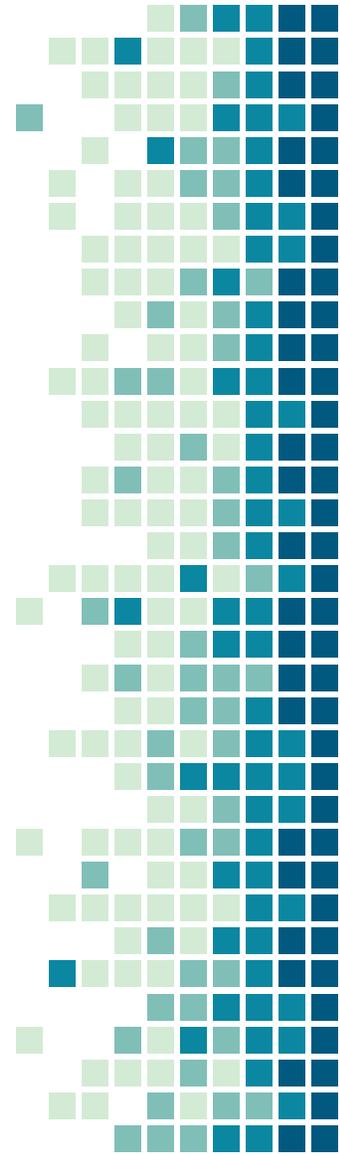
Research

100:1

Mixed results on programs

Worksheets

Drill and kill computer programs



Interventions need...

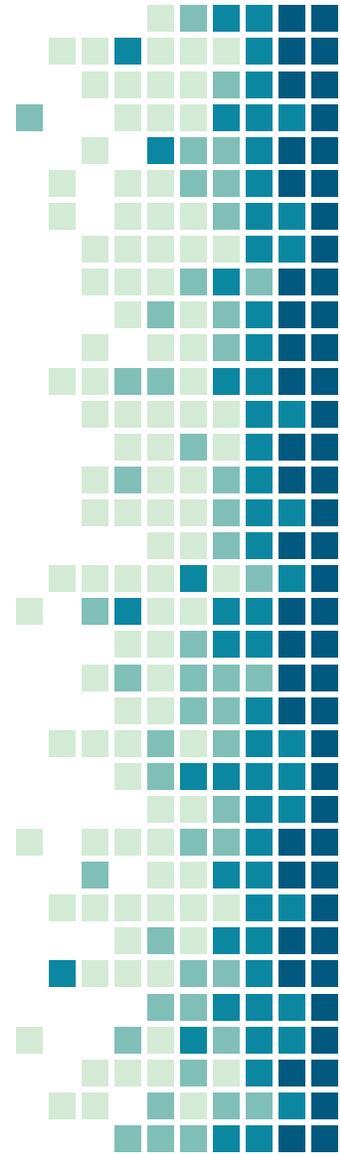
Explicit connections

Modeling

Corrective feedback

Preview skills (not review)

Interventions are not just reteaching the same thing over again!



Interventions

Inventory

Tier 1 designation

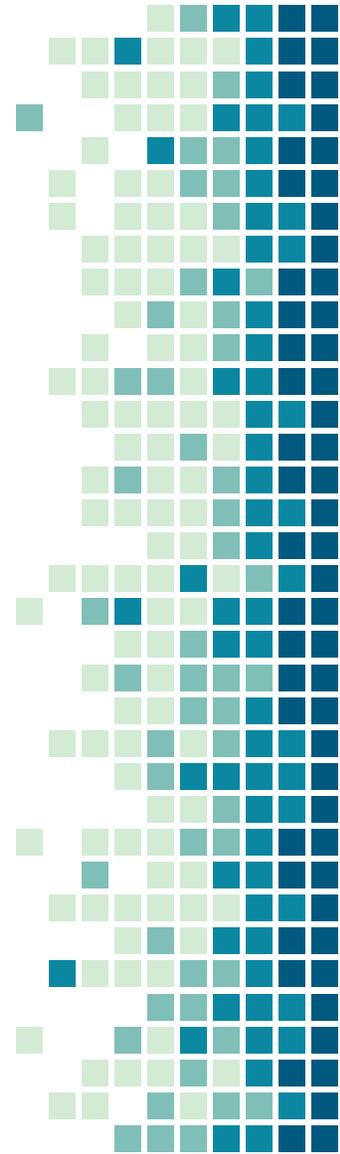
Standards based

Evidence-based practices

Learningtrajectories.org

Nebraska Math Strategies & Interventions*

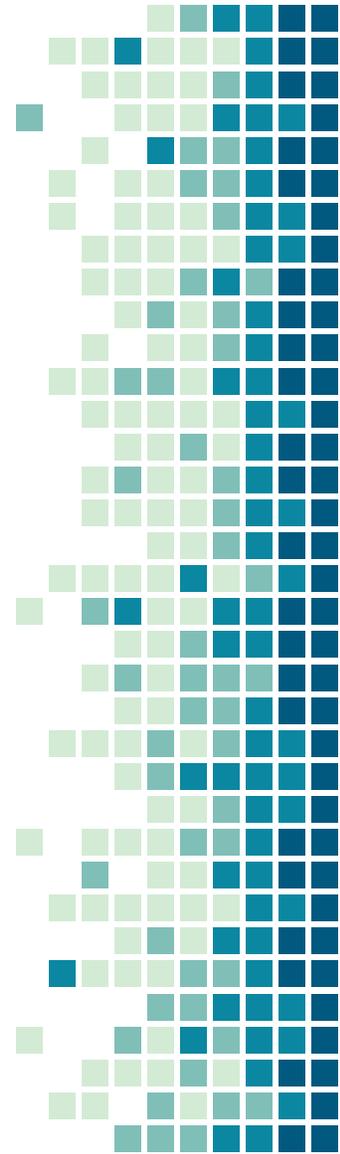
If all else fails...



