# Using Data-Based Decision Making in Math Within an MTSS Framework

# Sarah R. Powell, Ph.D.

Associate Professor
The University of Texas at Austin

www.sarahpowellphd.com

srpowell@utexas.edu

@sarahpowellphd

Say hello.

Share a bit about yourself and the math you support.

# Objectives

Participants will describe the data-based decision making framework.

Participants will learn core components of an effective instructional platform in math.

Participants will explain how to make decisions about student progress.

Participants will review common adaptations in math to the instructional platform.

# Objectives

Participants will describe the data-based decision making framework.

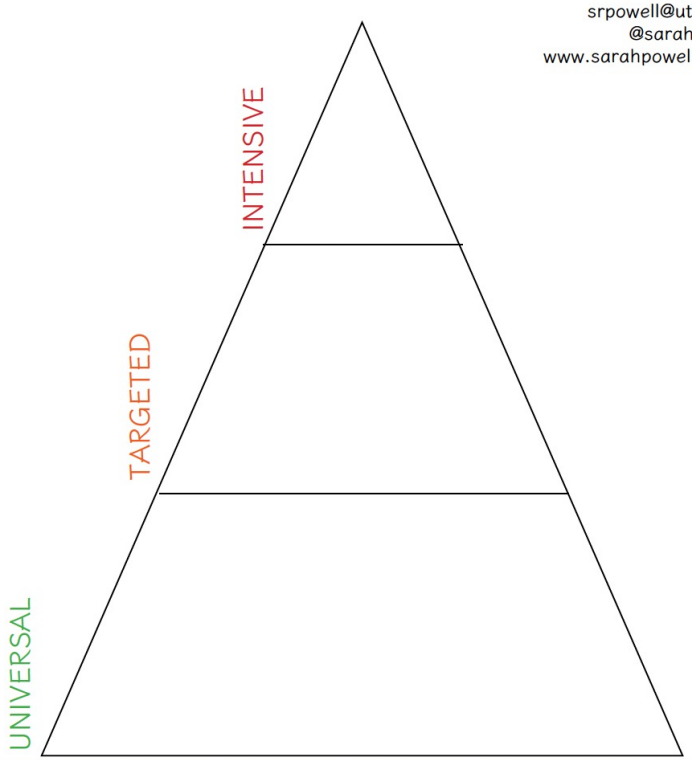
Participants will learn core components of an effective instructional platform in math.

Participants will explain how to make decisions about student progress.

Participants will review common adaptations in math to the instructional platform.

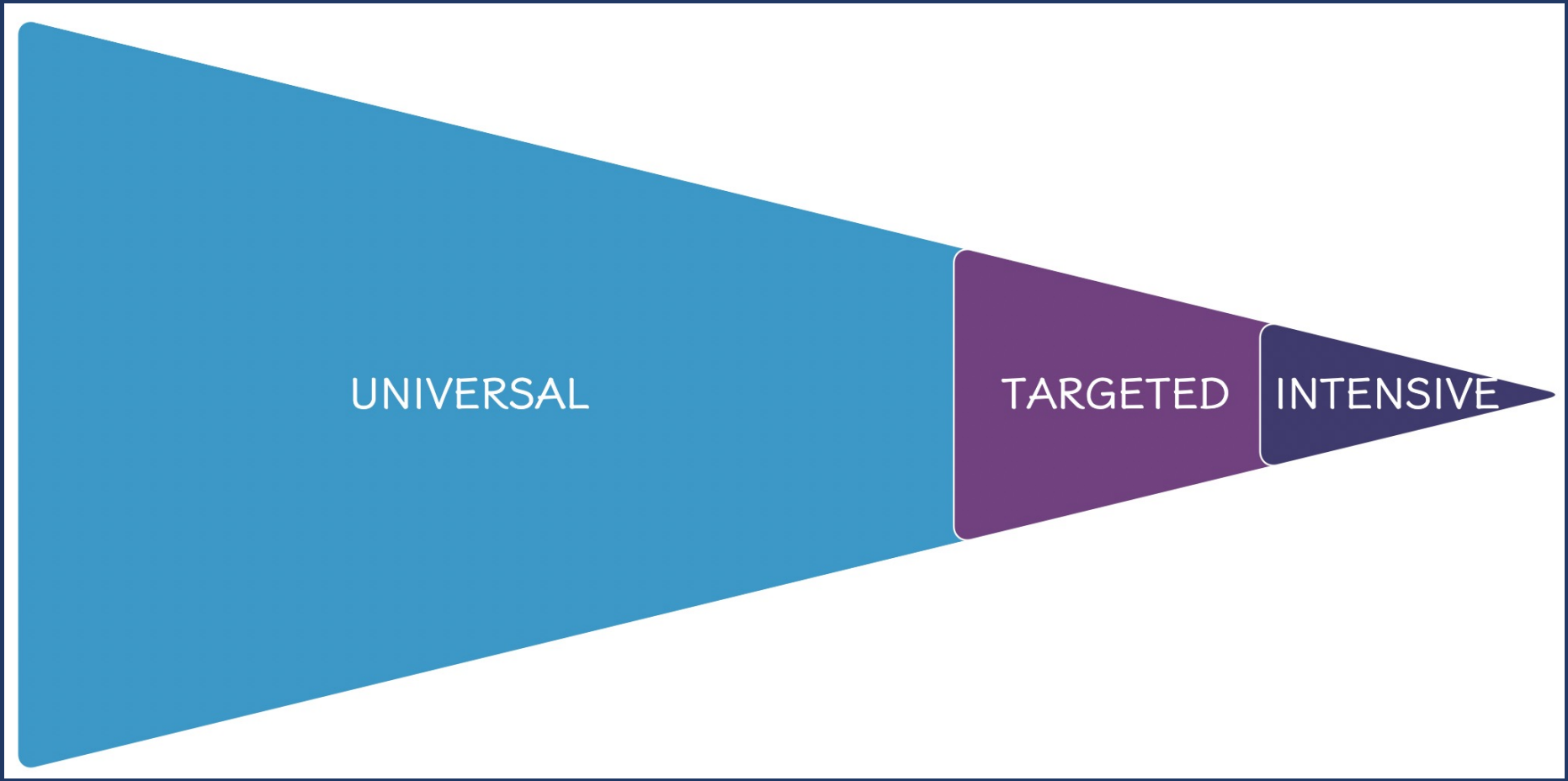
# Using Data-Based Decision Making in Math Within an MTSS Framework

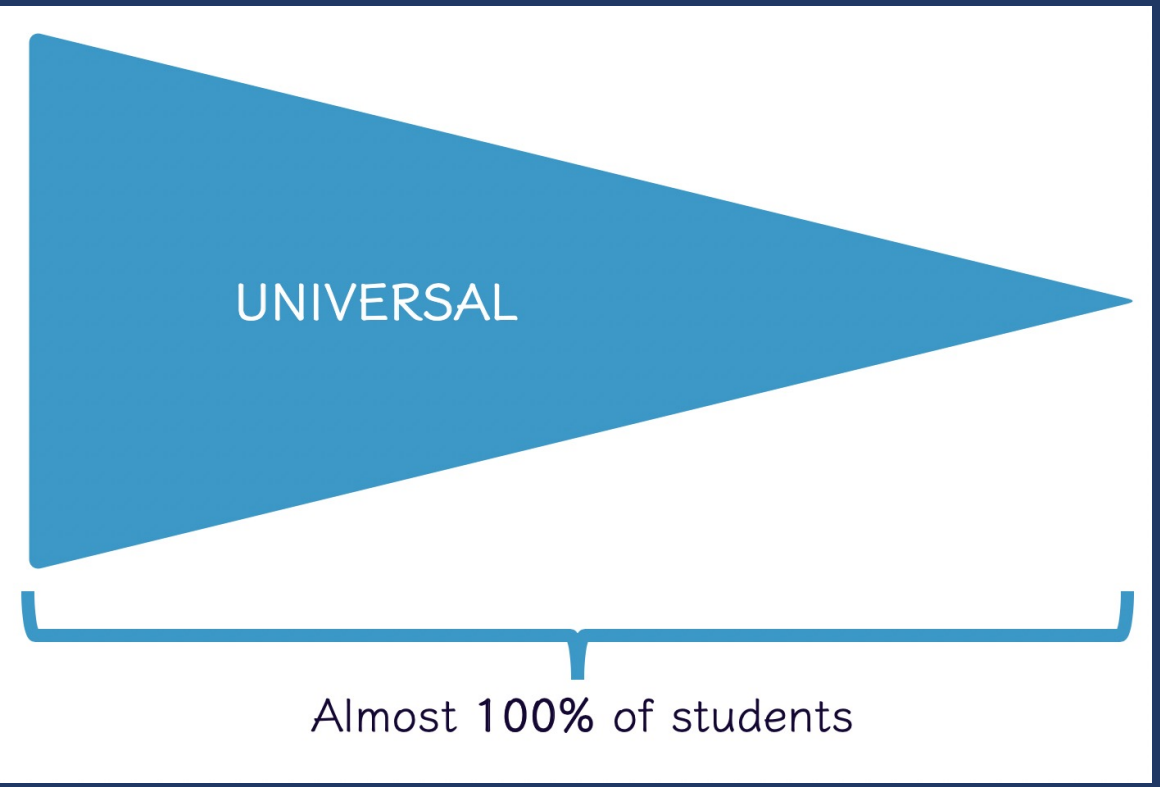
Sarah R. Powell, Ph.D.
srpowell@utexas.edu
@sarahpowellhd
www.sarahpowellphd.com



# Multi-Tiered Systems of Support (MTSS)

tier.tea.texas.gov






Also known as **Tier 1** or **primary prevention**

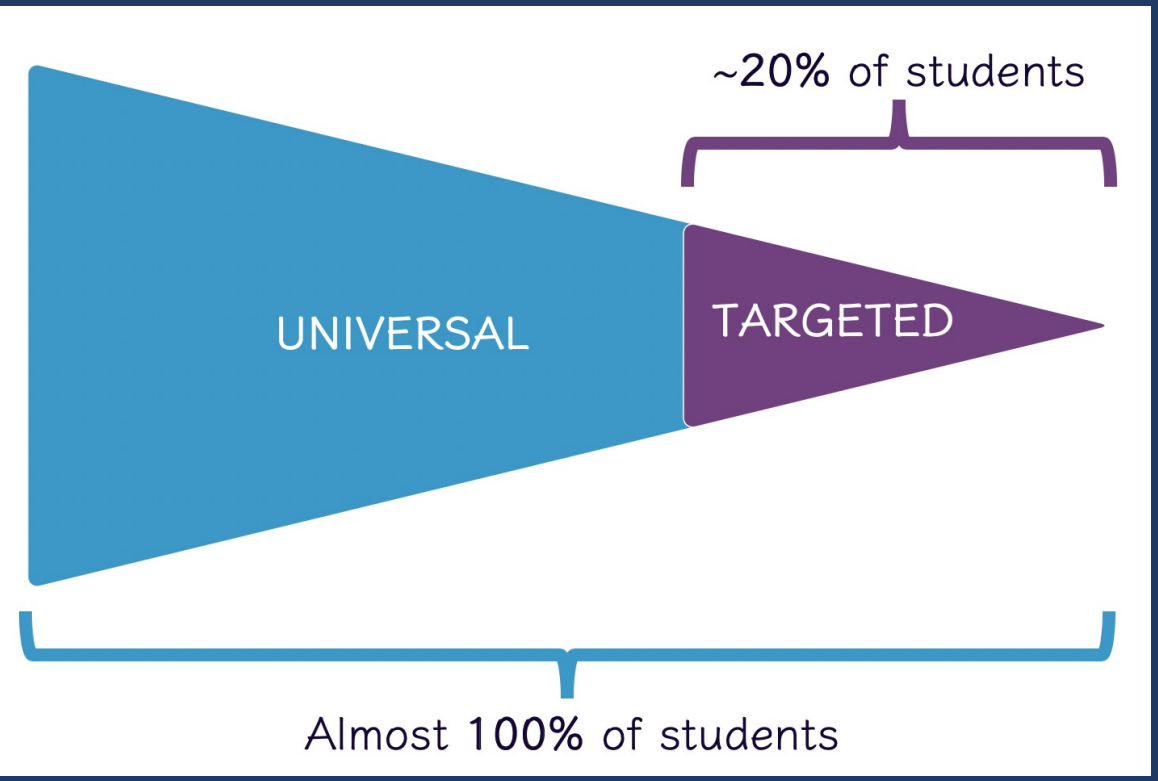
Designed for all students

Occurs in general education classroom

Almost all students participate

~80% of students need **only** universal intervention

tier.tea.texas.gov




Also known as **Tier 2** or **secondary prevention**

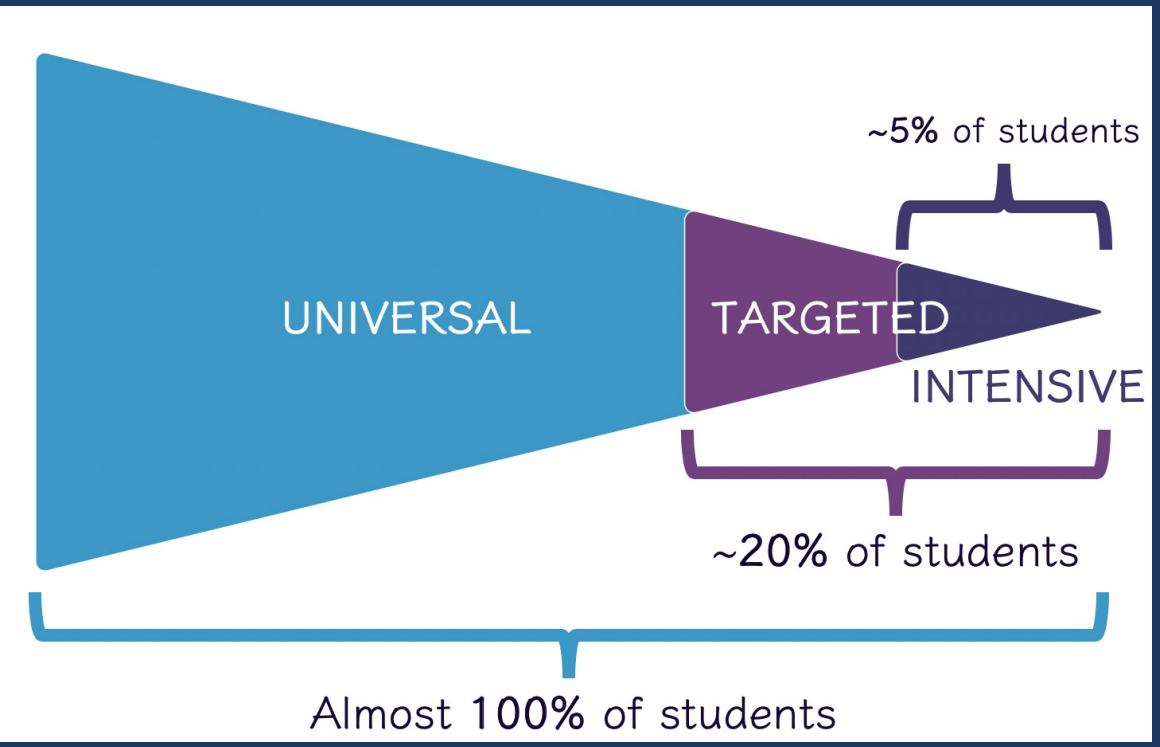
Designed for students experiencing difficulty in academics or behavior

Can occur inside or outside of the classroom

Provided in conjunction with universal intervention

~20% of students require targeted intervention

tier.tea.texas.gov




Also known as **Tier 3** or **tertiary prevention**

Designed for students who demonstrate inadequate response to universal and targeted intervention

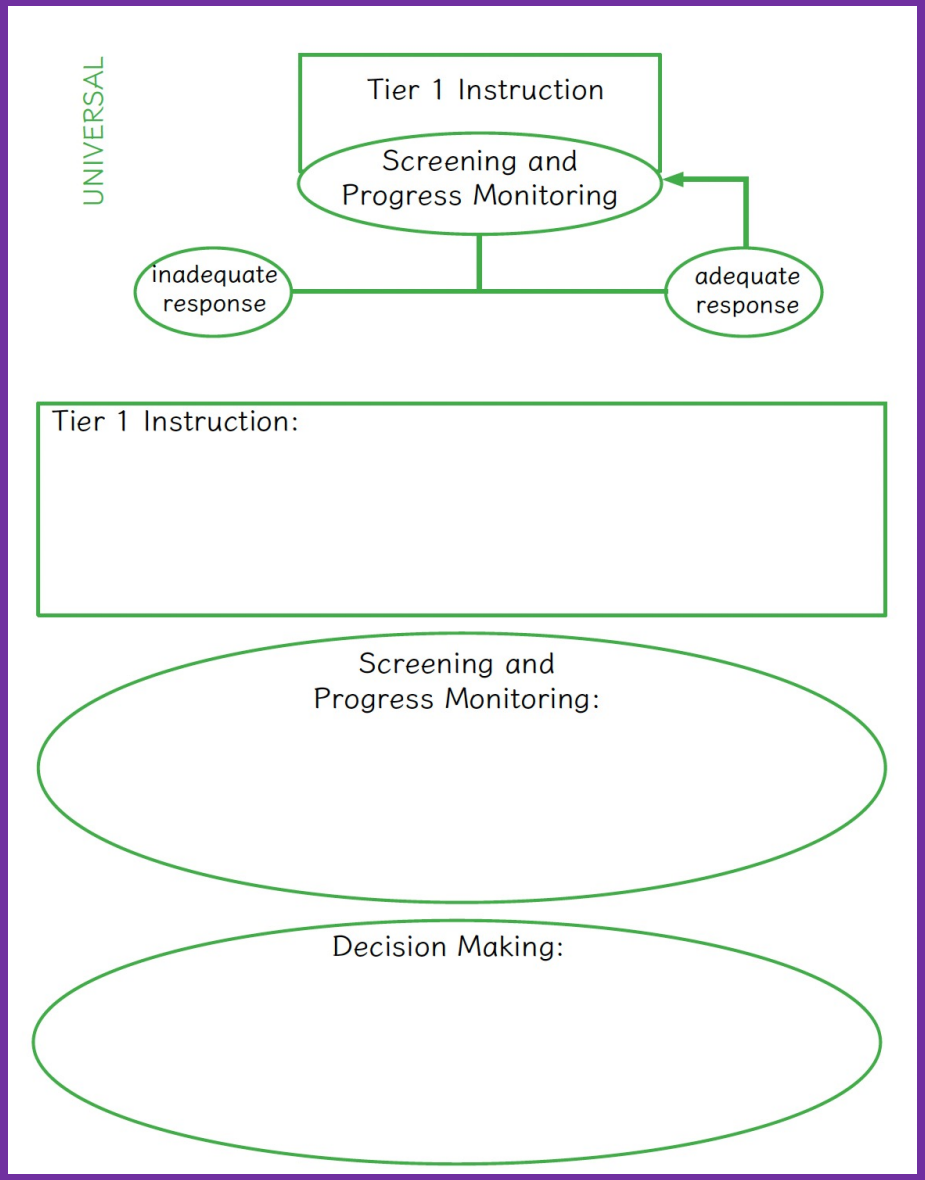
Occurs within or outside of special education

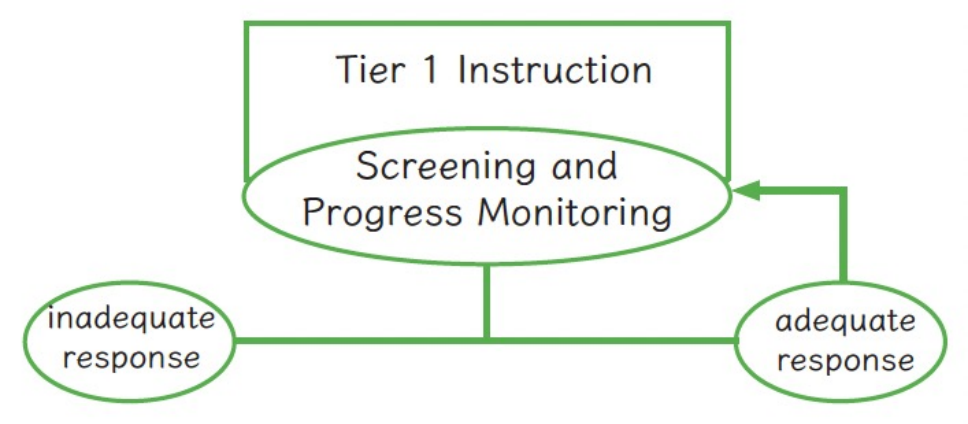
~5% or less of students require intensive intervention

tier.tea.texas.gov

Describe the MTSS frameworks you have used or are familiar with.

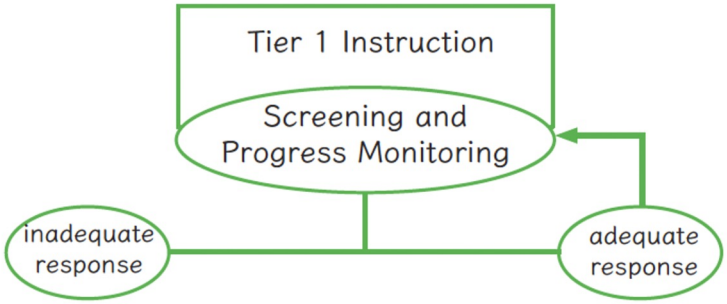
What does your MTSS framework look like in math?






- Core instruction utilizes **evidence-based practices**
- All students **screened** (universal screener)
- Students scoring below a cut-score are suspected **at risk** for math difficulties
- Suspected **at-risk students** monitored for 6 to 10 weeks during primary prevention using **progress monitoring**

Chapter 2: UNIVERSAL




Tier 1 Instruction:

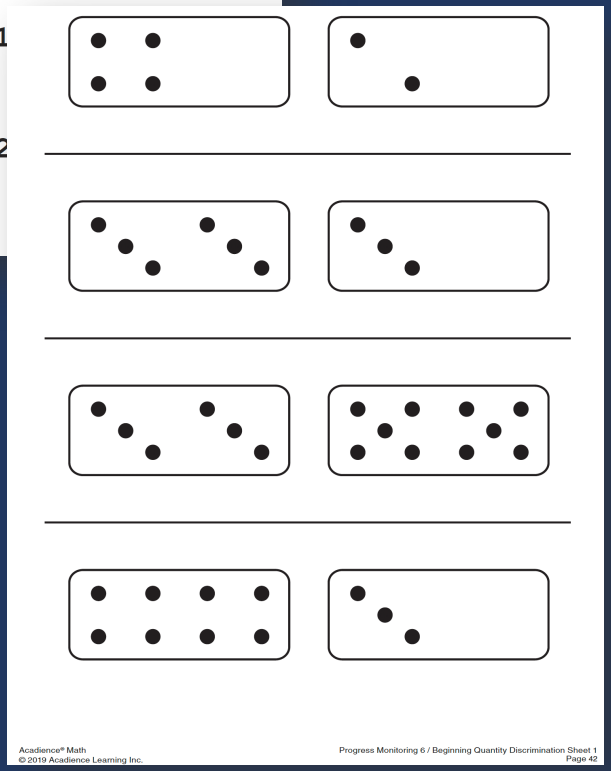
- Evidence-based practices

Screening and Progress Monitoring:

Decision Making:

| | | | | |
|---|---|---|---|---|
| 6 | 16 | 23 | 10 | 17 |
| 38 | 97 | 20 | 15 | 24 |
| 14 | 33 | 11 | 79 | 8 |
| 21 | 19 | 93 | 3 | 49 |
| 4 | 30 | 1 | | |
| 28 | 7 | 2 | | |

Acadience® Math
© 2019 Acadience Learning Inc.