Standards based means...

Aligned to NE grade-level standards

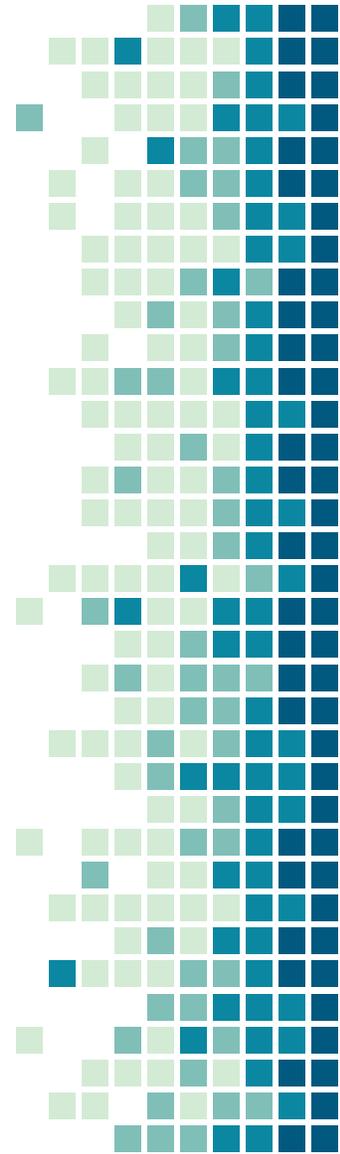
Curriculum guides are accessible to all



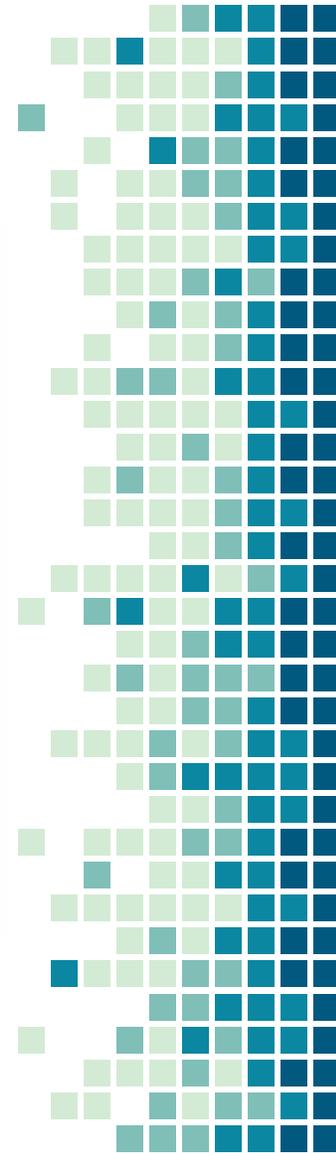
BONUS!