Acadience® Math
© 2019 Acadience Learning Inc.

Progress Monitoring 6 / Beginning Quantity Discrimination Sheet 1
Page 42

**Acadience® Math / Computation Grade 4**
**Benchmark 1 / Form A**

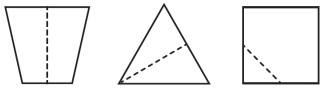
Total: _____

| | | | | |
|---|---|---|---|---|
| 1. 527 +320 | 2. 4778 +2242 | 3. $8\frac{4}{5} - 6\frac{2}{5} =$ | 4. 9 x8 | 5. $4\overline{)573}$ |
| 6. 197 - 74 | 7. $\frac{5}{8} + \frac{2}{8} =$ | 8. 7273 - 387 | 9. 19 x11 | 10. $9\frac{7}{12} - 1\frac{4}{12} =$ |
| 11. $8\overline{)642}$ | 12. $7\overline{)49}$ | 13. 99 x72 | 14. $\frac{1}{4} + \frac{2}{4} =$ | 15. 526 x 6 |
| 16. $8\frac{9}{10} - 1\frac{5}{10} =$ | 17. $\frac{1}{3} + \frac{1}{3} =$ | 18. $\frac{9}{12}$ | | |
| 21. $3\overline{)397}$ | 22. 65 x23 | 23. | | |

**Acadience® Math / Concepts and Applications**
**Grade 4 / Benchmark 1**

Total: _____

1. Is the dotted line a line of symmetry for each shape? Write "yes" or "no" in the space provided below each shape.



_____ _____ _____

2. Compare the number in Box 1 with the number in Box 2. Fill in the blank with > (greater than), = (equal to), or < (less than):

| Box 1 | >, =, < | Box 2 |
|---|---|---|
| 835 | | 751 |
| 333 | | 613 |
| 131 | | 168 |

3. List three numbers that are multiples of 4:

_____ _____ _____

4. Jake read 17 books over the summer that were nonfiction and 43 books that were fiction. His friend Ross read 38 books total. How many more books did Jake read than Ross? _____ books.

5. Compare the decimal in Box 1 with the decimal in Box 2. Fill in the blank with > (greater than), = (equal to), or < (less than):

| Box 1 | >, =, < | Box 2 |
|---|---|---|
| 0.47 | | 0.25 |
| 0.39 | | 0.68 |
| 0.89 | | 0.91 |

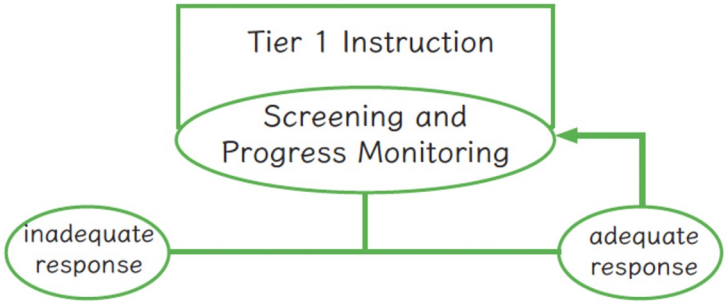
6. We rented a movie that was 2 hours and 15 minutes long. How many minutes total was the movie? _____ minutes.

Acadience® Math
© 2019 Acadience Learning Inc.

Concepts and Applications / G4 / Benchmark 1
1

https://www.acadiencelearning.org

Chapter 2: UNIVERSAL



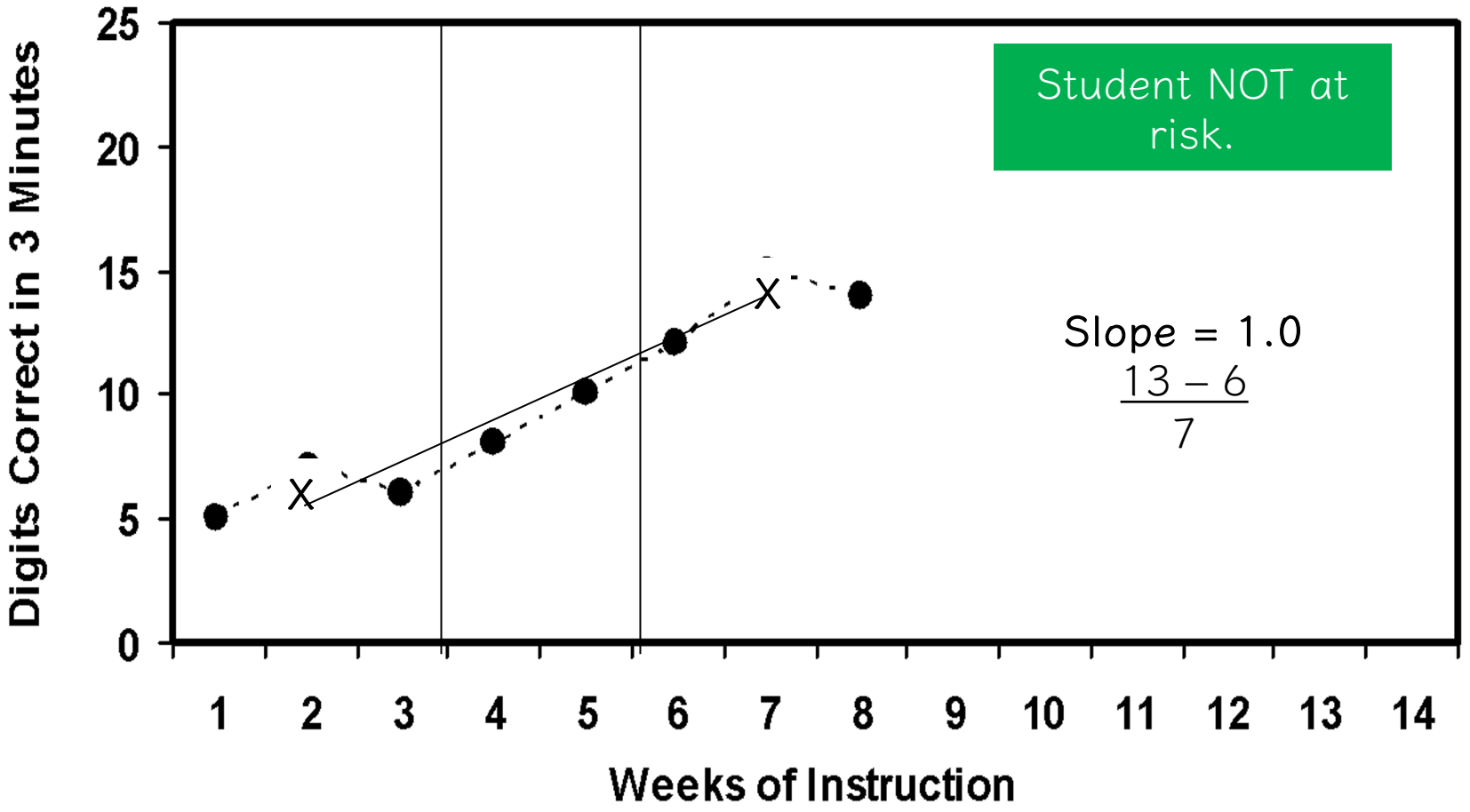

Tier 1 Instruction:

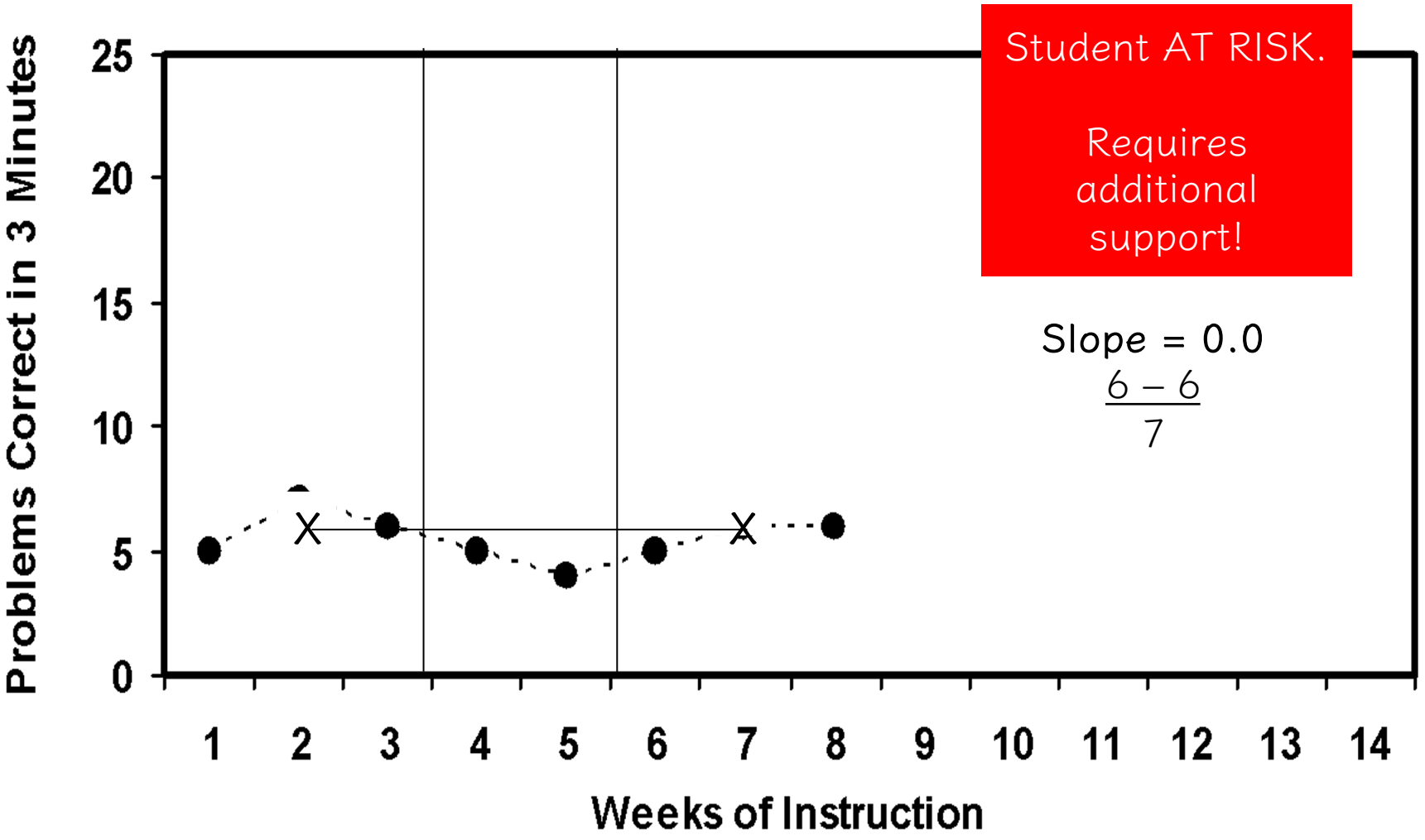
- Evidence-based practices

Screening and Progress Monitoring:

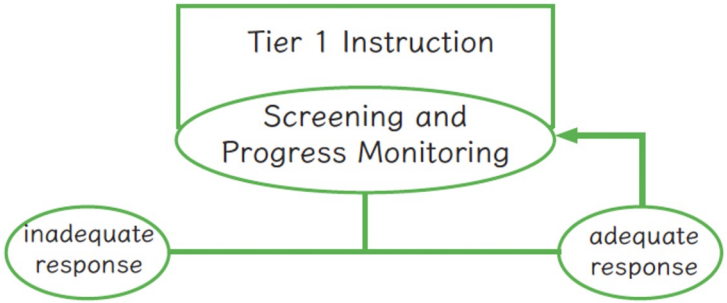
- Reliable measures with normative data
- Usually administered fall, winter, spring
- Reliable measures, administered regularly

Decision Making:





Chapter 2: UNIVERSAL




**Tier 1 Instruction:**

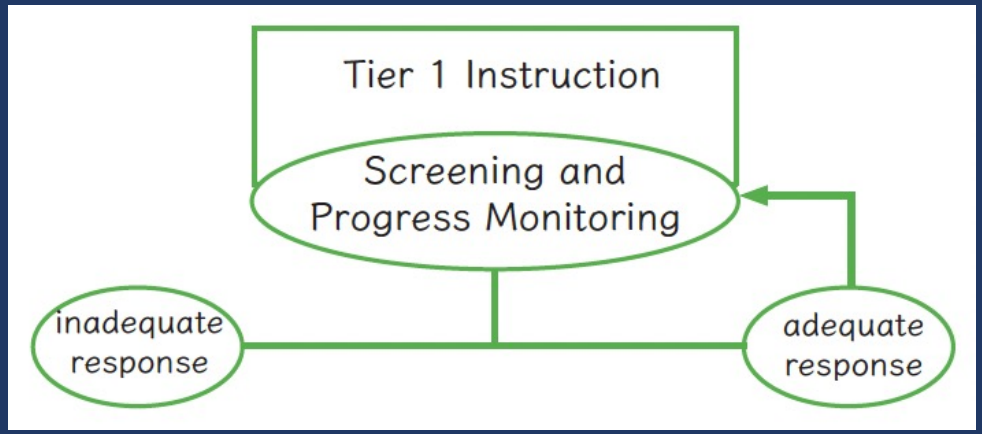
- Evidence-based practices

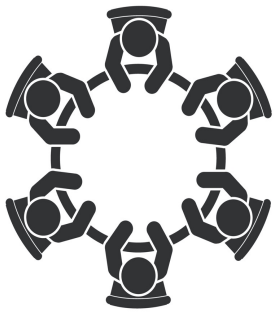
**Screening and Progress Monitoring:**

- Reliable measures with normative data
- Usually administered fall, winter, spring
- Reliable measures, administered regularly

**Decision Making:**

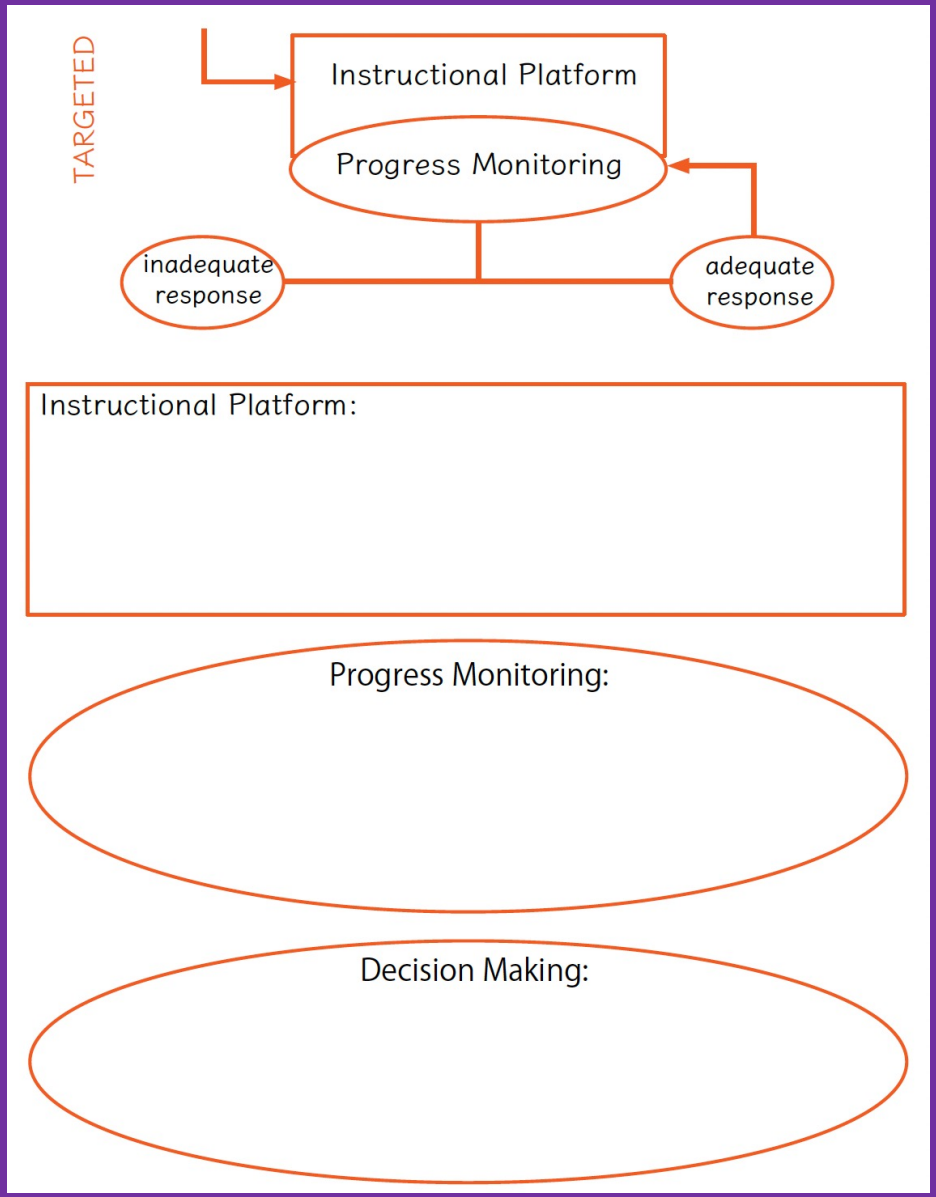
- After 6-10 weeks, student risk status is **confirmed** or **disconfirmed**

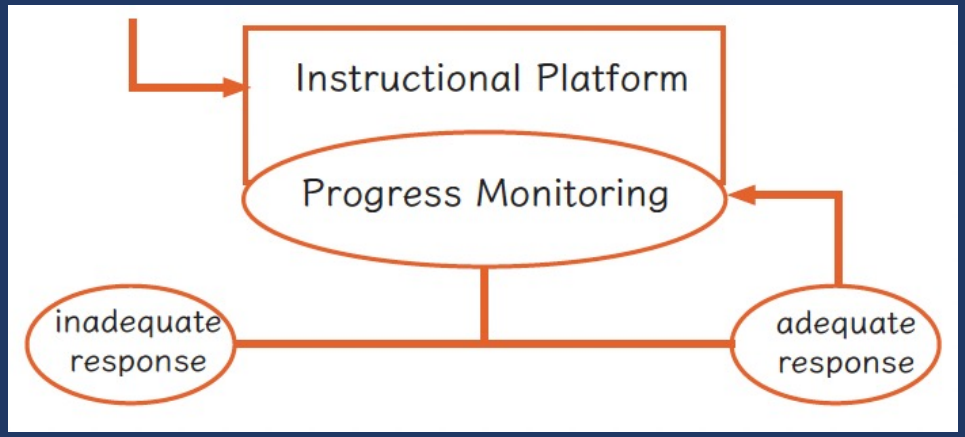


Describe your school's Tier 1 strengths.

Describe your school's Tier 1 opportunities for growth.






- Students are tutored in small groups using **evidence-based practices**
- Tutoring takes place three or four times a week
- Each tutoring session lasts 30 to 60 minutes
- Tutoring lasts 10 to 20 weeks
- **Progress monitoring** continues weekly

# Instructional Platform

## INSTRUCTIONAL DELIVERY

Explicit instruction

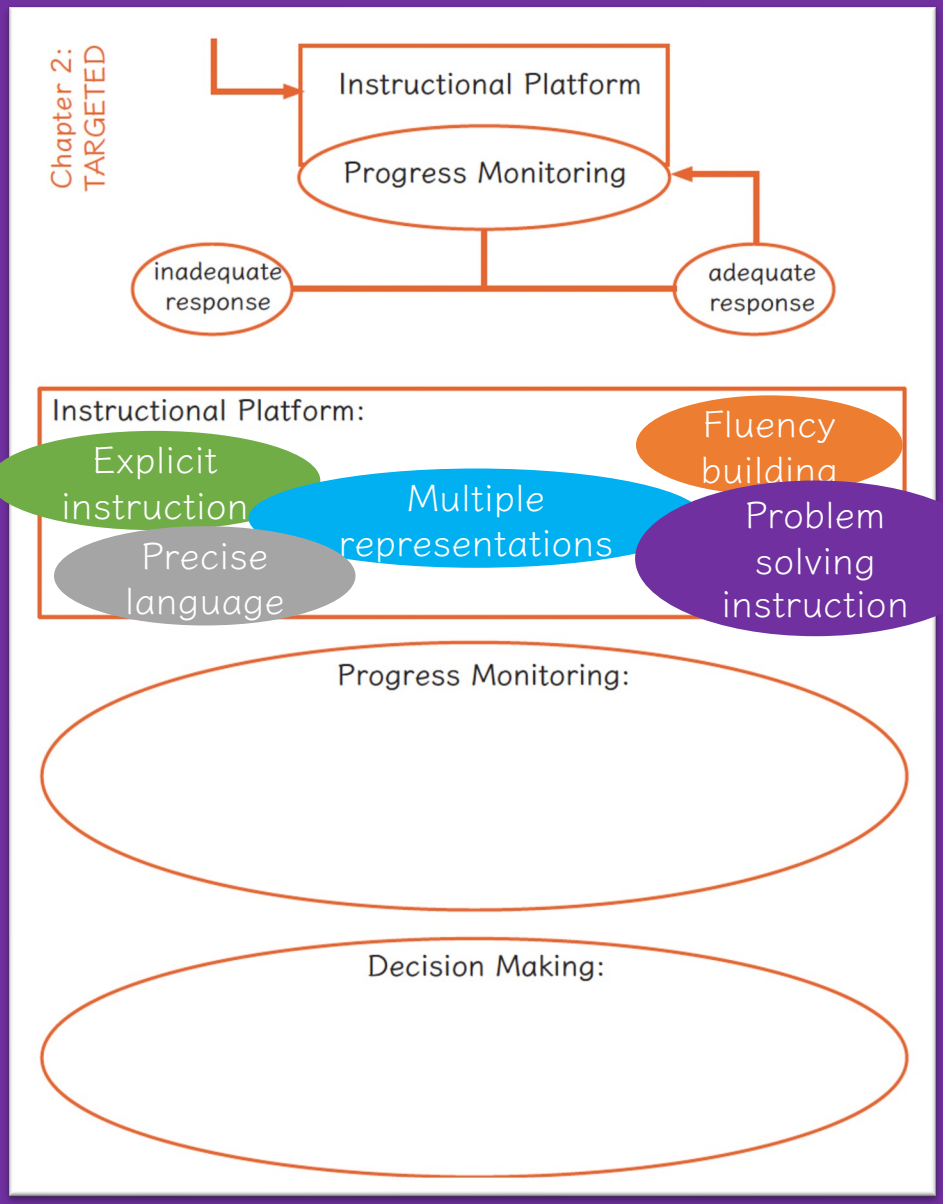
Precise language

Multiple representations

## INSTRUCTIONAL STRATEGIES

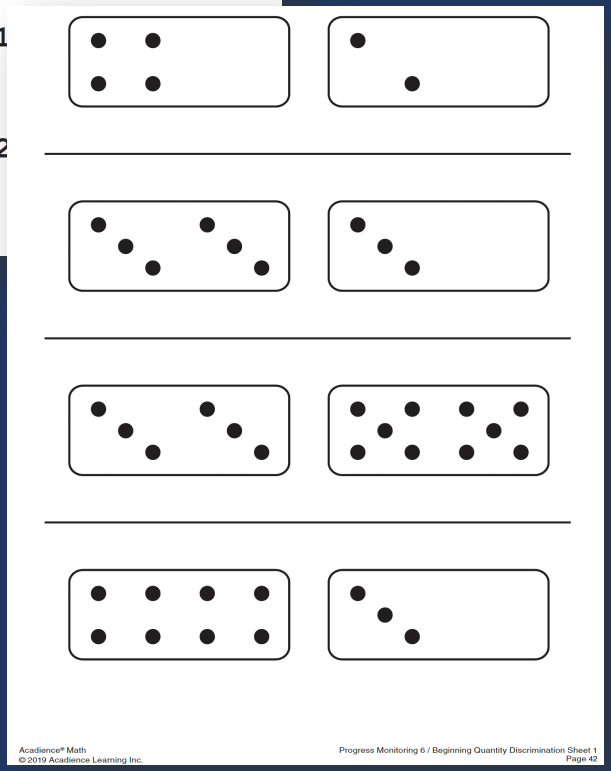
Fluency building

Problem solving instruction



| | | | | |
|---|---|---|---|---|
| 6 | 16 | 23 | 10 | 17 |
| 38 | 97 | 20 | 15 | 24 |
| 14 | 33 | 11 | 79 | 8 |
| 21 | 19 | 93 | 3 | 49 |
| 4 | 30 | 1 | | |
| 28 | 7 | 2 | | |

Acadience® Math
© 2019 Acadience Learning Inc.



Acadience® Math
© 2019 Acadience Learning Inc.

Progress Monitoring 6 / Beginning Quantity Discrimination Sheet 1
Page 42

**Acadience® Math / Computation Grade 4**
**Benchmark 1 / Form A**

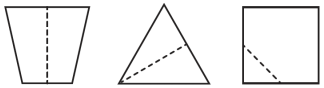
Total: _____

| | | | | |
|---|---|---|---|---|
| 1. 527 +320 | 2. 4778 +2242 | 3. $8\frac{4}{5} - 6\frac{2}{5} =$ | 4. 9 x8 | 5. $4\overline{)573}$ |
| 6. 197 - 74 | 7. $\frac{5}{8} + \frac{2}{8} =$ | 8. 7273 - 387 | 9. 19 x11 | 10. $9\frac{7}{12} - 1\frac{4}{12} =$ |
| 11. $8\overline{)642}$ | 12. $7\overline{)49}$ | 13. 99 x72 | 14. $\frac{1}{4} + \frac{2}{4} =$ | 15. 526 x 6 |
| 16. $8\frac{9}{10} - 1\frac{5}{10} =$ | 17. $\frac{1}{3} + \frac{1}{3} =$ | 18. $\frac{9}{12}$ | | |
| 21. $3\overline{)397}$ | 22. 65 x23 | 23. | | |

**Acadience® Math / Concepts and Applications**
**Grade 4 / Benchmark 1**

Total: _____

1. Is the dotted line a line of symmetry for each shape? Write "yes" or "no" in the space provided below each shape.



_____ _____ _____

2. Compare the number in Box 1 with the number in Box 2. Fill in the blank with > (greater than), = (equal to), or < (less than):

| Box 1 | >, =, < | Box 2 |
|---|---|---|
| 835 | | 751 |
| 333 | | 613 |
| 131 | | 168 |

3. List three numbers that are multiples of 4:

_____ _____ _____

4. Jake read 17 books over the summer that were nonfiction and 43 books that were fiction. His friend Ross read 38 books total. How many more books did Jake read than Ross? _____ books.

5. Compare the decimal in Box 1 with the decimal in Box 2. Fill in the blank with > (greater than), = (equal to), or < (less than):

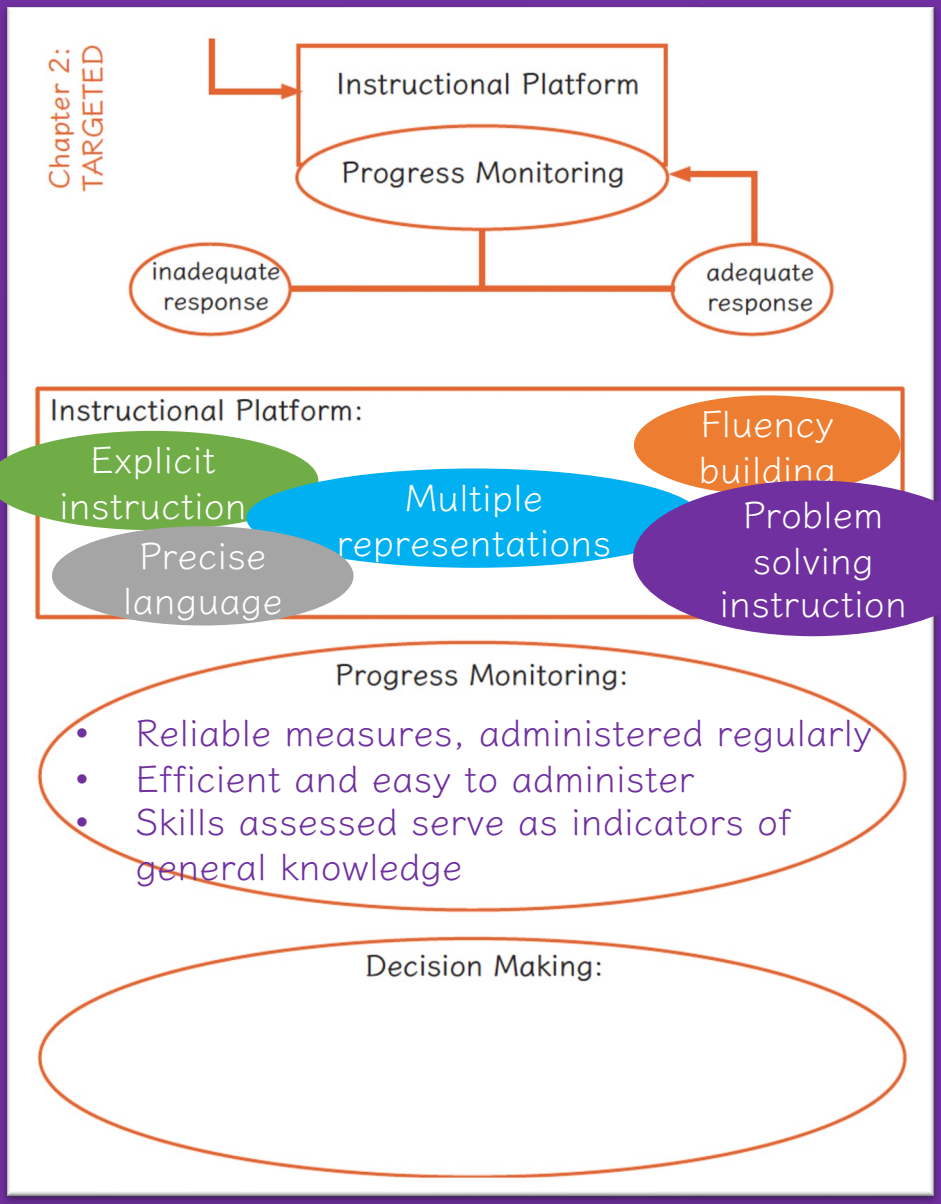
| Box 1 | >, =, < | Box 2 |
|---|---|---|
| 0.47 | | 0.25 |
| 0.39 | | 0.68 |
| 0.89 | | 0.91 |

6. We rented a movie that was 2 hours and 15 minutes long. How many minutes total was the movie? _____ minutes.

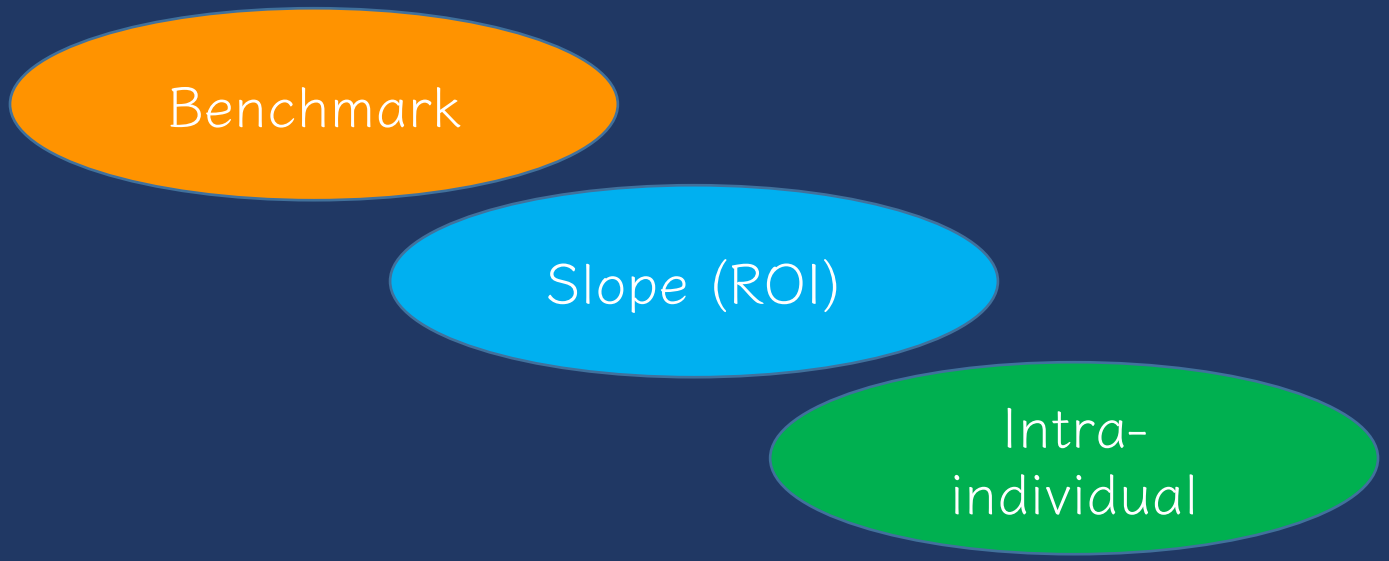
Acadience® Math
© 2019 Acadience Learning Inc.