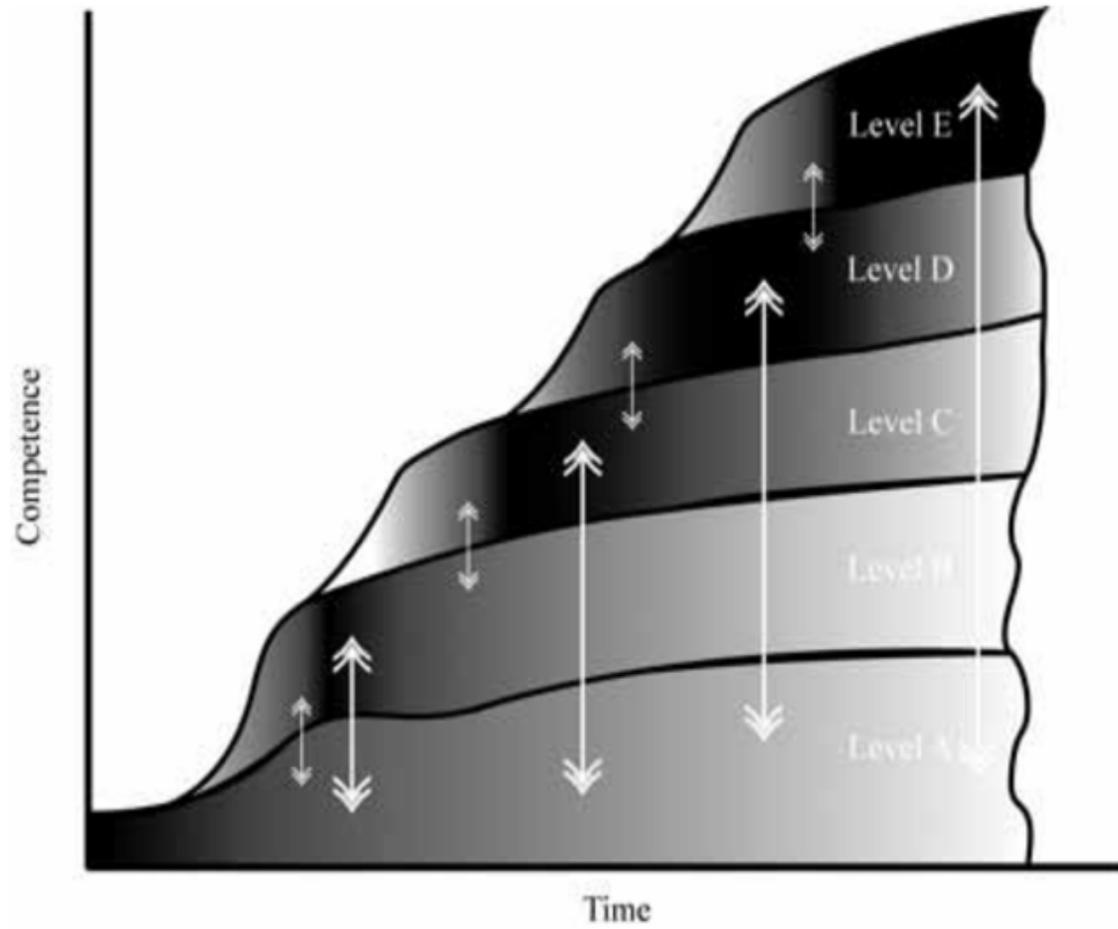
Co-teaching

Standards-based IEP goals

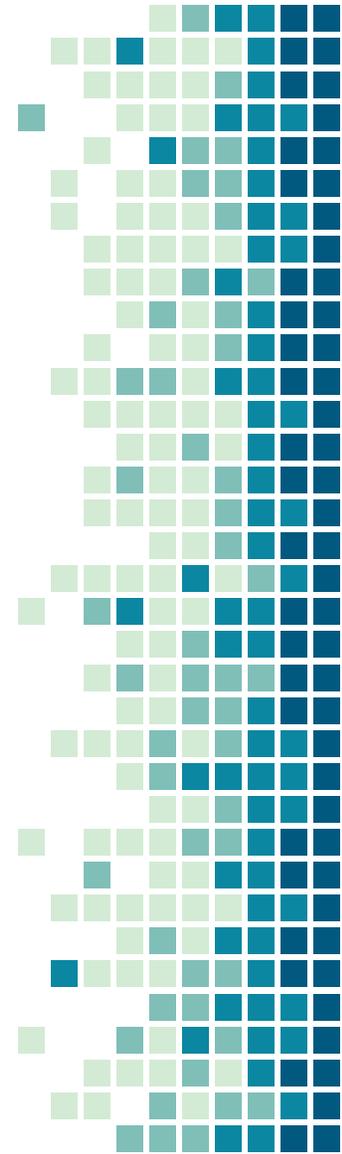


Lesson	Pacing	Focus Areas/Lesson Notes	Resources
1-3: Decimals to thousandths	Quarter 1 3 days	<ul style="list-style-type: none"> • Required: <ul style="list-style-type: none"> ○ Guided Practice & Problem solving ○ Homework (21-22) • Optional: <ul style="list-style-type: none"> ○ Problem-based learning/Solve & share ○ Visual Learning ○ Intervention Activity (21A) ○ Toss and Talk (21A) ○ Practice Buddy • Co-Teaching Options <ul style="list-style-type: none"> ○ Station teaching ○ Parallel teaching • Preview Content <ul style="list-style-type: none"> ○ How a decimal relates to a fraction ○ Place value chart for decimals to thousandths 	Pearson: TE:17A-21/22 SE:17-22 Supplemental: https://www.youtube.com/watch?v=KG6ILNOiMgM