Concepts and Applications / G4 / Benchmark 1
1

https://www.acadiencelearning.org



# Setting Goals

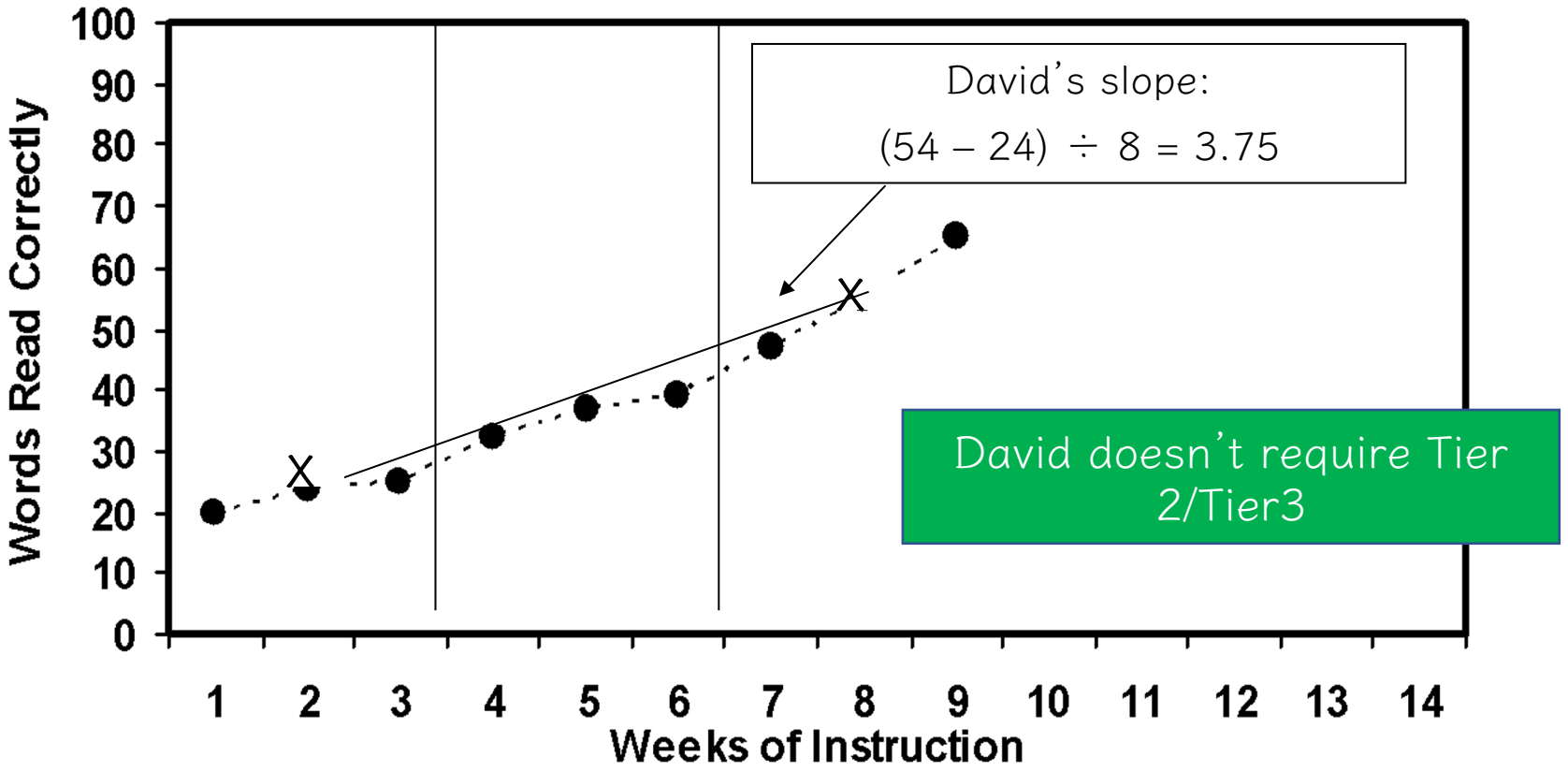


# Determining Response

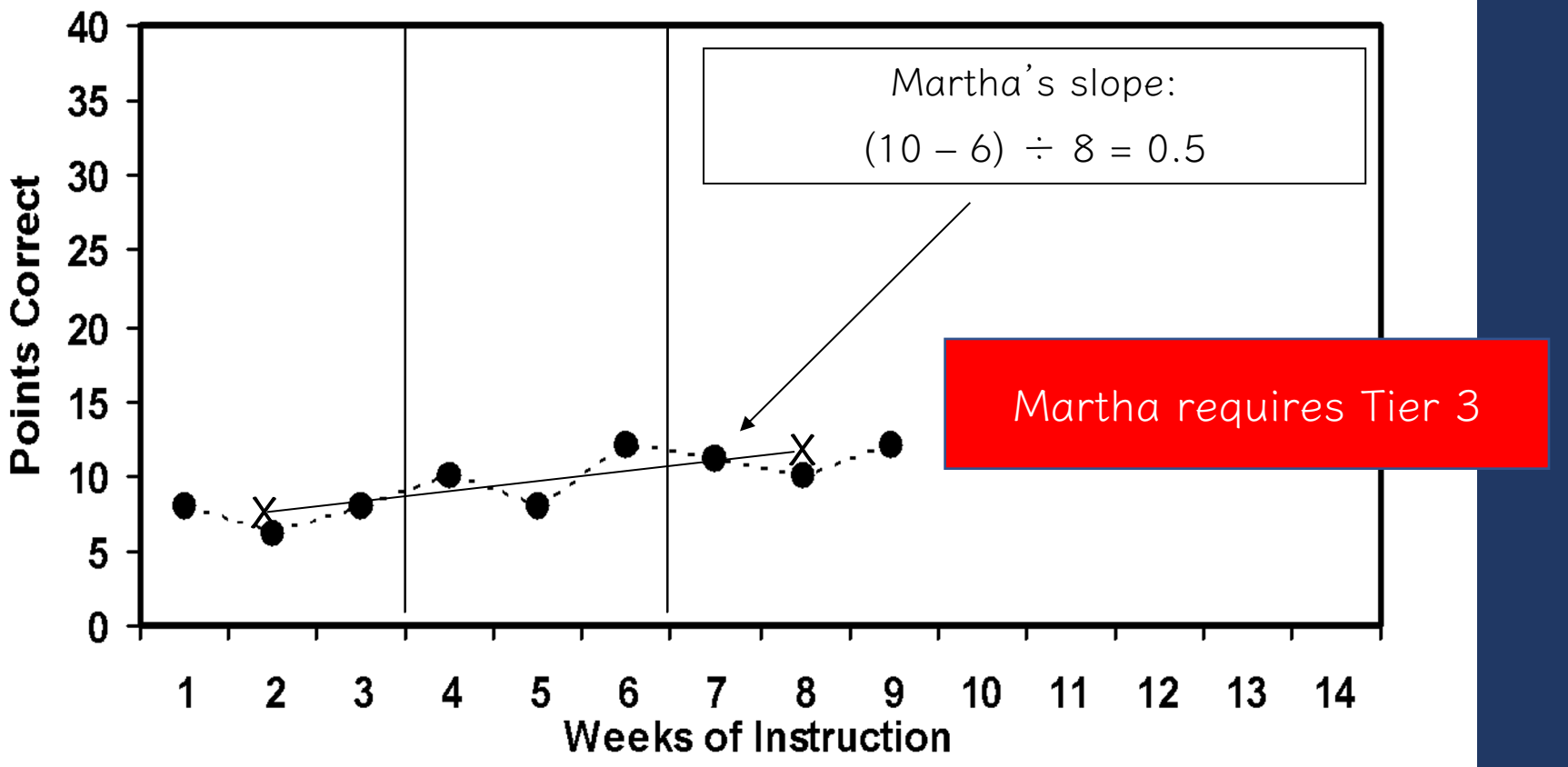
Four most recent, consecutive scores

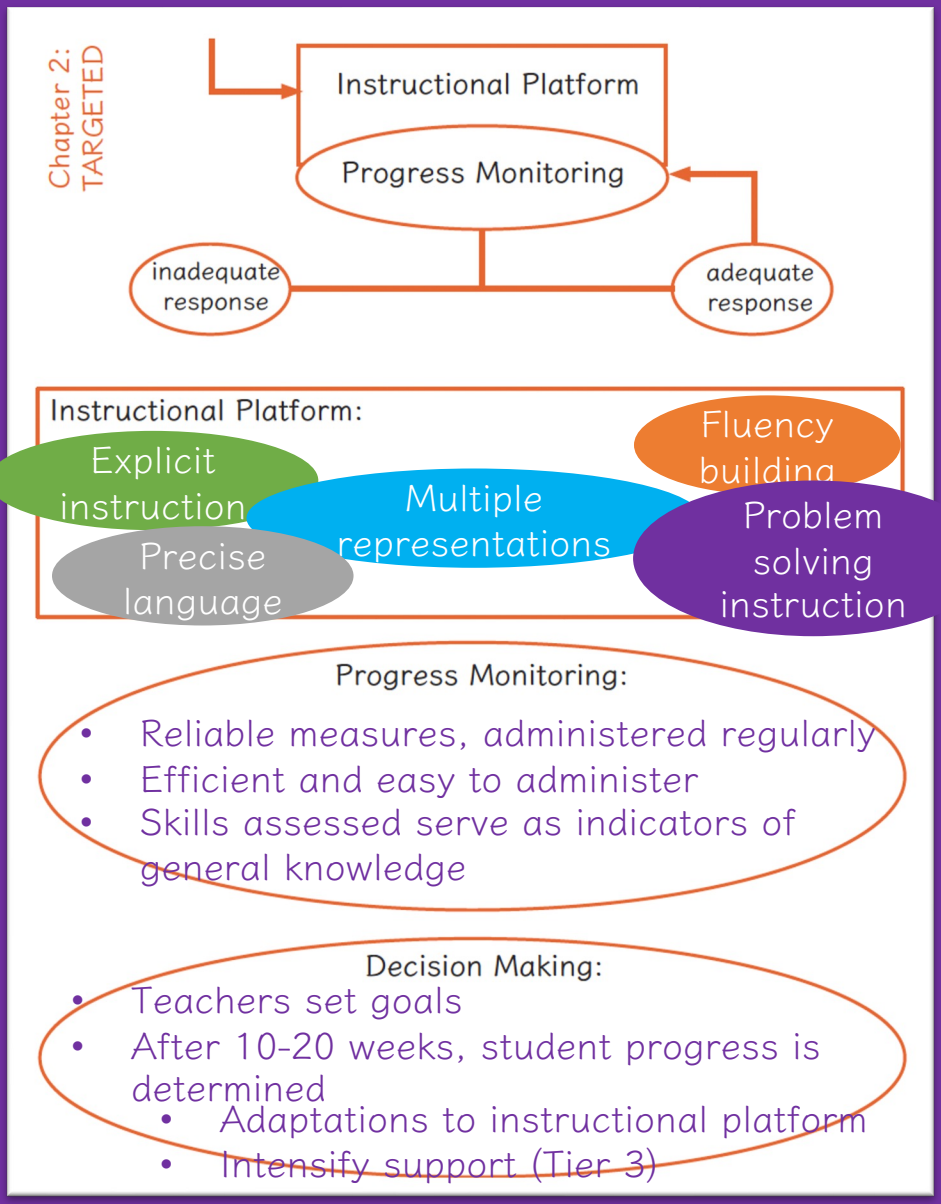
Trendline

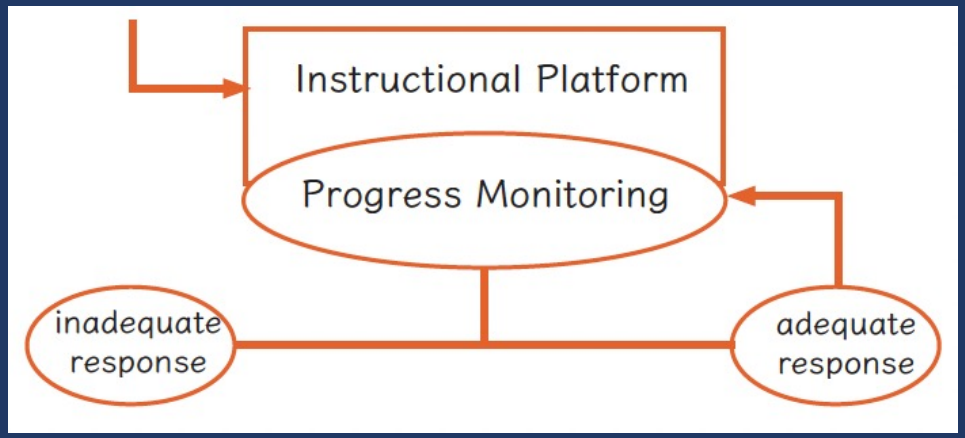
# David

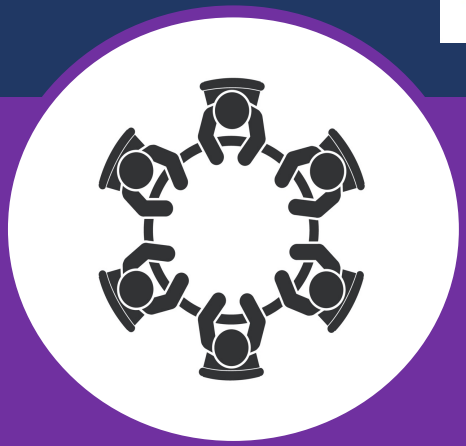


# Martha



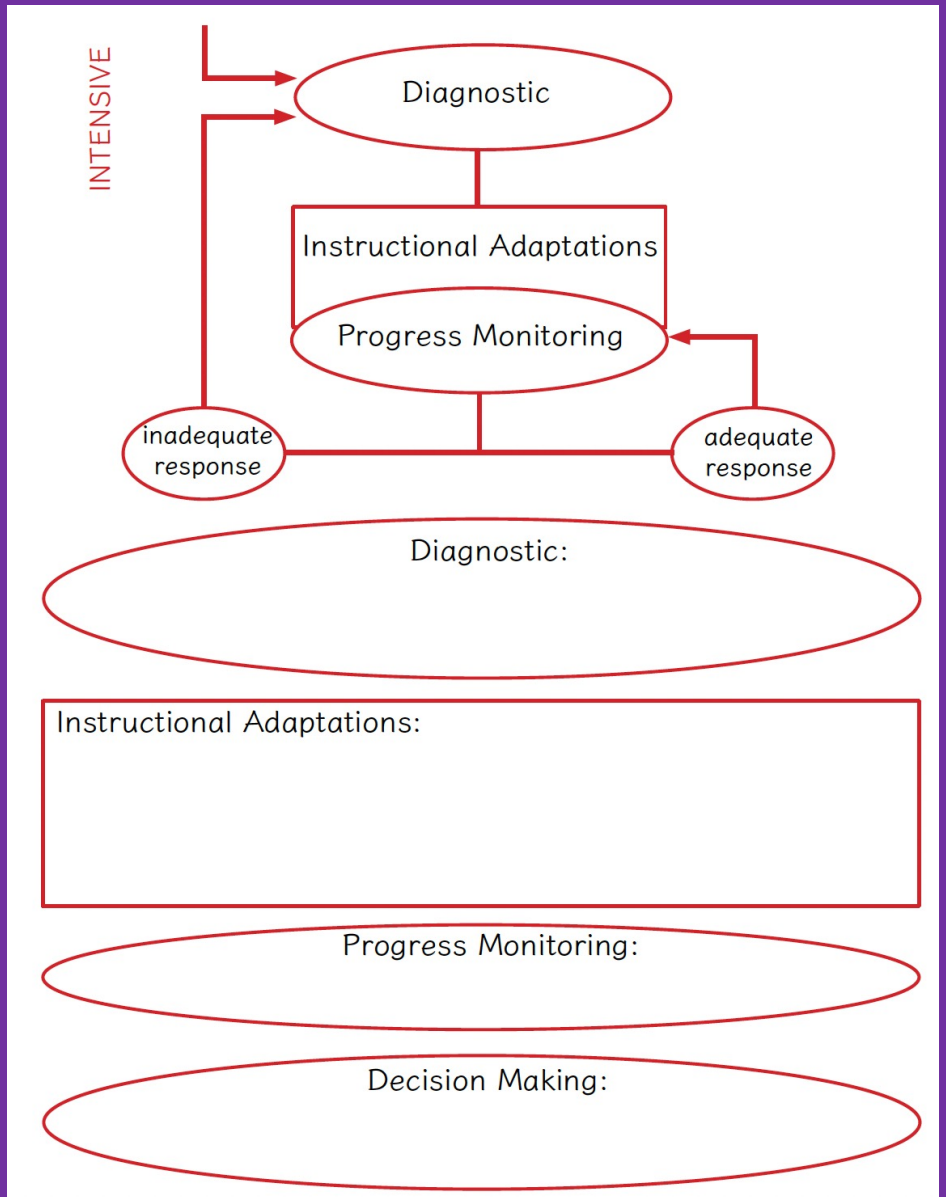


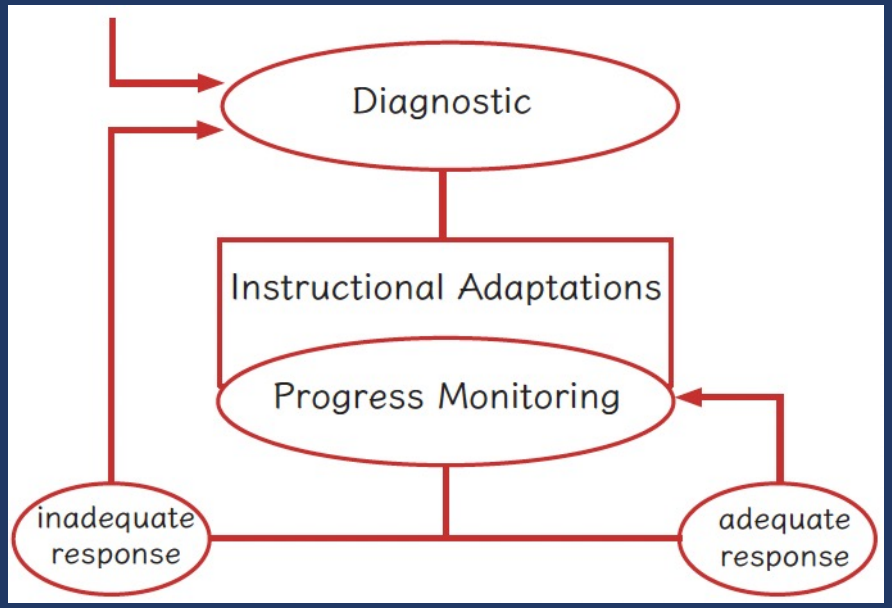


Describe your school's Tier 2 strengths.

Describe your school's Tier 2 opportunities for growth.






- **Diagnostics** *are conducted*
- **Adaptations** *are made to the student's intervention*
- Student progress is monitored weekly
  - With *adequate* slopes or end levels, students return to Tier 1 or 2

Implement with greater fidelity

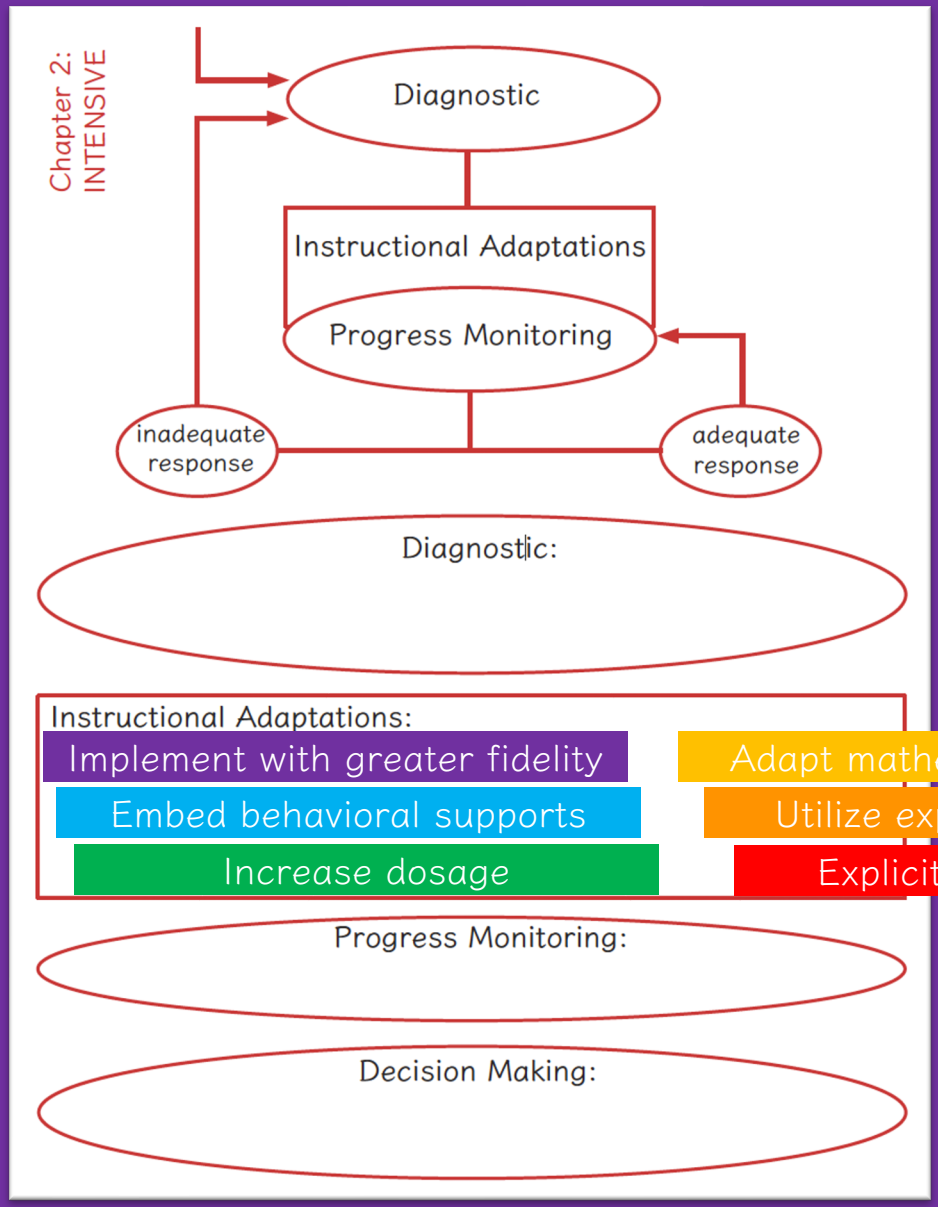
Embed behavioral supports

Increase dosage

Adapt mathematics content

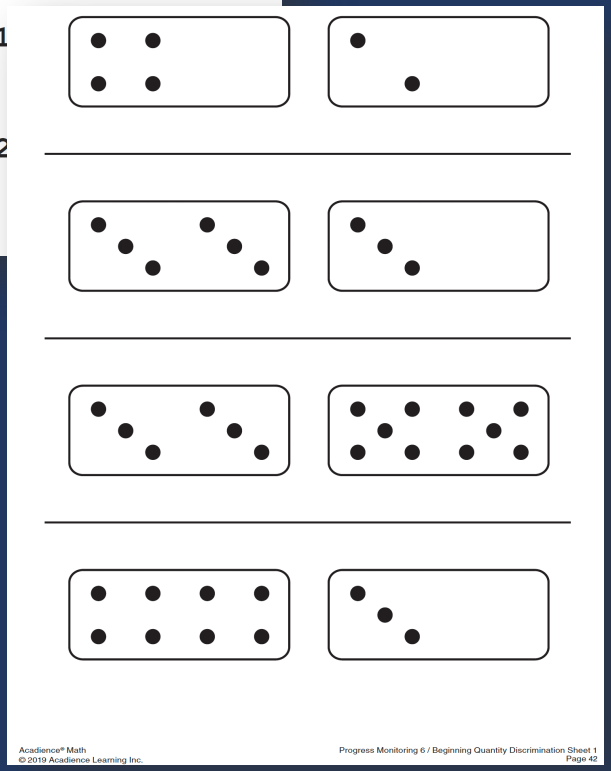
Utilize explicit instruction

Explicitly teach transfer



| | | | | |
|---|---|---|---|---|
| 6 | 16 | 23 | 10 | 17 |
| 38 | 97 | 20 | 15 | 24 |
| 14 | 33 | 11 | 79 | 8 |
| 21 | 19 | 93 | 3 | 49 |
| 4 | 30 | 1 | | |
| 28 | 7 | 2 | | |

Acadience® Math
© 2019 Acadience Learning Inc.



Acadience® Math
© 2019 Acadience Learning Inc.

Progress Monitoring 6 / Beginning Quantity Discrimination Sheet 1
Page 42

**Acadience® Math / Computation Grade 4**
**Benchmark 1 / Form A**

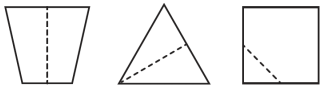
Total: _____

| | | | | |
|---|---|---|---|---|
| 1. 527 +320 | 2. 4778 +2242 | 3. $8\frac{4}{5} - 6\frac{2}{5} =$ | 4. 9 x8 | 5. $4\overline{)573}$ |
| 6. 197 - 74 | 7. $\frac{5}{8} + \frac{2}{8} =$ | 8. 7273 - 387 | 9. 19 x11 | 10. $9\frac{7}{12} - 1\frac{4}{12} =$ |
| 11. $8\overline{)642}$ | 12. $7\overline{)49}$ | 13. 99 x72 | 14. $\frac{1}{4} + \frac{2}{4} =$ | 15. 526 x 6 |
| 16. $8\frac{9}{10} - 1\frac{5}{10} =$ | 17. $\frac{1}{3} + \frac{1}{3} =$ | 18. $\frac{9}{12}$ | | |
| 21. $3\overline{)397}$ | 22. 65 x23 | 23. | | |

**Acadience® Math / Concepts and Applications**
**Grade 4 / Benchmark 1**

Total: _____

1. Is the dotted line a line of symmetry for each shape? Write "yes" or "no" in the space provided below each shape.



_____ _____ _____

2. Compare the number in Box 1 with the number in Box 2. Fill in the blank with > (greater than), = (equal to), or < (less than):

| Box 1 | >, =, < | Box 2 |
|---|---|---|
| 835 | | 751 |
| 333 | | 613 |
| 131 | | 168 |

3. List three numbers that are multiples of 4:

_____ _____ _____

4. Jake read 17 books over the summer that were nonfiction and 43 books that were fiction. His friend Ross read 38 books total. How many more books did Jake read than Ross? _____ books.

5. Compare the decimal in Box 1 with the decimal in Box 2. Fill in the blank with > (greater than), = (equal to), or < (less than):

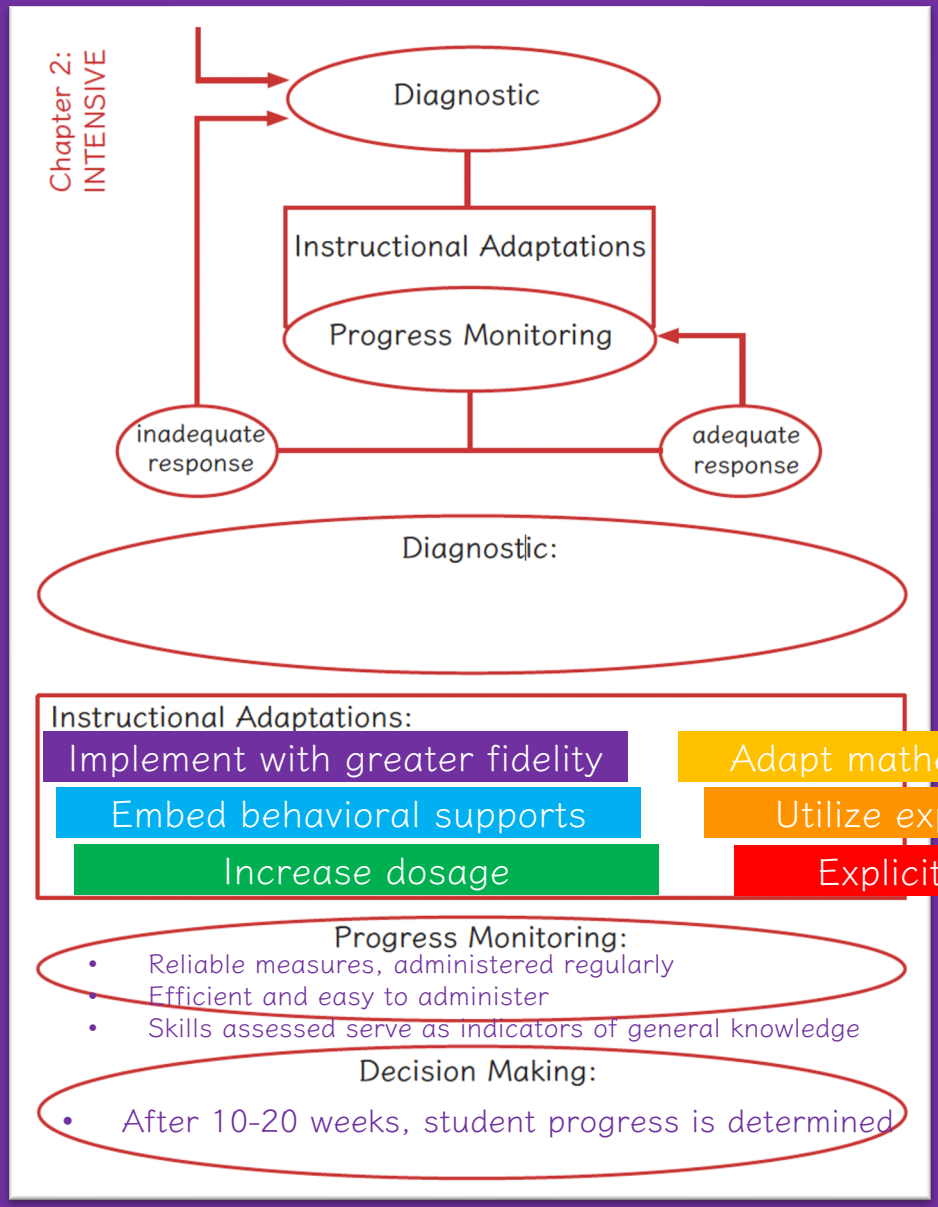
| Box 1 | >, =, < | Box 2 |
|---|---|---|
| 0.47 | | 0.25 |
| 0.39 | | 0.68 |
| 0.89 | | 0.91 |

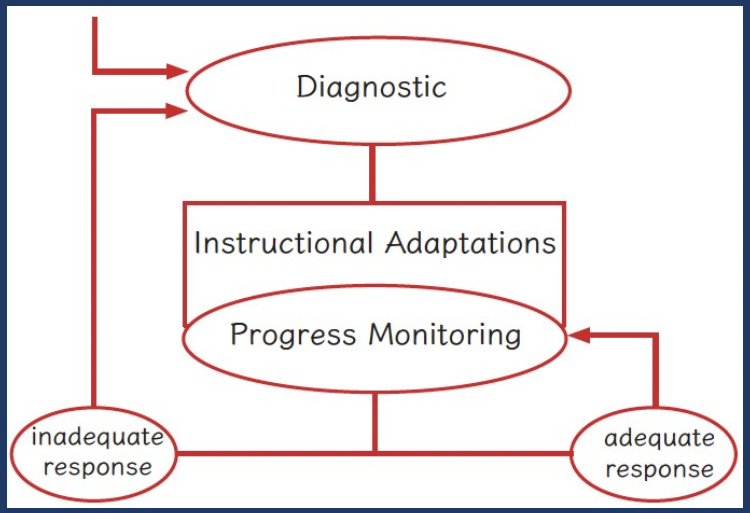
6. We rented a movie that was 2 hours and 15 minutes long. How many minutes total was the movie? _____ minutes.

Acadience® Math
© 2019 Acadience Learning Inc.

Concepts and Applications / G4 / Benchmark 1
1

https://www.acadiencelearning.org






Describe your school's Tier 3 strengths.

Describe your school's Tier 3 opportunities for growth.

# Objectives

Participants will describe the data-based decision making framework.

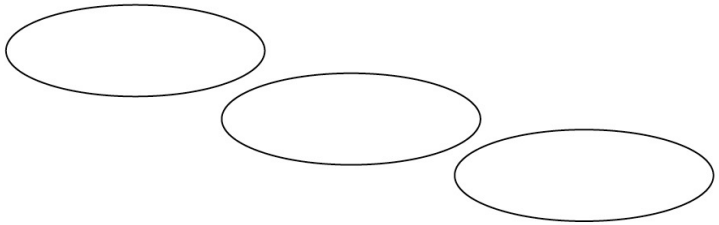
Participants will learn core components of an effective instructional platform in math.

Participants will explain how to make decisions about student progress.

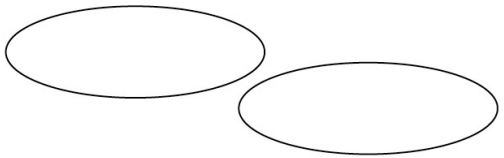
Participants will review common adaptations in math to the instructional platform.