Source: Sarama & Clements, 2009a

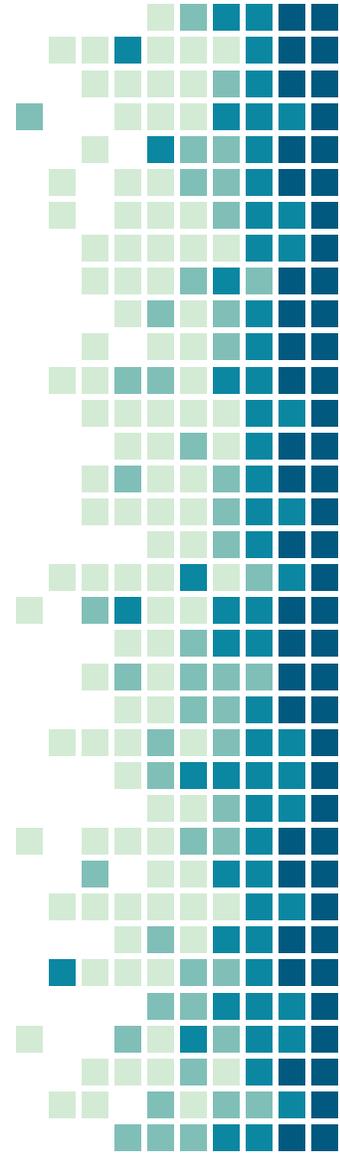


Standards based

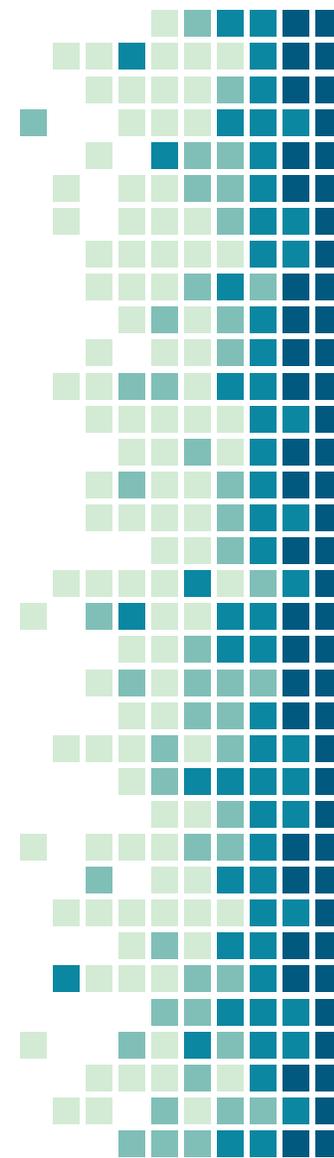
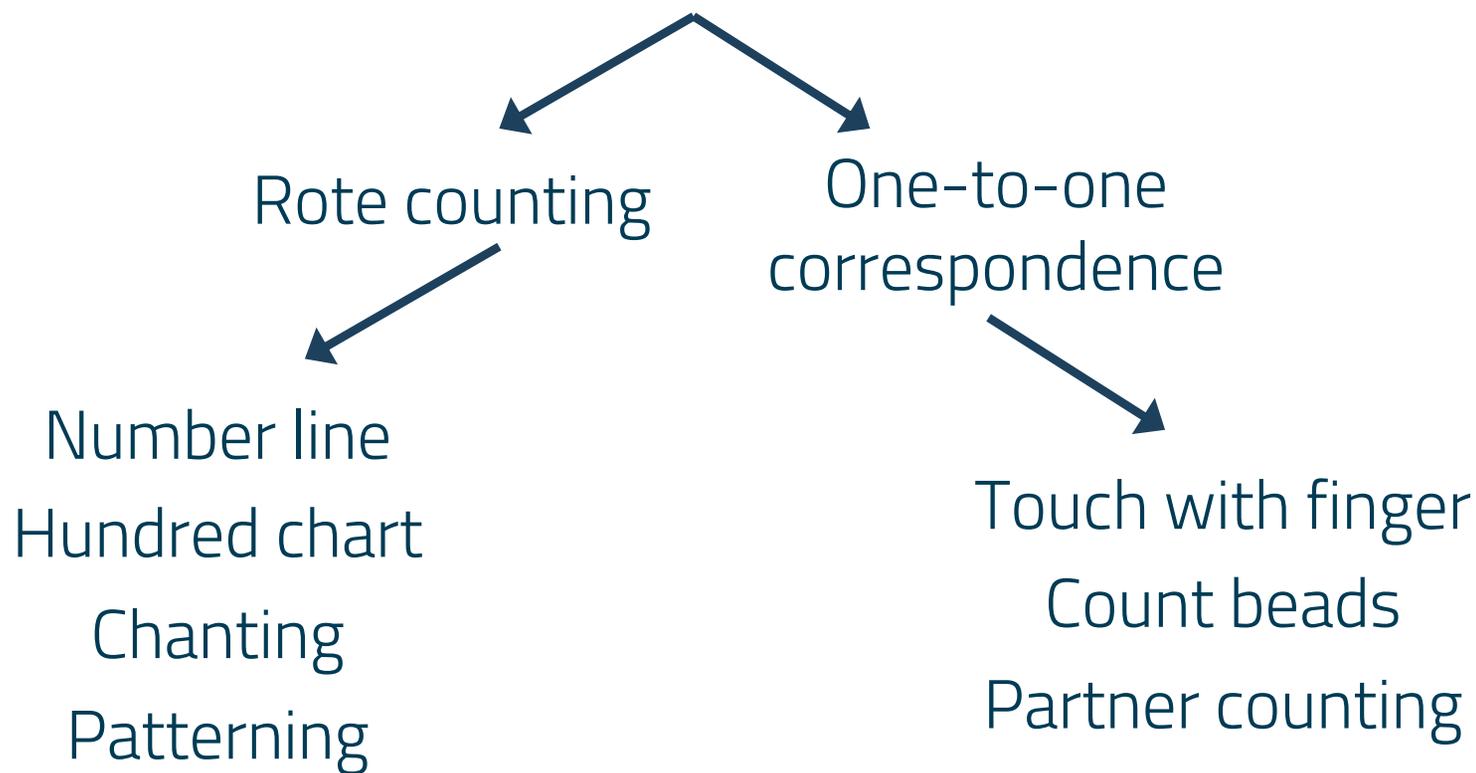
Break down the standard

What are the skills and/or content needed?

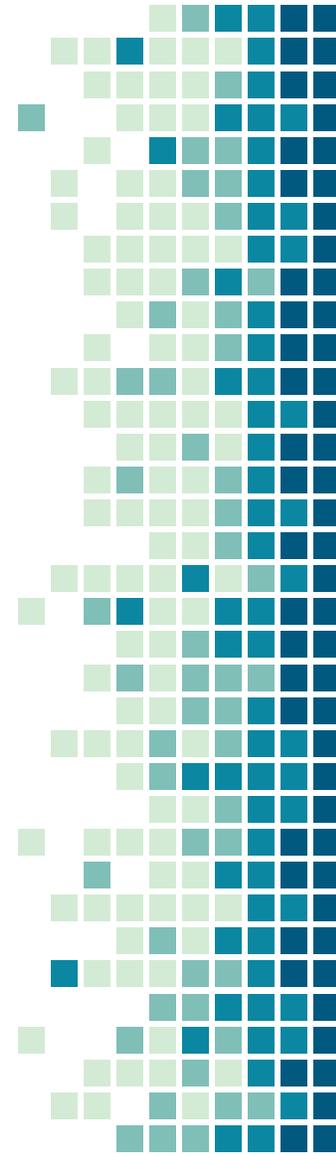
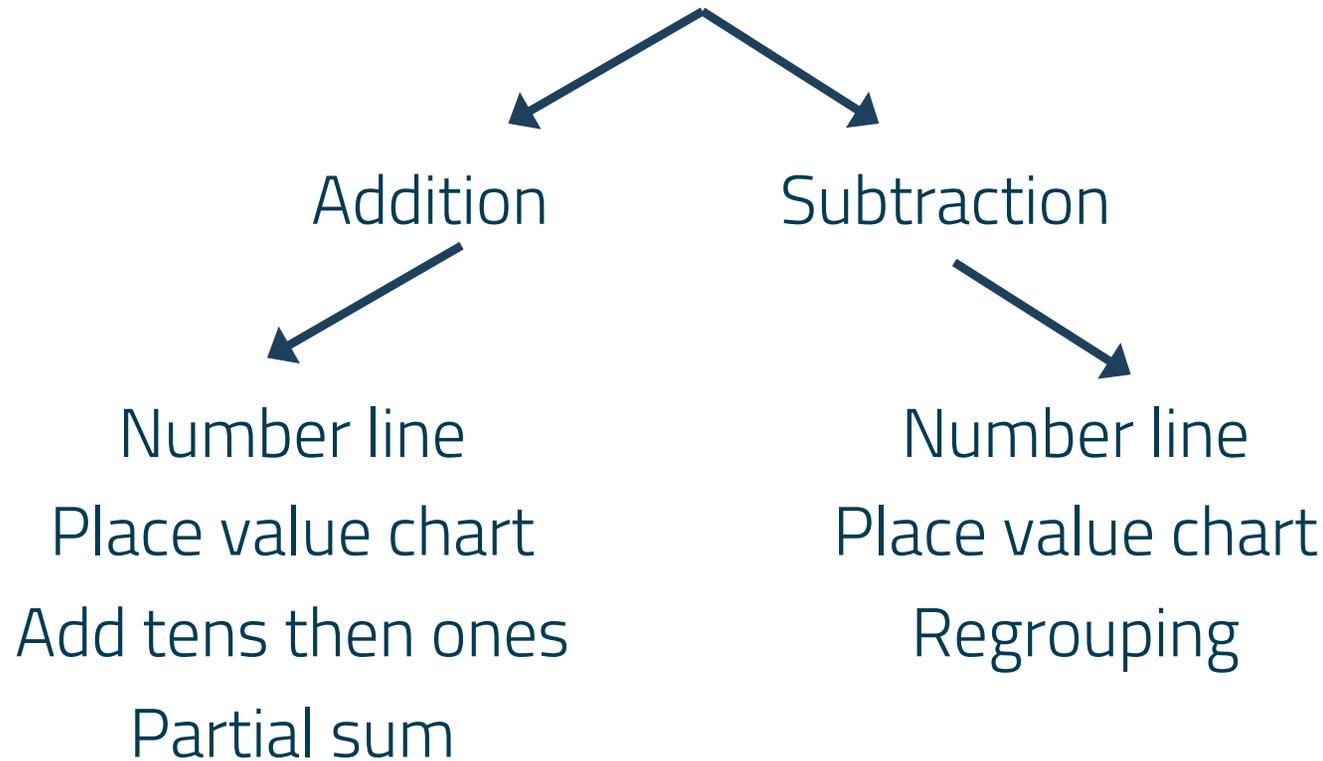
What strategies will help the student?



1.1.1.a Count to 120 by ones and tens, starting at any given number.



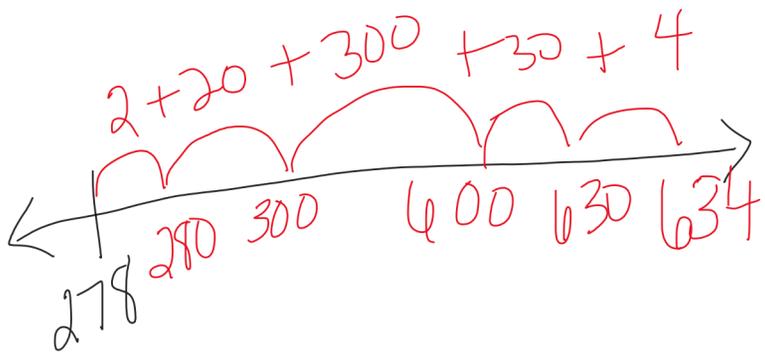
2.1.2.e Add and subtract within 1000, using concrete models, drawings, and strategies, which reflect understanding of place value and properties of operations.



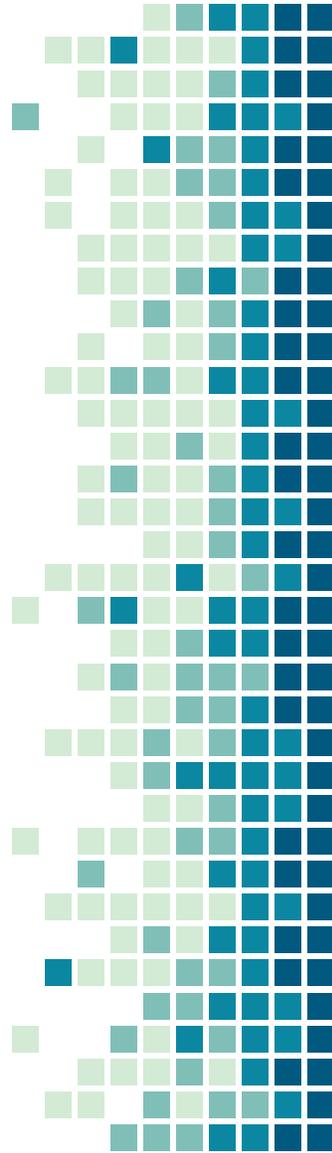
$$\begin{array}{r}
 278 \\
 + 356 \\
 \hline
 500 \\
 120 \\
 14 \\
 \hline
 634
 \end{array}$$

$$278 + 356$$

$$\begin{array}{r}
 278 \\
 + 356 \\
 \hline
 14 \\
 120 \\
 500 \\
 \hline
 634
 \end{array}$$