Instructional Platform

Instructional Delivery



Instructional Strategies



# Instructional Platform

## INSTRUCTIONAL DELIVERY

Explicit instruction

Precise language

Multiple representations

## INSTRUCTIONAL STRATEGIES

Fluency building

Problem solving instruction

# Explicit Instruction

## MODELING

Step-by-step explanation

Planned examples

## PRACTICE

Guided practice

Independent practice

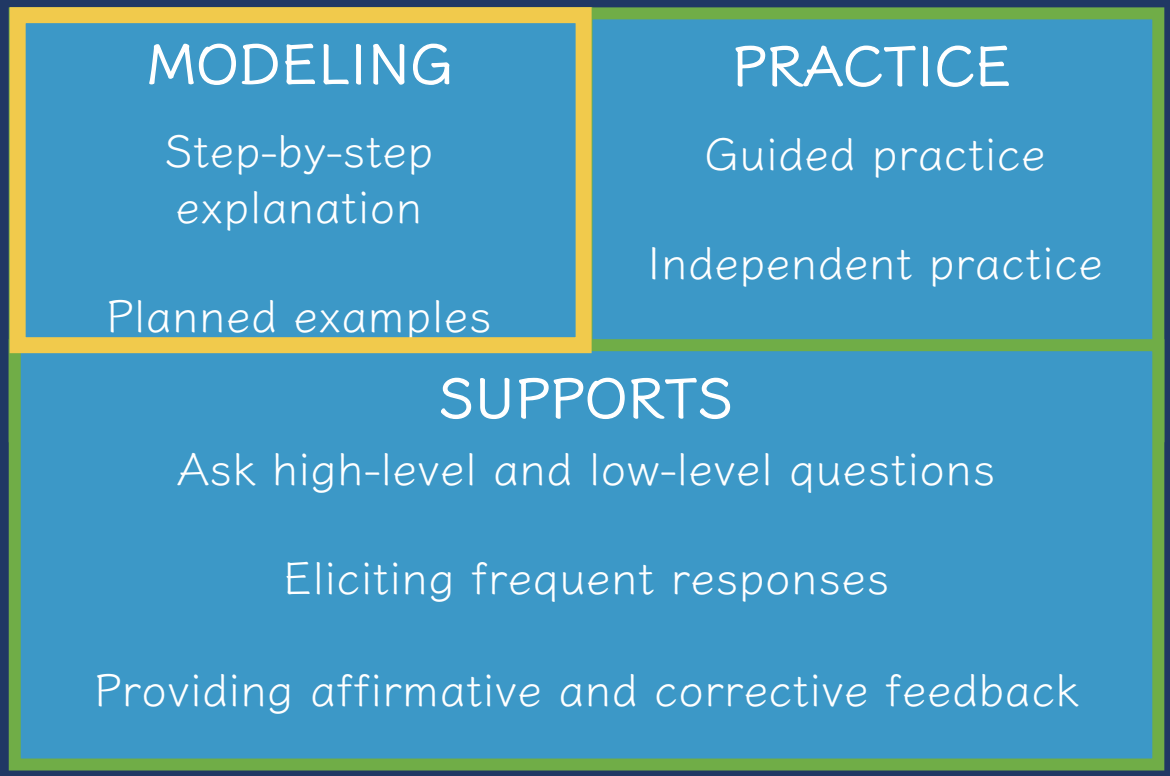
## SUPPORTS

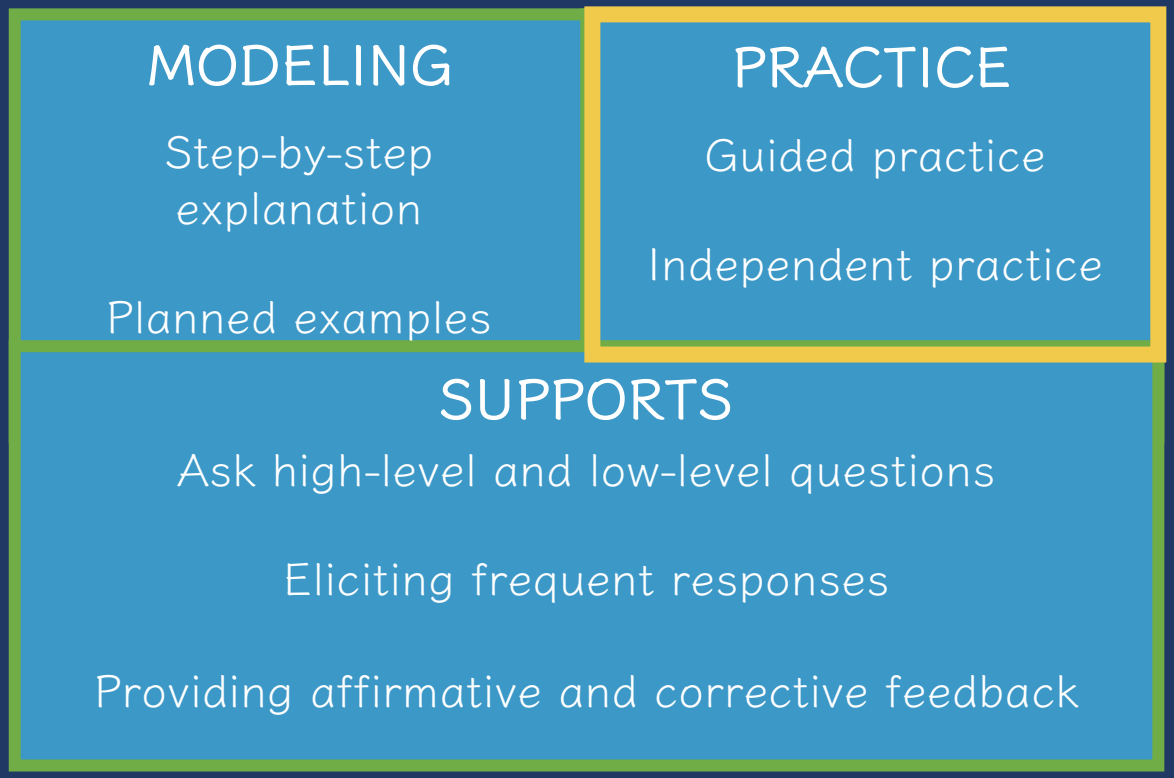
Ask high-level and low-level questions

Eliciting frequent responses

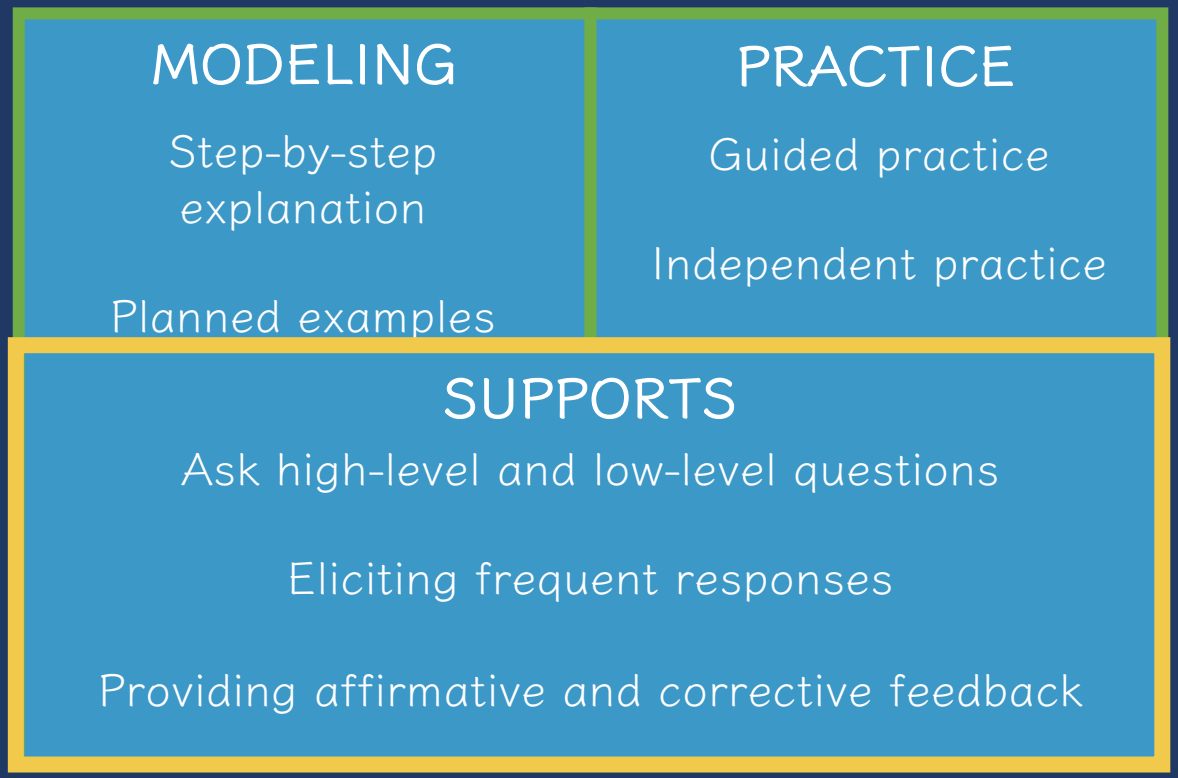
Providing affirmative and corrective feedback