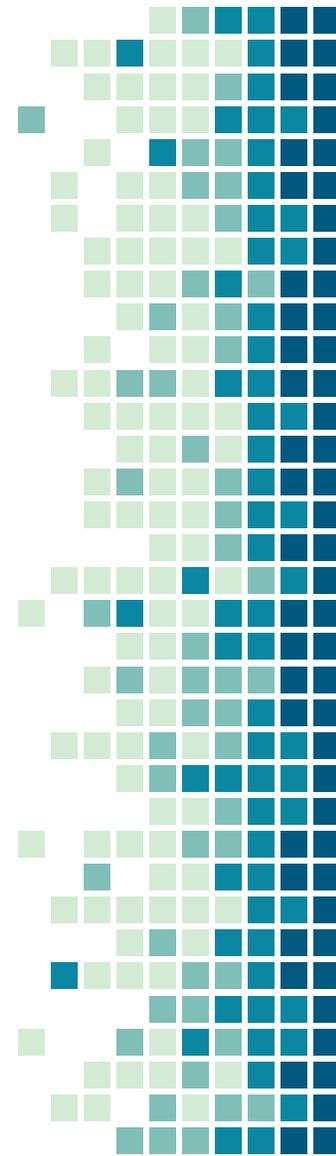
hun.	tens	ones
2	7 3	8 4
+ 3	5 1	6 4
6	3	4



5.1.2.a Multiply multi-digit whole numbers using the standard algorithm.



Area model
Partial product

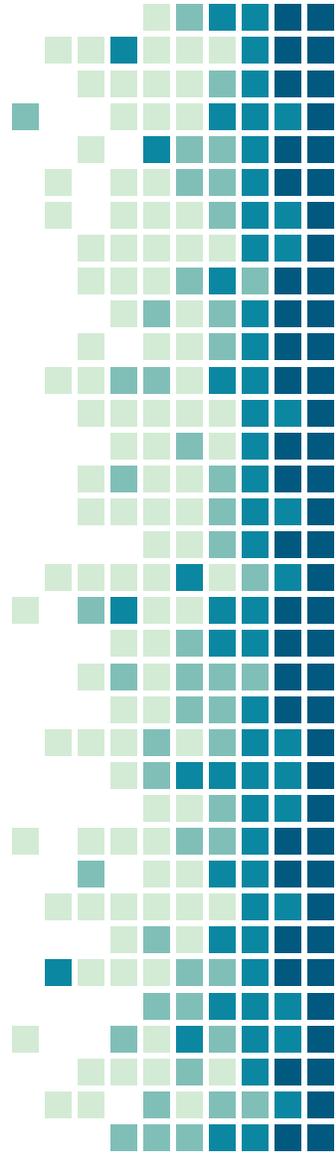


$$57 \times 26$$

	50	+ 7
20	$20 \times 50 = 1000$	$\begin{array}{r} 20 \\ \times 7 \\ \hline 140 \end{array}$
+ 6	$50 \times 6 = 300$	$\begin{array}{r} 7 \times 6 \\ = 42 \end{array}$

$$\begin{array}{r} 1000 \\ 140 \\ 300 \\ + 42 \\ \hline 1482 \end{array}$$

$$\begin{array}{r} 57 \\ \times 26 \\ \hline 42 \\ 300 \\ 140 \\ \hline 1000 \\ \hline 1482 \end{array}$$



6.1.1.c Compare and order rational numbers both on the number line and not on the number line.

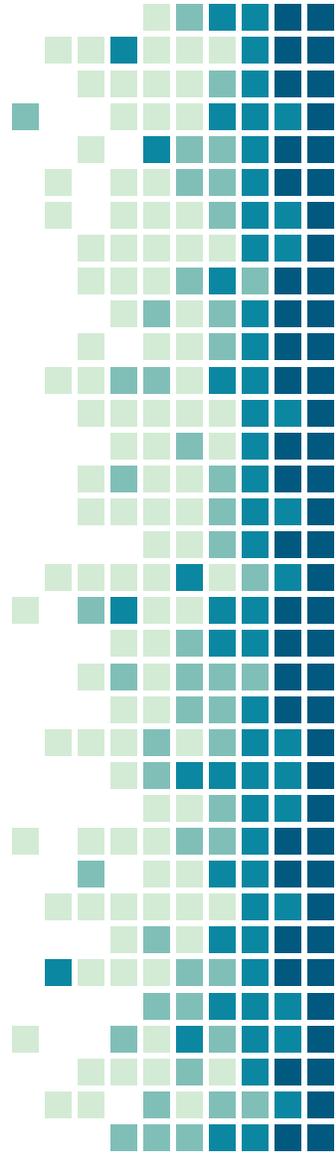


Model

Benchmark

Equivalence (same numerator or denominator)

Size of pieces



$$\frac{3}{6} \square \frac{5}{6}$$

$$\frac{3}{6} \square \frac{7}{15}$$

$$\frac{31}{64} \square \frac{37}{50}$$

$$\frac{11}{13} \square \frac{9}{11}$$

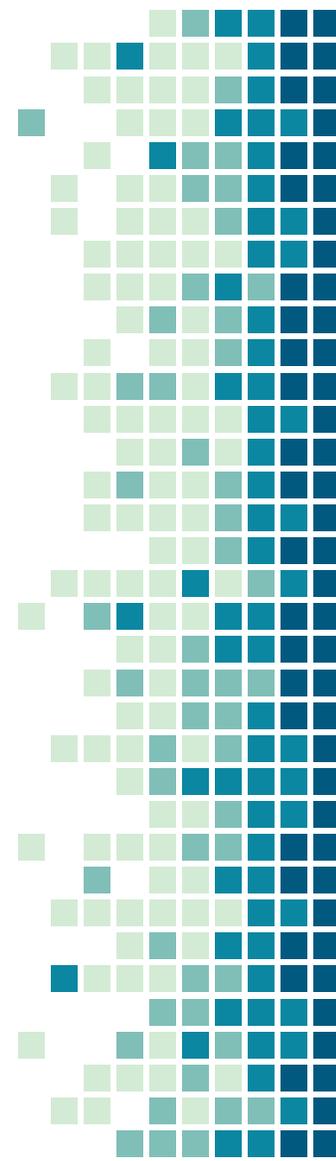
$$\frac{1}{7} \square \frac{1}{5}$$

$$\frac{8}{25} \square \frac{15}{50}$$

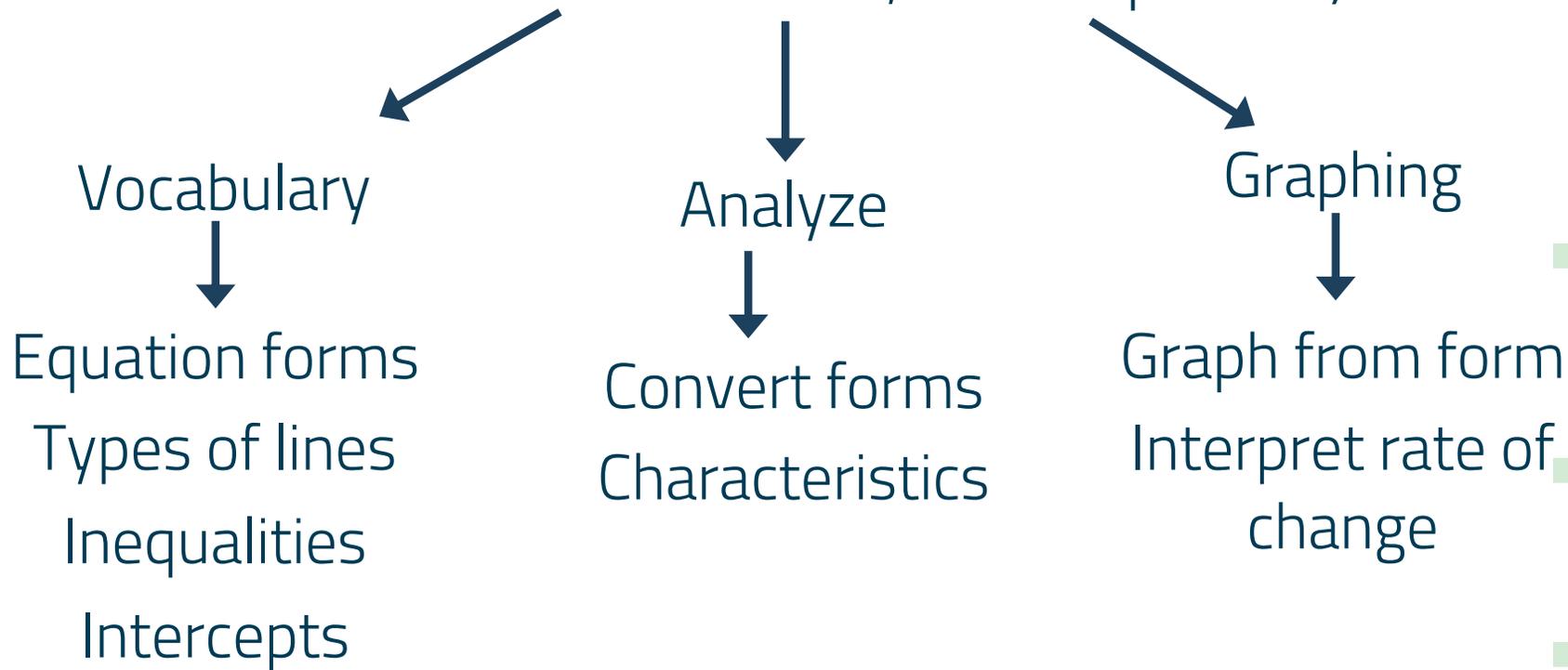
$$\frac{7}{9} \square \frac{7}{11}$$

$$\frac{15}{38} \square \frac{5}{13}$$

$$\frac{8}{9} \square \frac{10}{11}$$



11.2.1.e Analyze and graph linear functions and inequalities (point-slope form, slope-intercept form, standard form, intercepts, rate of change, parallel and perpendicular lines, vertical and horizontal lines, and inequalities).