**Modeling** is a dialogue between the teacher and students.



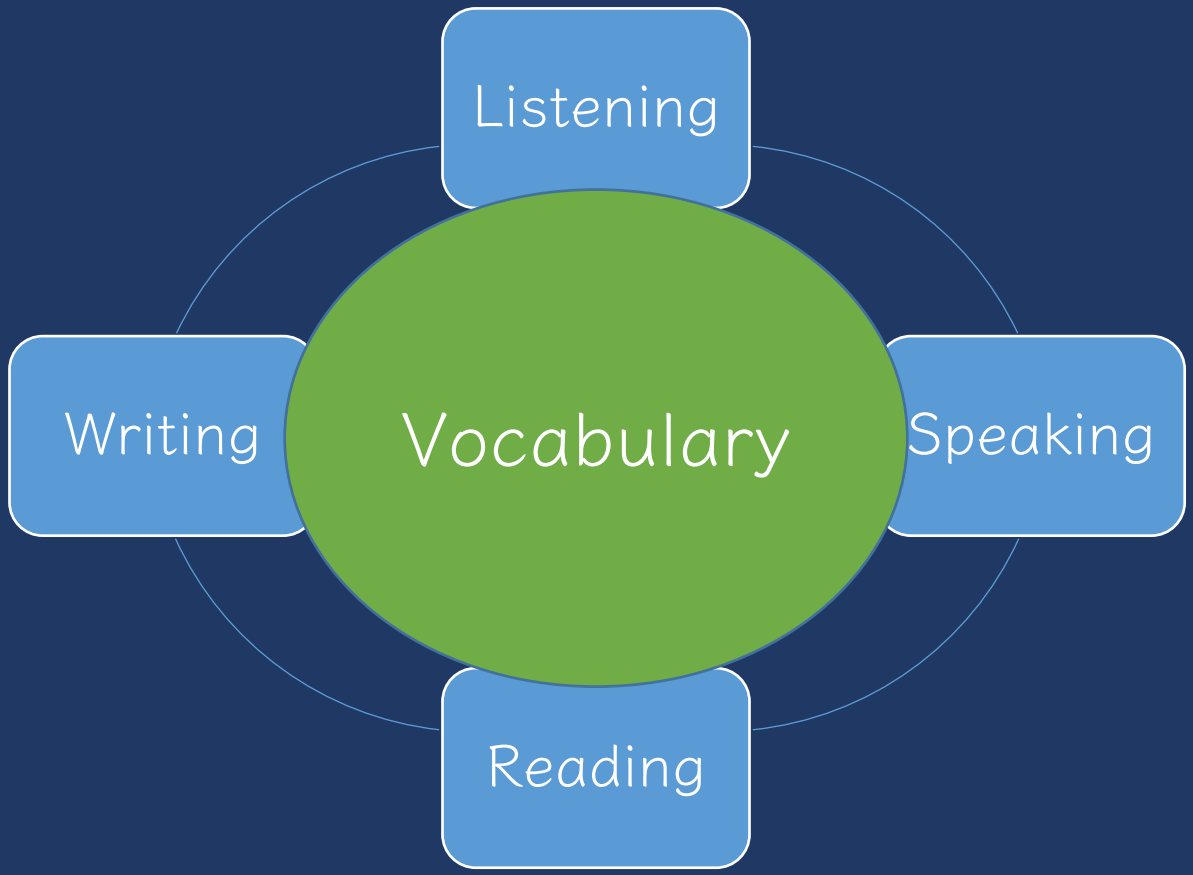



**Practice** continues as a dialogue between the teacher and students.




These **Supports** should be used in both **Modeling** and **Practice.**

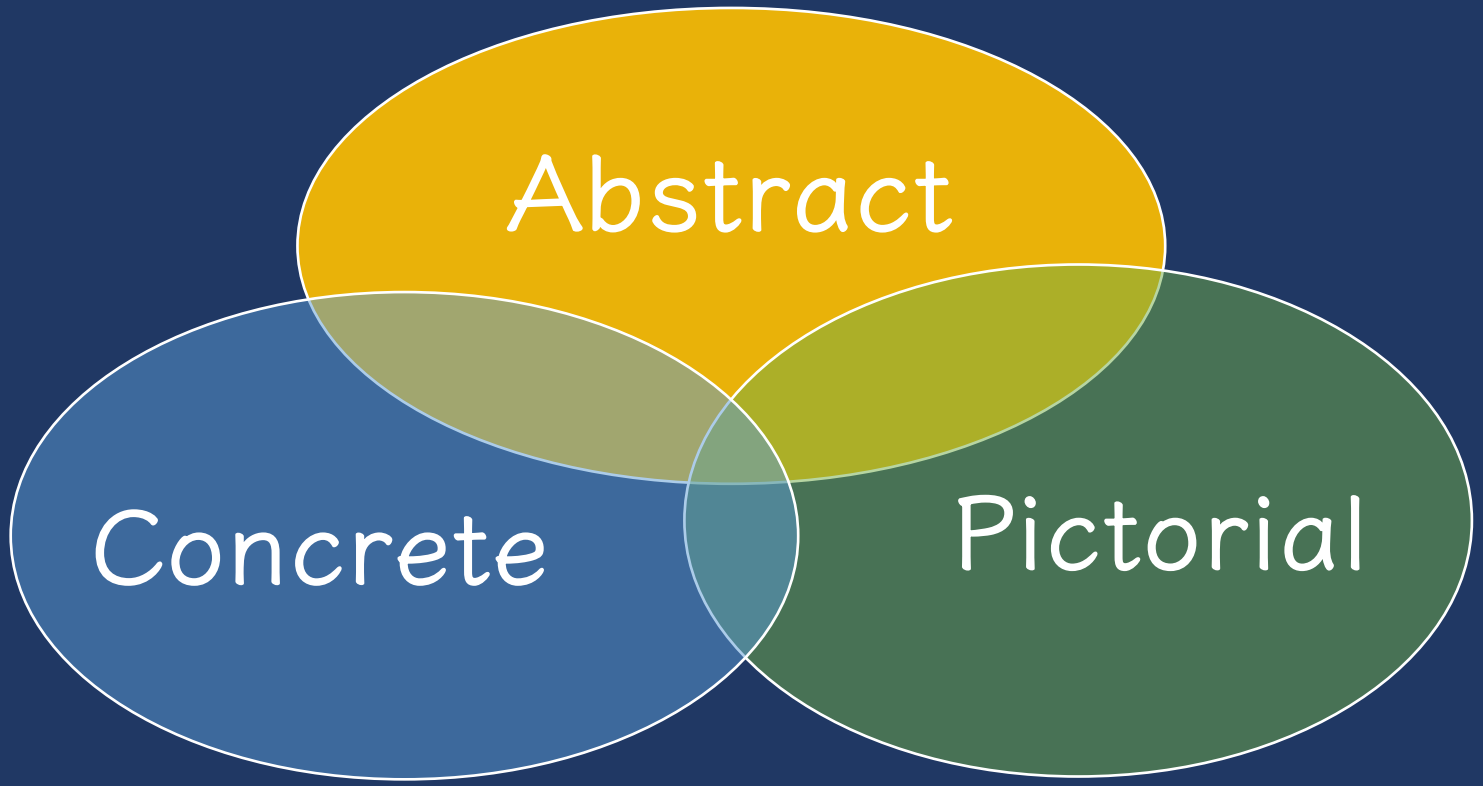
# Mathematical Language

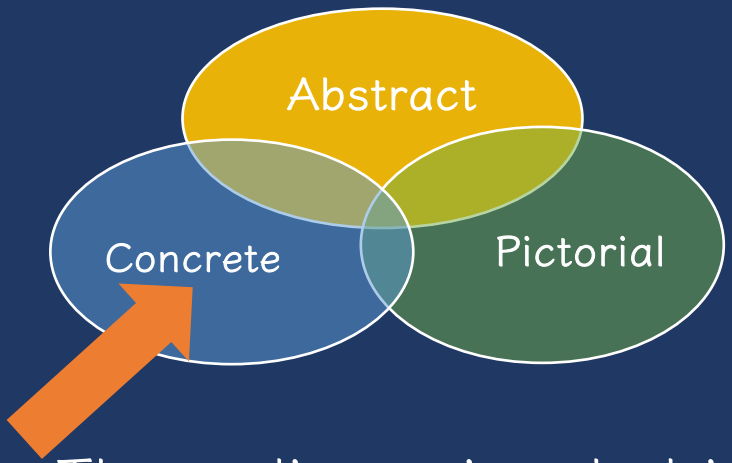


Use formal math language

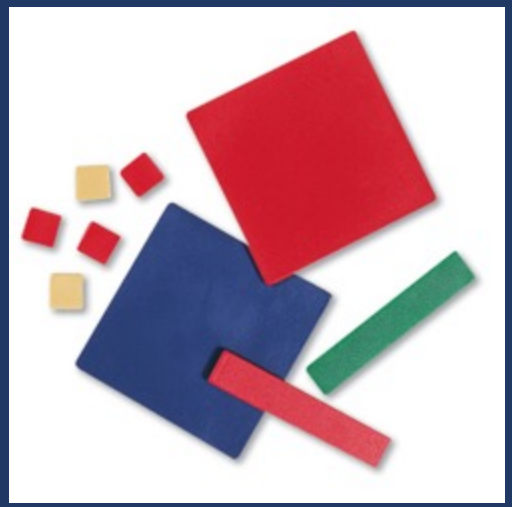
Use terms precisely

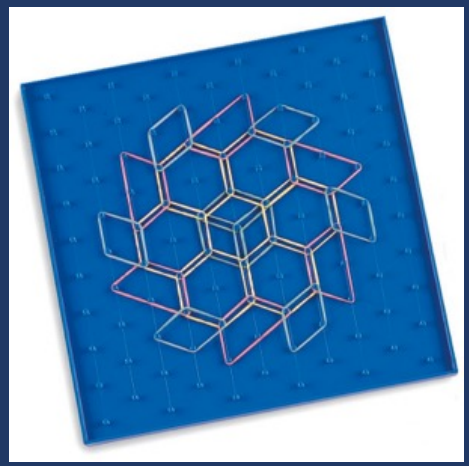
# Multiple Representations

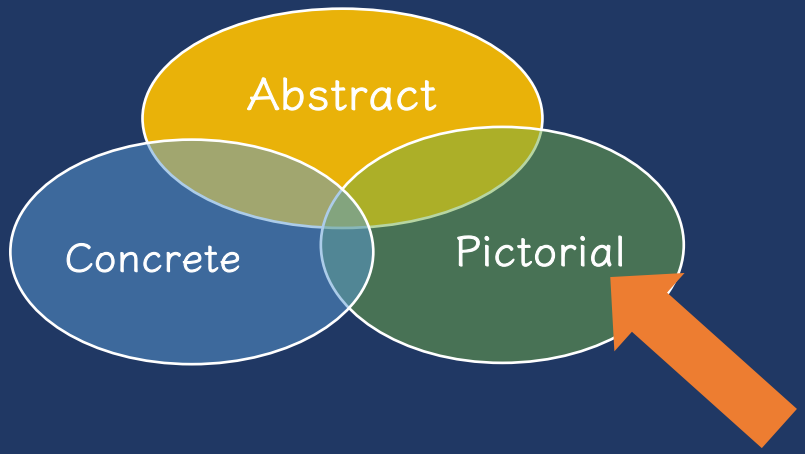




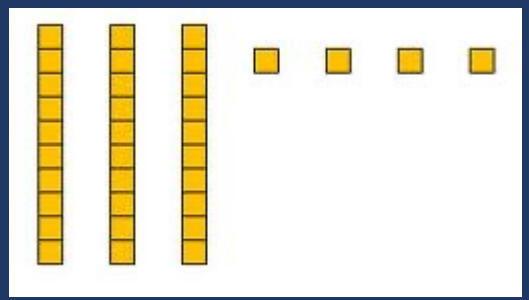

Three-dimensional objects

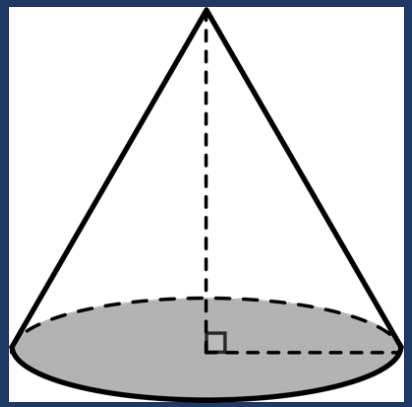


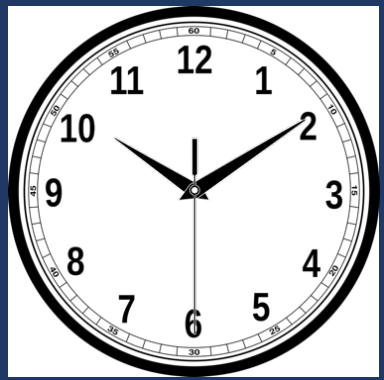


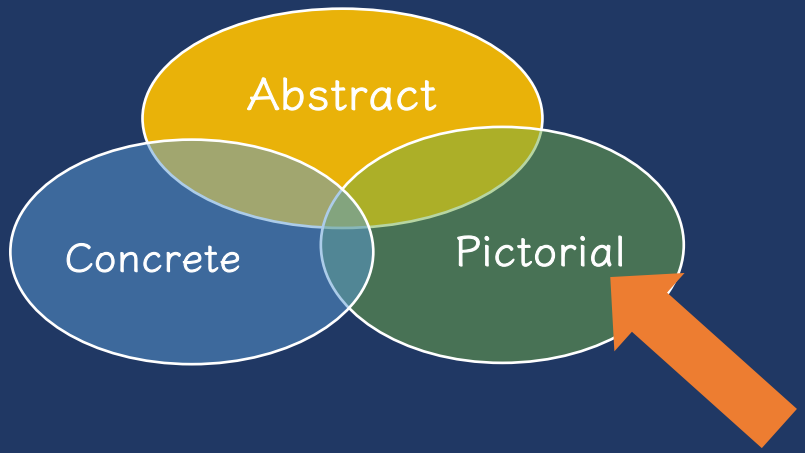



Two-dimensional images

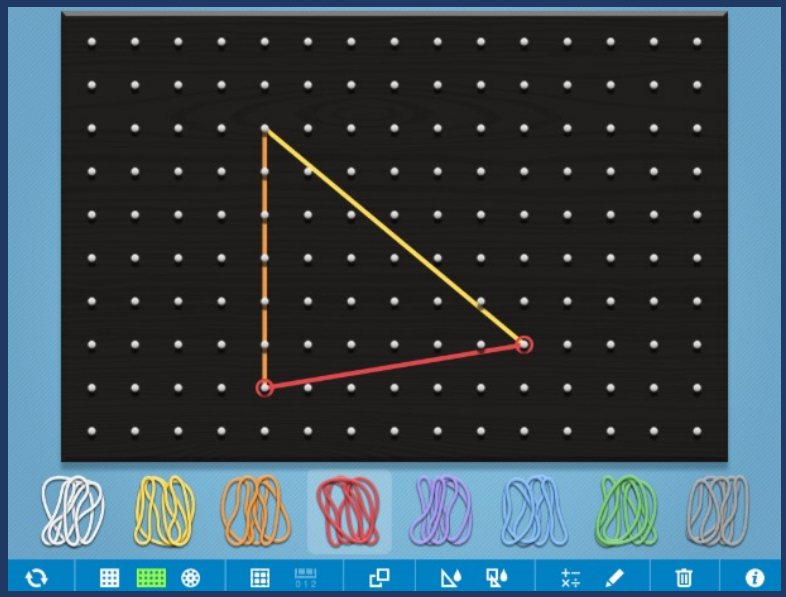


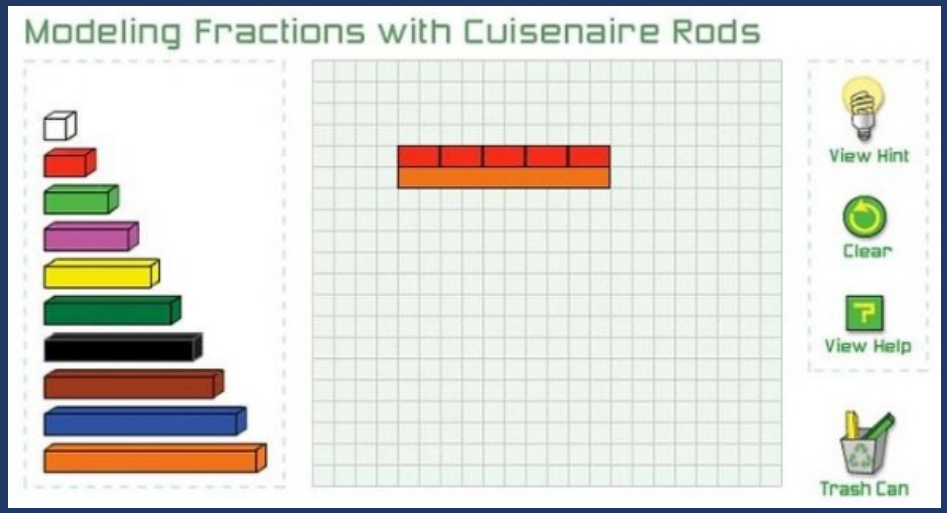


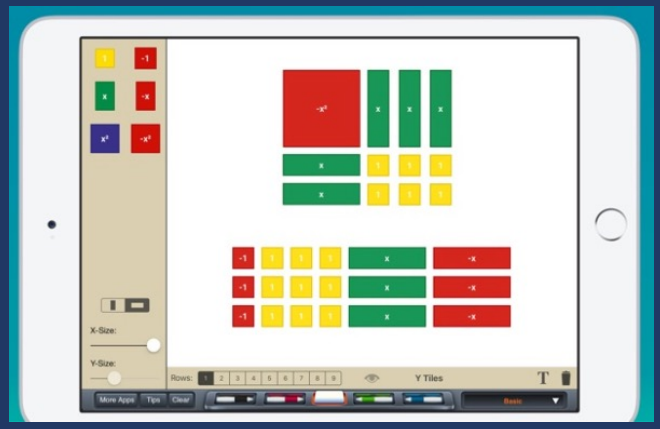


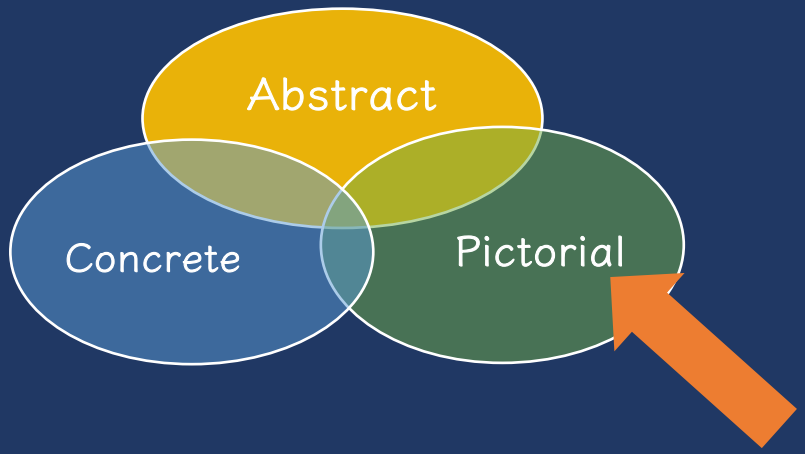



Two-dimensional images

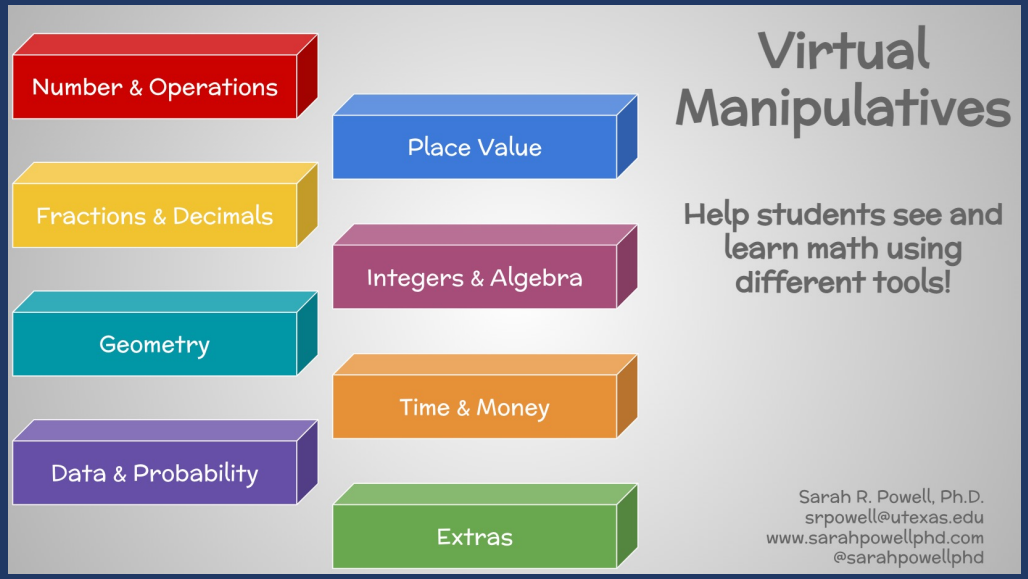




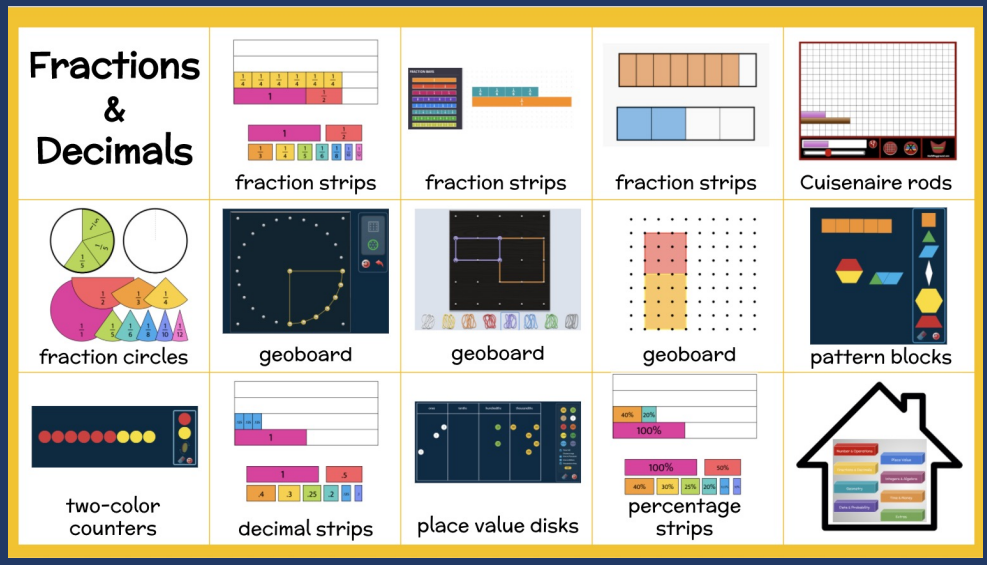


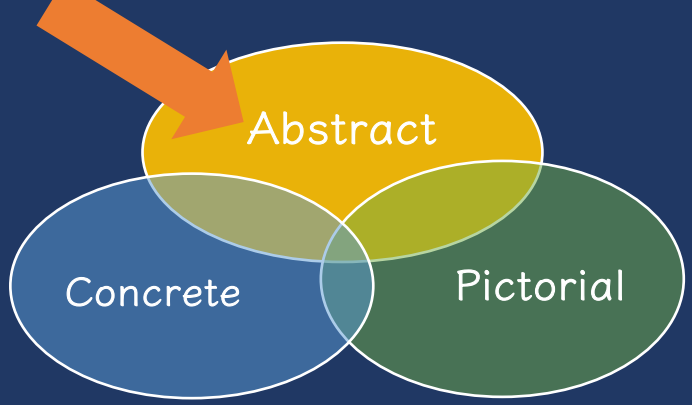

Two-dimensional images





bit.ly/srpowell






Numerals and symbols and words

$2 + 8 = 10$

34 = 3 tens and 4 ones

$x - 6 = 8$

$$\begin{array}{r} 4{,}179 \\ +\quad 569 \\ \hline \end{array}$$

# Building Fluency

# Building Fluency

Fluency is doing mathematics *easily and accurately.*

Fluency in mathematics *makes mathematics easier.*

Fluency provides less stress on working memory.

Fluency helps students build confidence with mathematics.

With fluency, it is important to emphasize both *conceptual learning and procedural learning.*

| | |
|---|---|
| Addition | Subtraction |
| Multiplication | Division |

Counting

Comparing numbers

Counting coins

Telling time

Identifying equivalent fractions

Knowing multiples

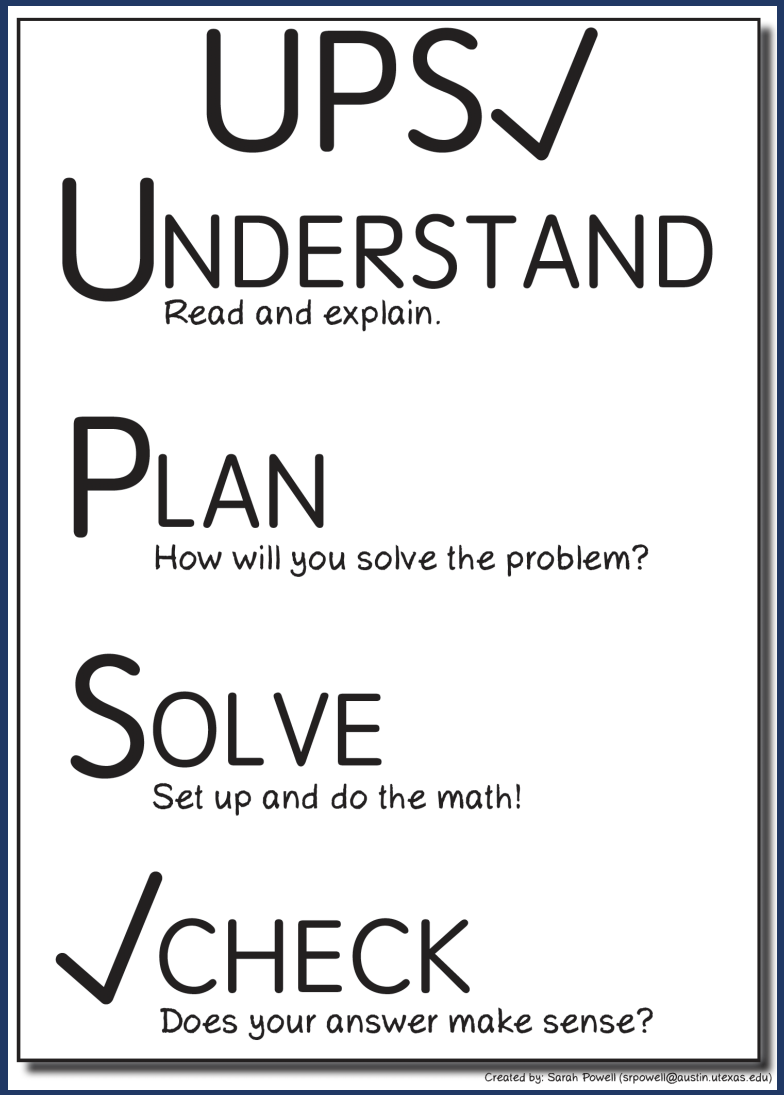
Identifying shapes

Knowing formulas

# Word-Problem Solving

Teach an attack strategy

Teach about schemas



Total

Difference

Change

Equal Groups

Comparison

Ratios/Proportions

Describe your strengths with the instructional platform.

Describe an opportunity for growth.

# Objectives

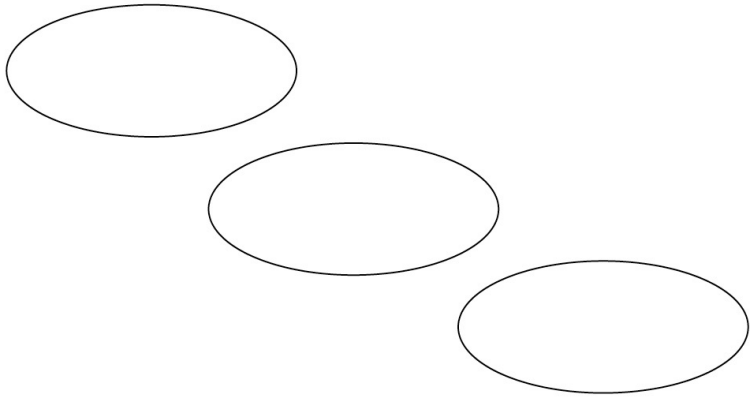
Participants will describe the data-based decision making framework.

Participants will learn core components of an effective instructional platform in math.

Participants will explain how to make decisions about student progress.

Participants will review common adaptations in math to the instructional platform.

Setting Goals

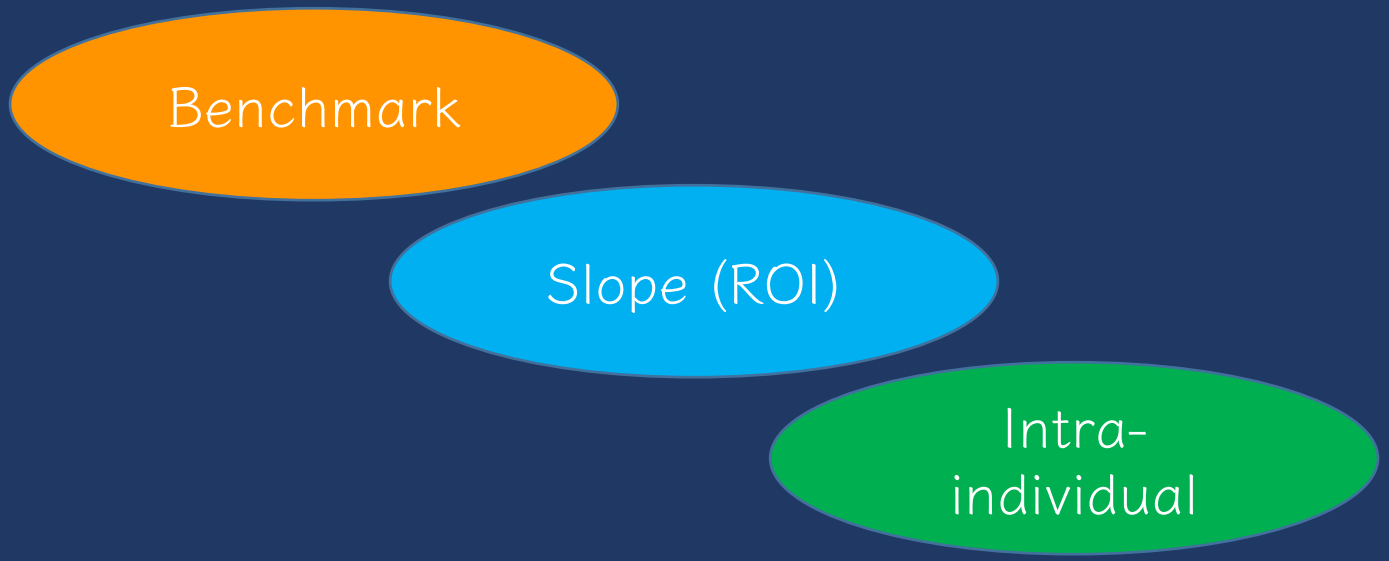


Determining Response

Four most recent, consecutive scores

Trendline

# Setting Goals



# Benchmark

1. Identify appropriate grade-level benchmark
2. Mark benchmark on student graph with an X
3. Draw goal-line from baseline progress monitoring scores to X

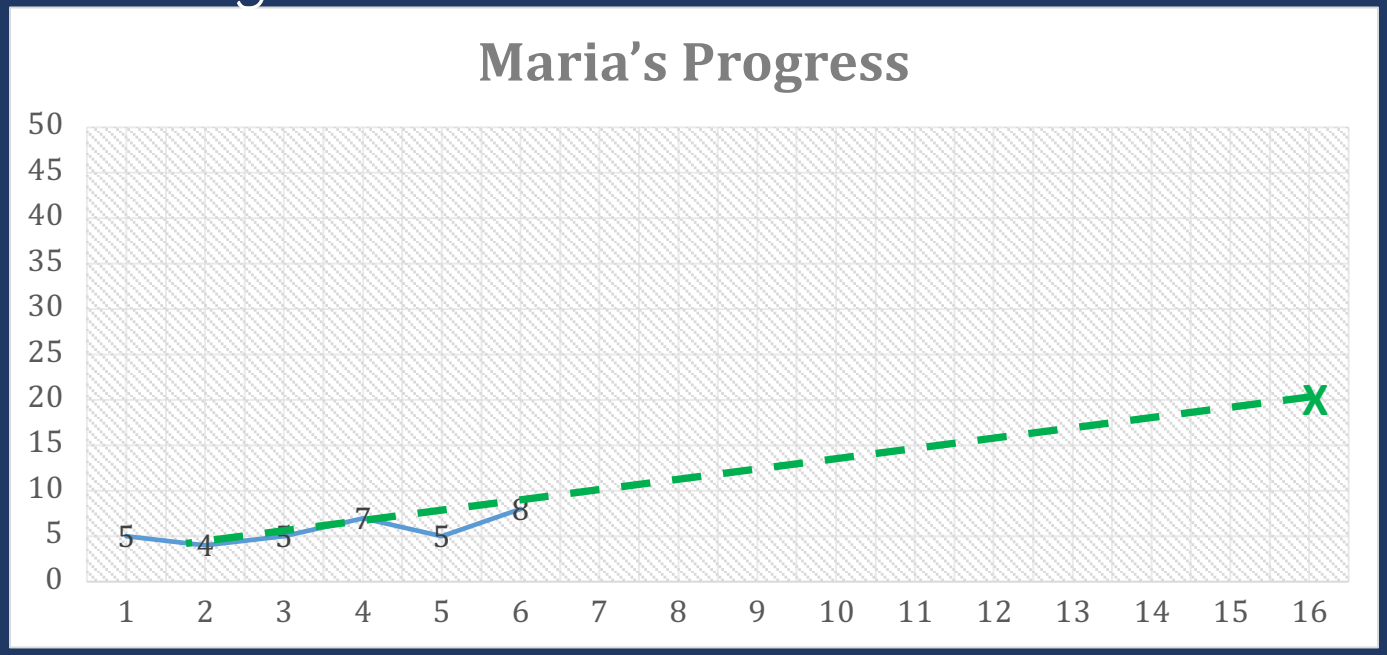
Benchmark

# 1. Identify appropriate grade-level benchmark

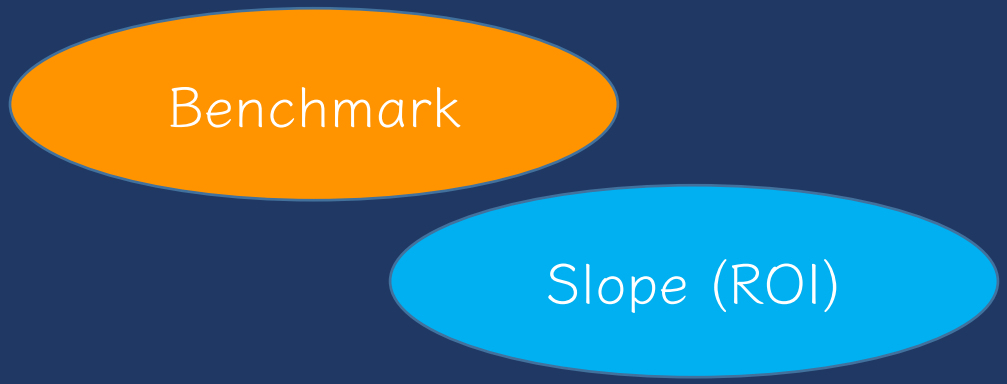
| Grade | Computation | Concepts and Applications |
|---|---|---|
| 1 | 20 digits | 20 points |
| 2 | 20 digits | 20 points |
| 3 | 30 digits | 30 points |
| 4 | 40 digits | 30 points |
| 5 | 30 digits | 15 points |
| 6 | 35 digits | 15 points |

# Benchmark

1. Identify appropriate grade-level benchmark
2. Mark benchmark on student graph with an X
3. Draw goal-line from baseline progress monitoring scores to X



# Setting Goals



# Slope (ROI)

1. Locate slope (i.e., rate of improvement – ROI)
2. Multiply ROI by number of weeks left in intervention
3. Add to baseline of progress monitoring scores
4. Mark goal on student graph with an X
5. Draw goal-line from baseline progress monitoring scores to X

# Slope (ROI)

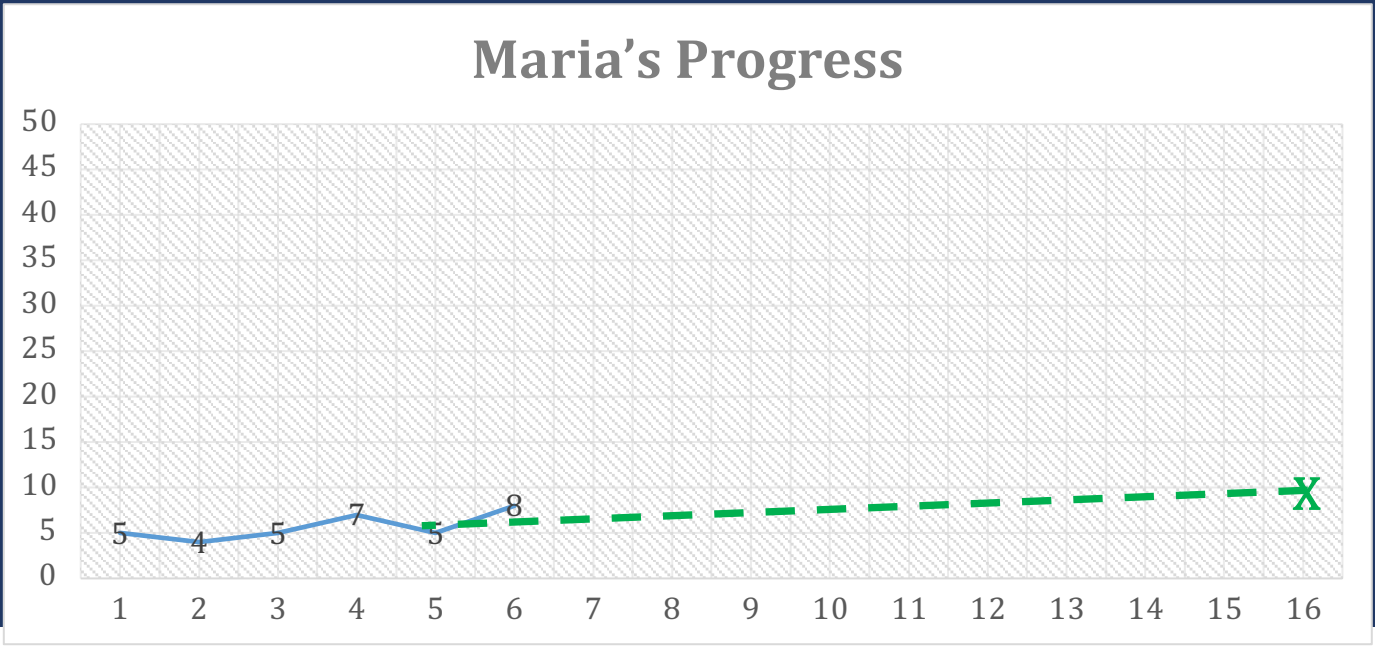
## 1. Locate slope (i.e., rate of improvement – ROI)

| Grade | Computation—Slope for Digits Correct | Concepts and Applications — Slope for Points |
|---|---|---|
| 1 | 0.35 | No data available |
| 2 | 0.30 | 0.40 |
| 3 | 0.30 | 0.60 |
| 4 | 0.70 | 0.70 |
| 5 | 0.70 | 0.70 |
| 6 | 0.40 | 0.70 |