Progress Monitor

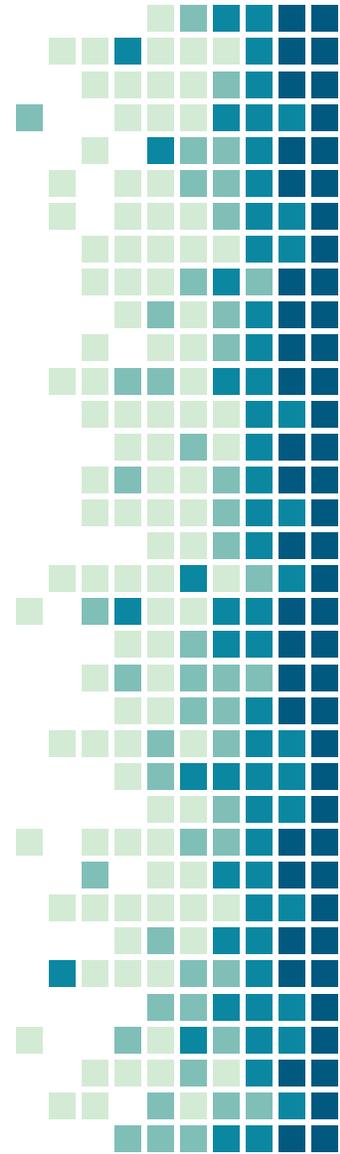
Is this working?

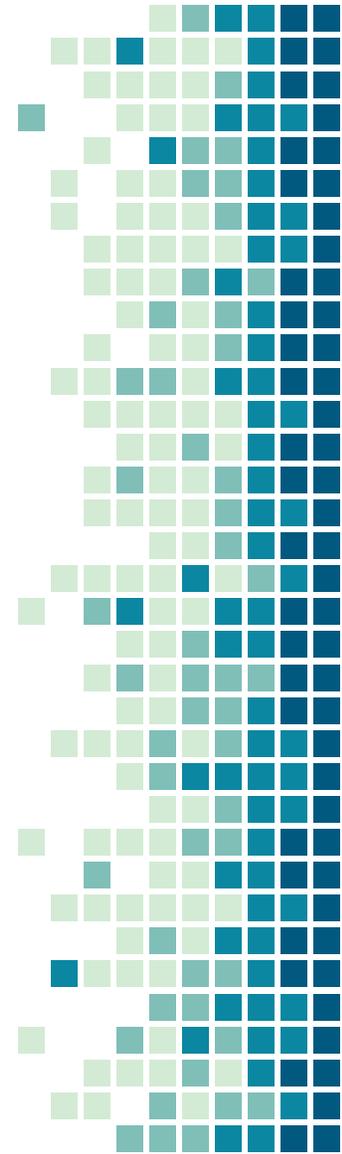
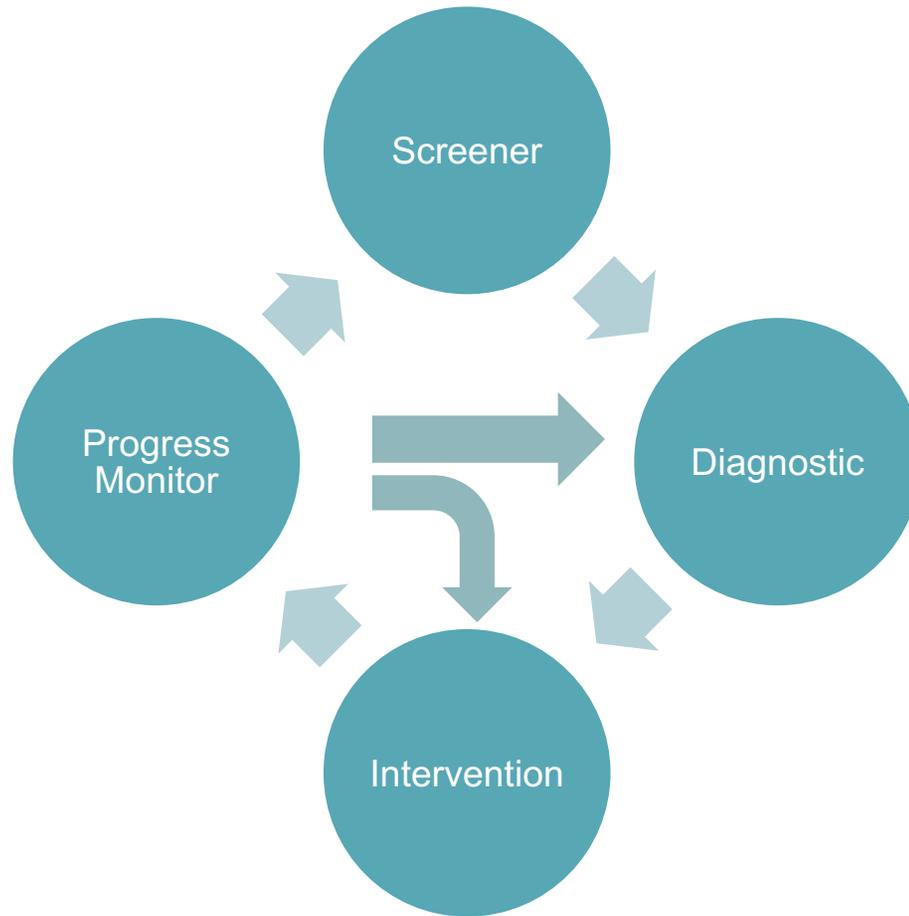
Standards based

Is the student understanding and using the strategies?

Check in every other week

Make decisions every 6-8 weeks







bit.ly/MTSSmath

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