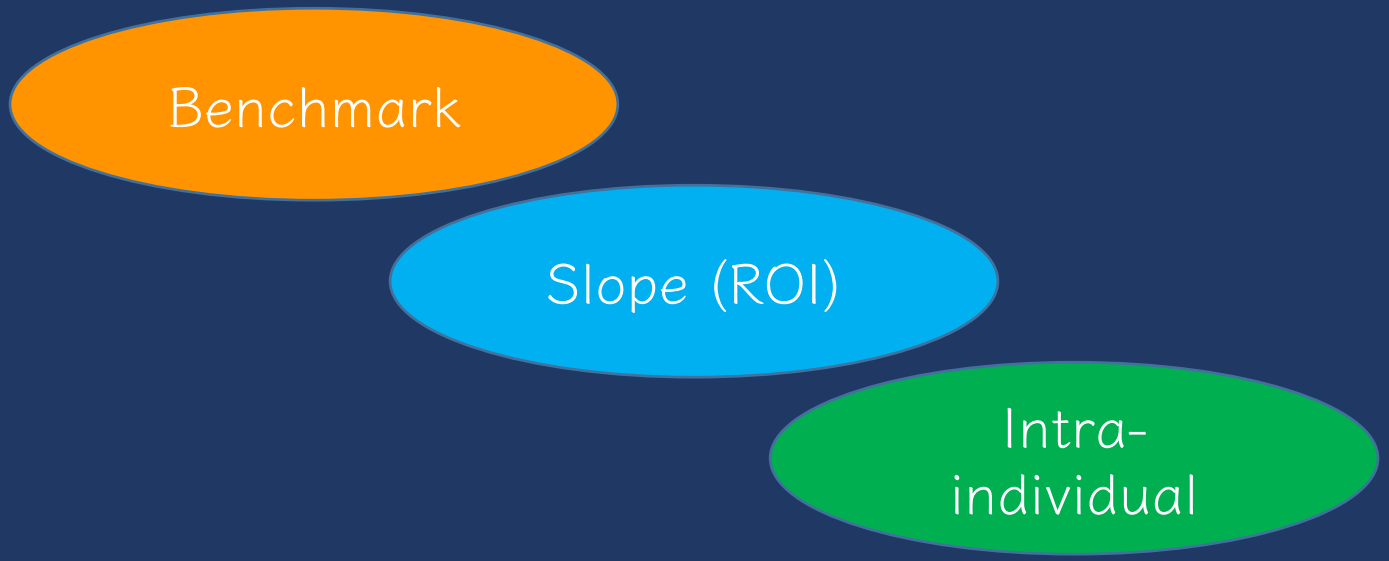
http://www.rti4success.org/resource/rti-implementer-series-module-2-progress-monitoring

# Slope (ROI)

1. Locate slope (i.e., rate of improvement – ROI) 0.30
2. Multiply ROI by number of weeks left in intervention 0.30 × 10 = 3
3. Add to baseline of progress monitoring scores 3 + 6.7 = 9.7
4. Mark goal on student graph with an X
5. Draw goal-line from baseline progress monitoring scores to X



# Setting Goals



# Intra-individual

1. Identify student's slope
2. Multiply slope by 1.5
3. Multiply by number of weeks until end of intervention
4. Add to student's baseline score
5. Mark goal on student graph with an X
6. Draw goal-line from baseline progress monitoring scores to X

# Intra-individual

1. Identify student's slope

**SLOPE CALCULATION:**

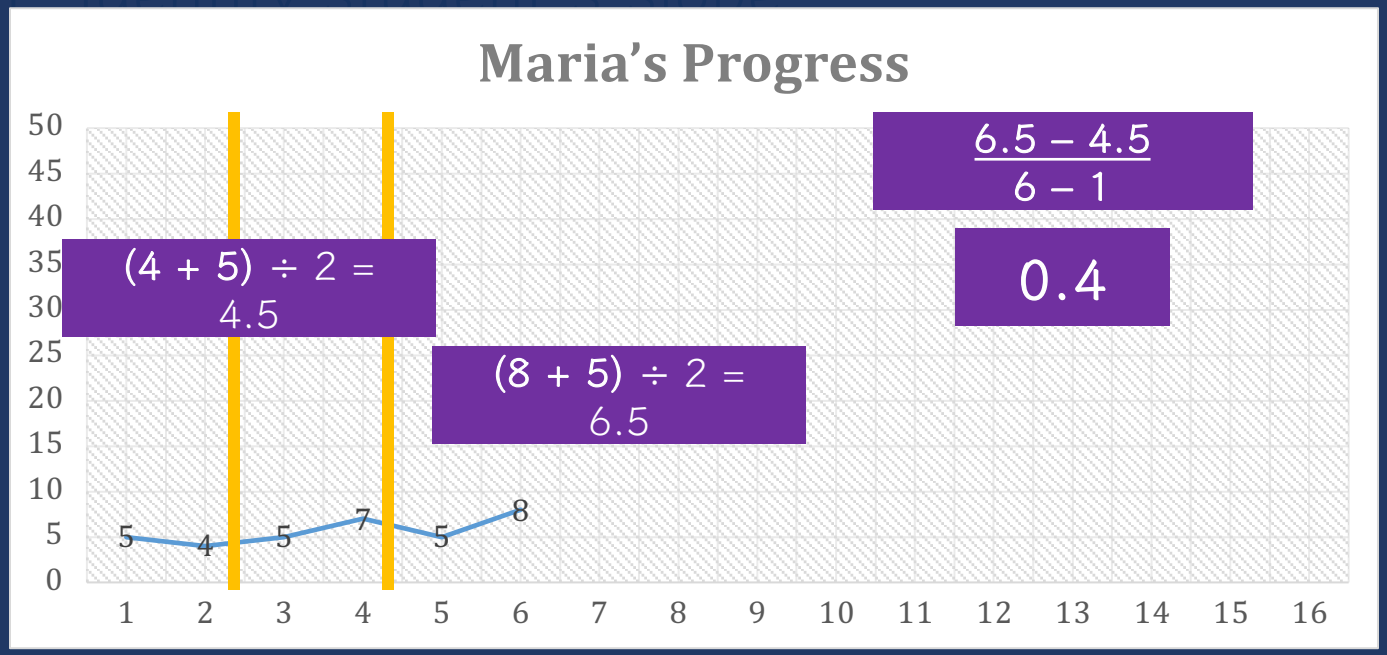
$$\frac{3^{rd}\text{ median} - 1^{st}\text{ median}}{\#\text{data points} - 1}$$

Intra-individual

**SLOPE CALCULATION:**

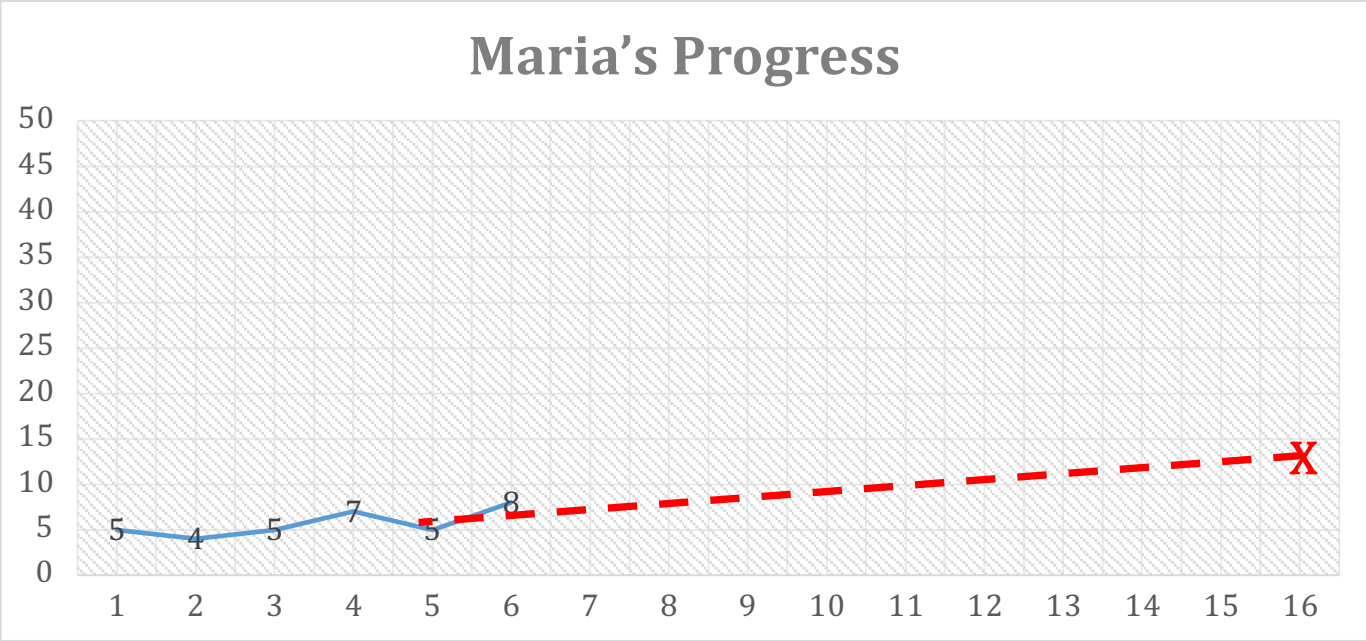
$$\frac{3^{rd}\text{ median} - 1^{st}\text{ median}}{\#\text{data points} - 1}$$

1. Identify student's slope

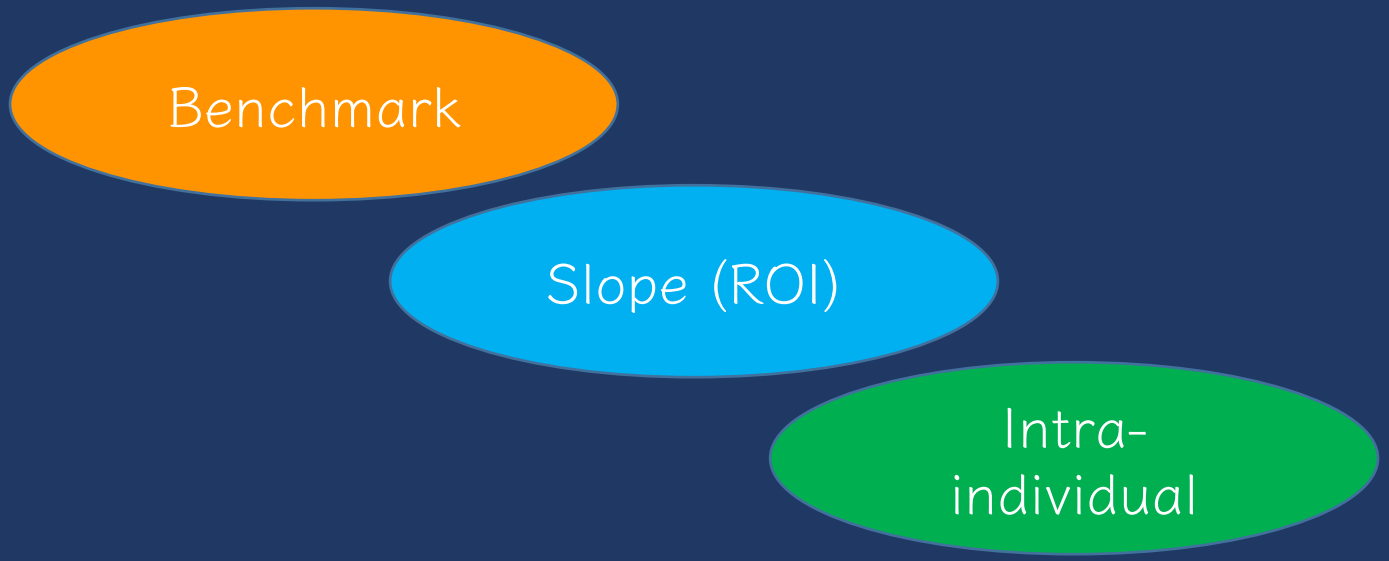


# Intra-individual

1. Identify student's slope — 0.4
2. Multiply slope by 1.5 — 0.4 × 1.5 = 0.6
3. Multiply by number of weeks until end of intervention — 0.6 × 10 = 6
4. Add to student's baseline score — 6 + 6.7 = 12.7
5. Mark goal on student graph with an X
6. Draw goal-line from baseline progress monitoring scores to X

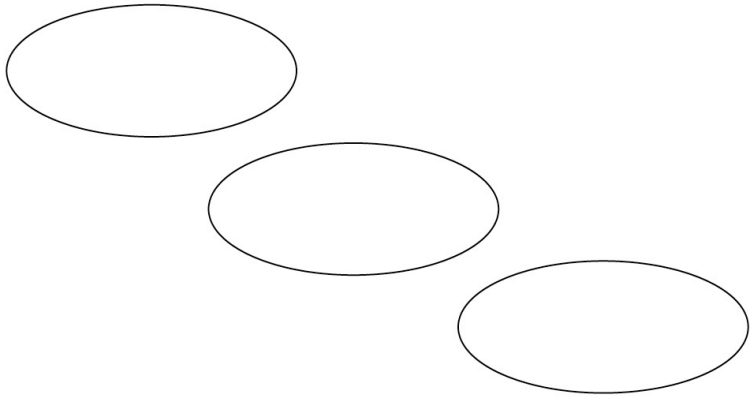


# To Review



Which goal setting method(s) might you use?

Setting Goals



Determining Response

Four most recent, consecutive scores

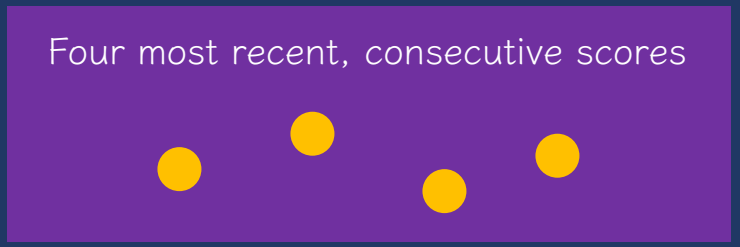
Trendline

# Determining Response

Four most recent, consecutive scores

Trendline

# Determining Response

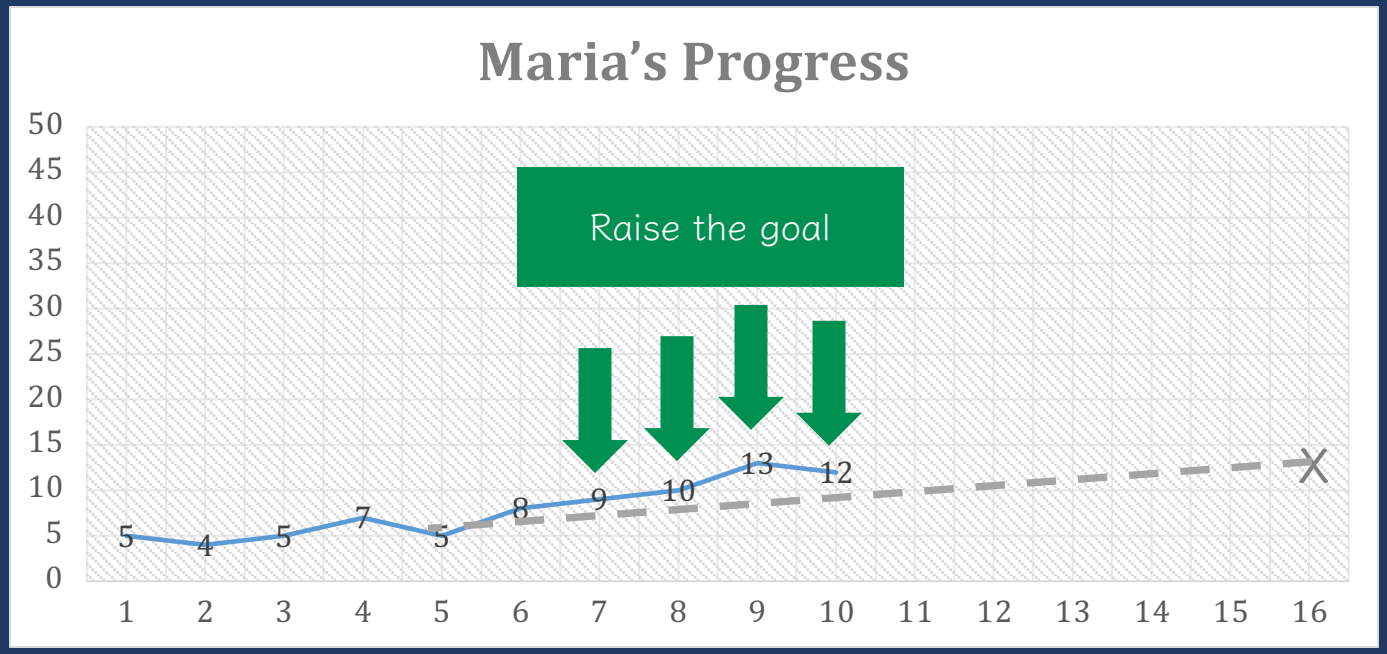



If at least 6 weeks of instruction have occurred:

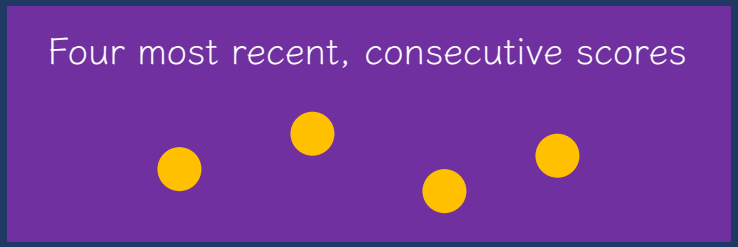
- If all four most recent scores fall above the goal-line, increase the goal.

# Determining Response

Four most recent, consecutive scores



# Determining Response

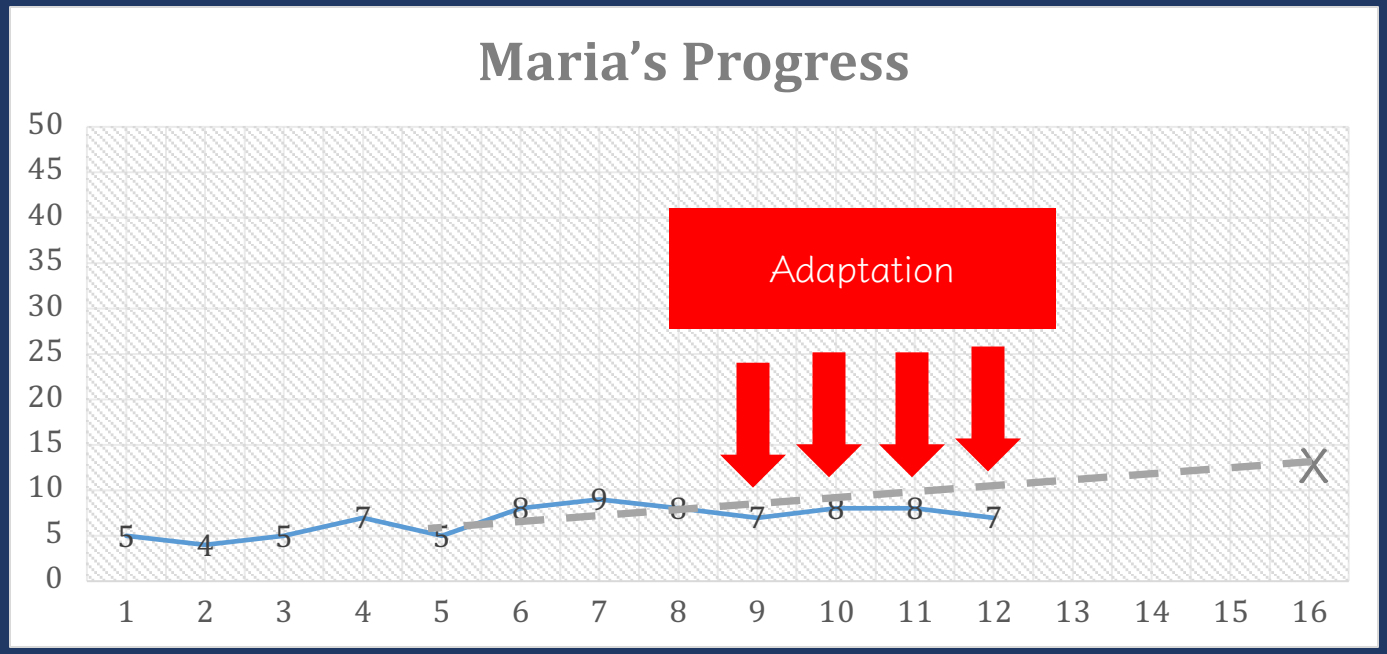



If at least 6 weeks of instruction have occurred:

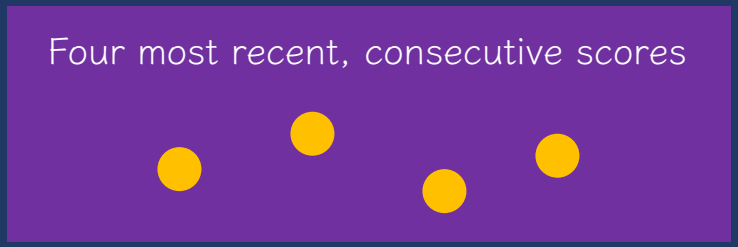
- If all four most recent scores fall above the goal-line, increase the goal.
- If all four most recent scores fall below the goal-line, adapt the intervention.

# Determining Response

Four most recent, consecutive scores



# Determining Response

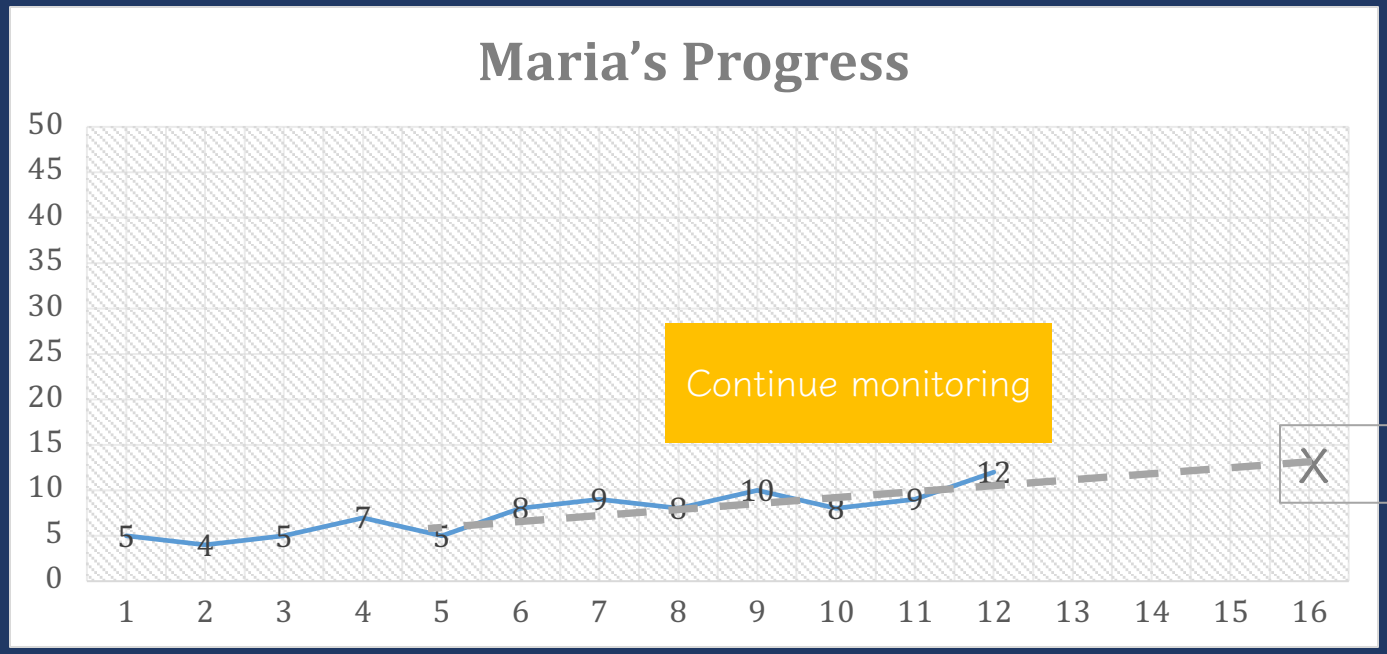



If at least 6 weeks of instruction have occurred:

- If all four most recent scores fall above the goal-line, increase the goal.
- If all four most recent scores fall below the goal-line, adapt the intervention.
- If the four most recent scores fall both above and below the goal-line, continue monitoring data.

# Determining Response

Four most recent, consecutive scores



# Determining Response

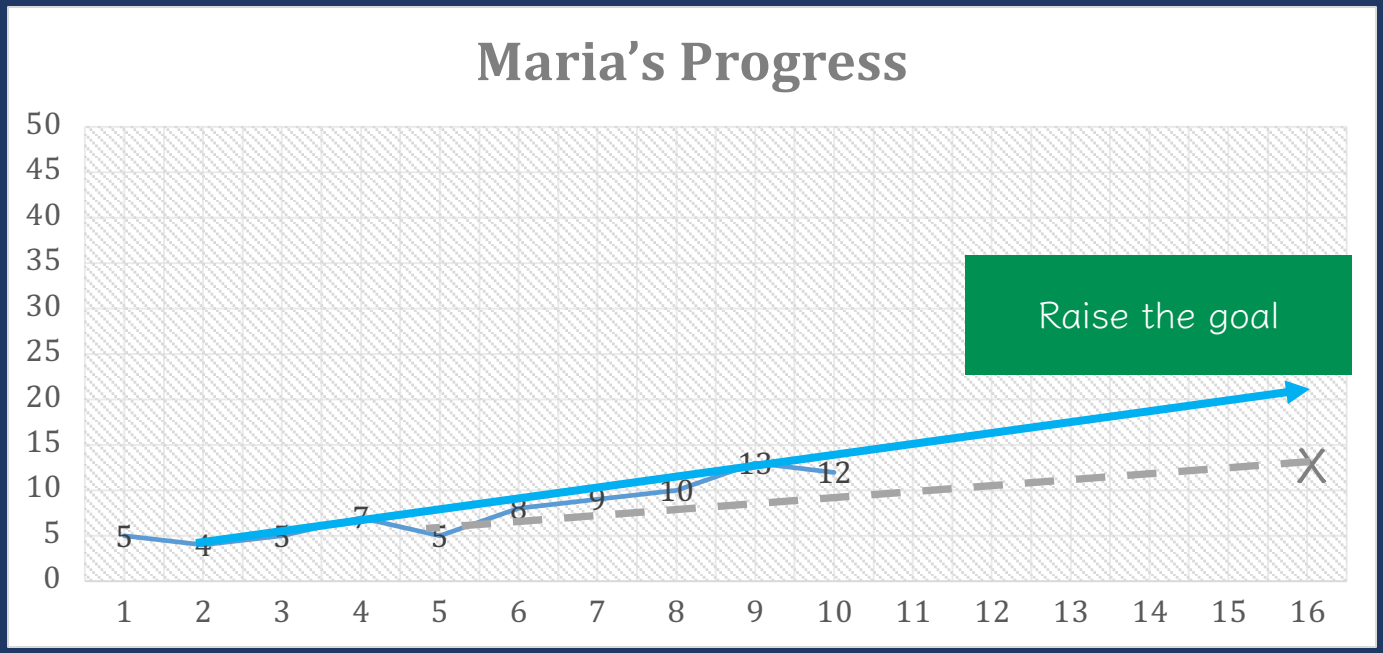
Four most recent, consecutive scores

Trendline

# Determining Response


- If the trend-line is steeper than the goal line, then increase the goal.

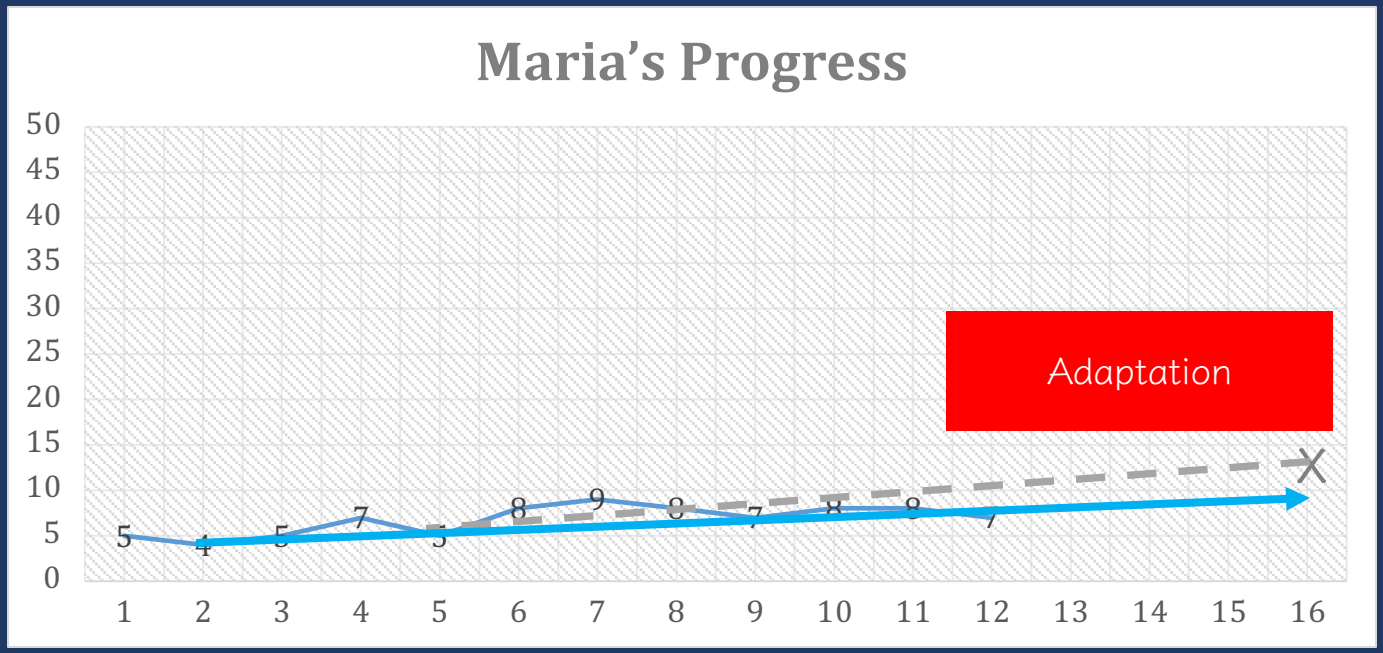
# Determining Response

# Determining Response


- If the trend-line is steeper than the goal line, then increase the goal.
- If the trend-line is flatter than the goal line, then adapt the intervention.

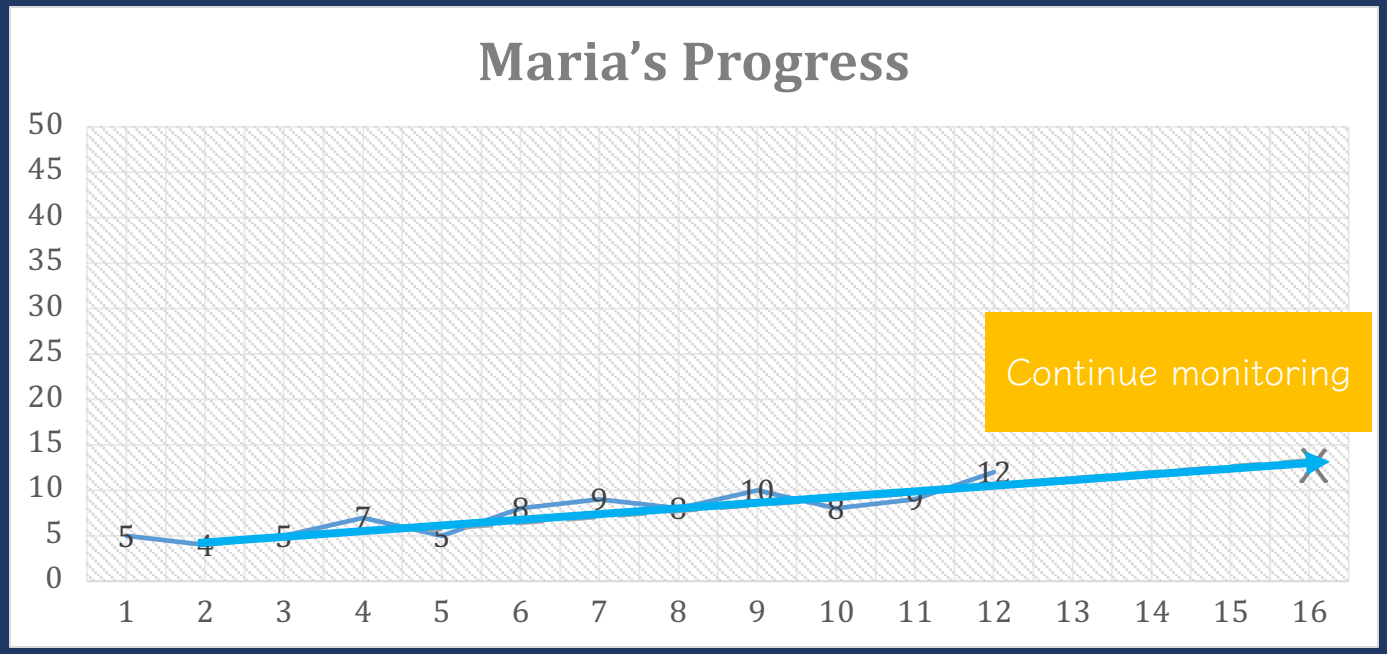
# Determining Response

# Determining Response


- If the trend-line is steeper than the goal line, then increase the goal.
- If the trend-line is flatter than the goal line, then adapt the intervention.
- If the trend-line and goal-line are fairly equal, continue monitoring progress.

# Determining Response

Which decision making method(s) might you use?

# Objectives

Participants will describe the data-based decision making framework.

Participants will learn core components of an effective instructional platform in math.

Participants will explain how to make decisions about student progress.

Participants will review common adaptations in math to the instructional platform.

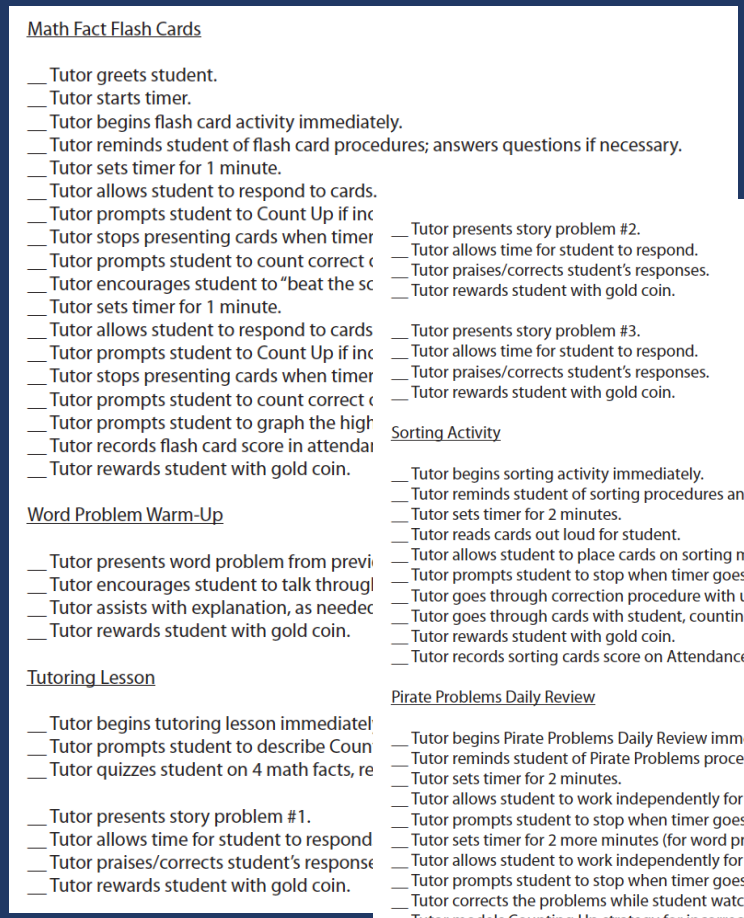
Instructional Adaptations

# Implement with greater fidelity

Ensure that you are implementing the intervention or strategy with fidelity

**Cover, Copy, and Compare:**

1. Create a sheet for the student. This sheet should contain 10 problems and cover material the student needs to practice. All problems should be answered.
2. Ask the student to look at each problem and read it aloud.
3. Ask the student to cover the problem with an index card.
4. Ask student to copy the entire problem to the right of the covered problem.
5. Ask student to lift up index card and compare his or her copy to the original.
6. Repeat for all problems.
7. Conduct three times per week.



Math Fact Flash Cards

__ Tutor greets student.
__ Tutor starts timer.
__ Tutor begins flash card activity immediately.
__ Tutor reminds student of flash card procedures; answers questions if necessary.
__ Tutor sets timer for 1 minute.
__ Tutor allows student to respond to cards.
__ Tutor prompts student to Count Up if inc
__ Tutor stops presenting cards when timer
__ Tutor prompts student to count correct
__ Tutor encourages student to "beat the sc
__ Tutor sets timer for 1 minute.
__ Tutor allows student to respond to cards
__ Tutor prompts student to Count Up if inc
__ Tutor stops presenting cards when timer
__ Tutor prompts student to count correct
__ Tutor prompts student to graph the high
__ Tutor records flash card score in attendar
__ Tutor rewards student with gold coin.

Word Problem Warm-Up

__ Tutor presents word problem from previ
__ Tutor encourages student to talk through
__ Tutor assists with explanation, as needed
__ Tutor rewards student with gold coin.

Tutoring Lesson

__ Tutor begins tutoring lesson immediatel
__ Tutor prompts student to describe Coun
__ Tutor quizzes student on 4 math facts, re

__ Tutor presents story problem #1.
__ Tutor allows time for student to respond
__ Tutor praises/corrects student's response
__ Tutor rewards student with gold coin.

__ Tutor presents story problem #2.
__ Tutor allows time for student to respond.
__ Tutor praises/corrects student's responses.
__ Tutor rewards student with gold coin.

__ Tutor presents story problem #3.
__ Tutor allows time for student to respond.
__ Tutor praises/corrects student's responses.
__ Tutor rewards student with gold coin.

Sorting Activity

__ Tutor begins sorting activity immediately.
__ Tutor reminds student of sorting procedures and answers questions as necessary.
__ Tutor sets timer for 2 minutes.
__ Tutor reads cards out loud for student.
__ Tutor allows student to place cards on sorting mat without interrupting.
__ Tutor prompts student to stop when timer goes off.
__ Tutor goes through correction procedure with up to 3 cards from "incorrect" pile.
__ Tutor goes through cards with student, counting the number of correct cards.
__ Tutor rewards student with gold coin.
__ Tutor records sorting cards score on Attendance Log.

Pirate Problems Daily Review

__ Tutor begins Pirate Problems Daily Review immediately.
__ Tutor reminds student of Pirate Problems procedures; answers questions as necessary.
__ Tutor sets timer for 2 minutes.
__ Tutor allows student to work independently for 2 minutes.
__ Tutor prompts student to stop when timer goes off.
__ Tutor sets timer for 2 more minutes (for word problem on back).
__ Tutor allows student to work independently for 2 more minutes.
__ Tutor prompts student to stop when timer goes off.
__ Tutor corrects the problems while student watches.
__ Tutor models Counting Up strategy for incorrectly answered items.
__ Tutor writes score on corner of sheet.
__ Tutor records Pirate Problems score in attendance log.
__ Tutor rewards student with gold coin.

__ Tutor prompts student to count coins and mark on map.
__ Tutor dismisses student to return to class.
__ Tutor stops timer.
__ Tutor records time of session in attendance log.
__ Tutor records date in attendance log.

Implement with greater fidelity

Embed behavioral supports

May want to incorporate strategies to improve self-regulation and minimize nonproductive behavior

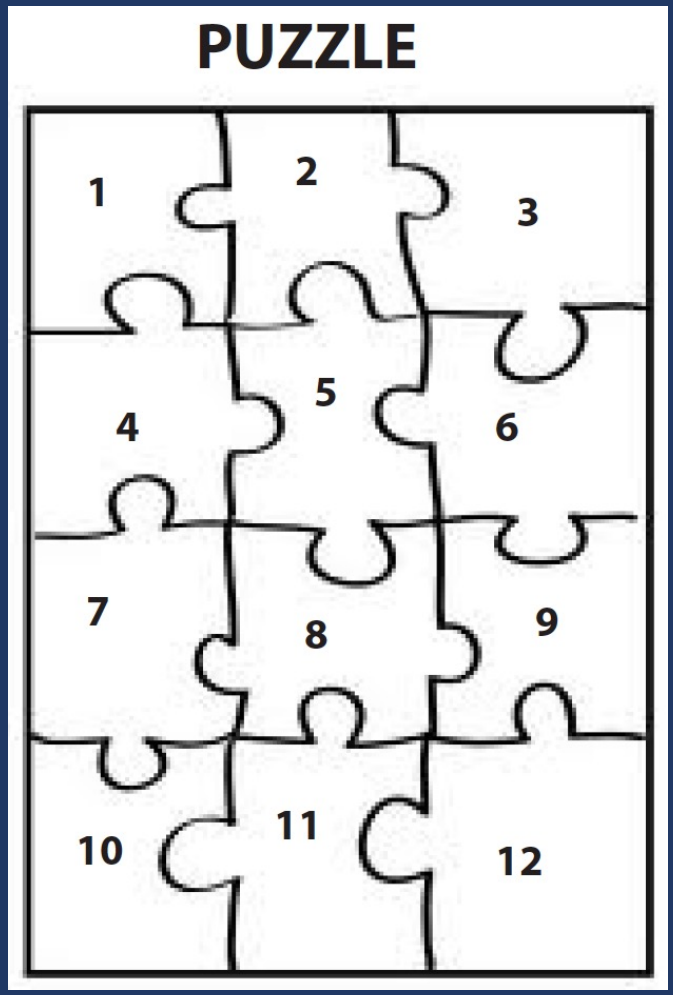
UPSCheck

Understand

Plan

Solve

Check



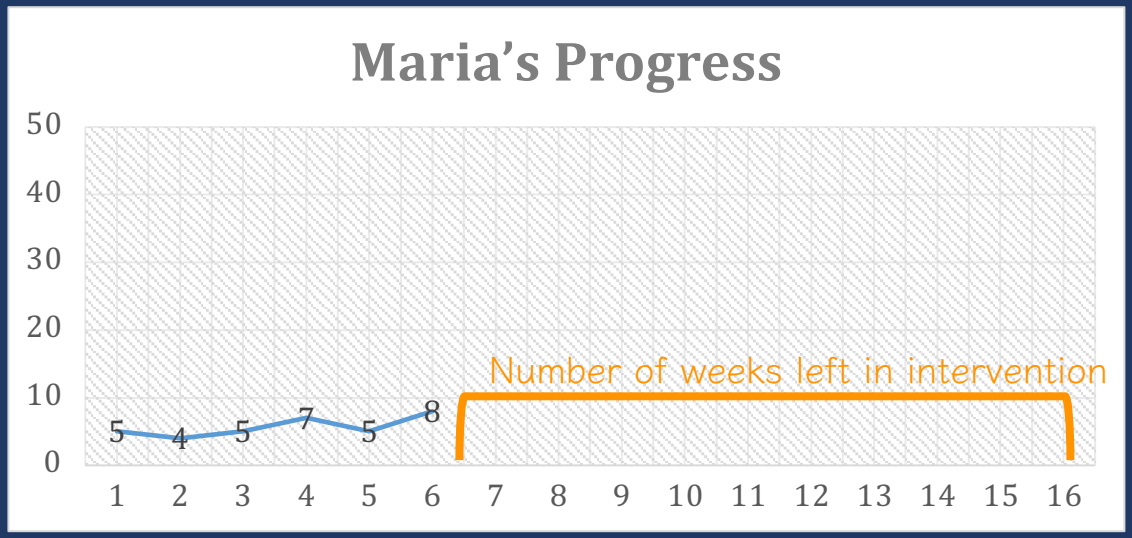

Powell, Driver, & Julian (2015)

Implement with greater fidelity

Embed behavioral supports

Increase dosage

Conduct longer sessions, more sessions per week, or more weeks within DBI

Implement with greater fidelity

Embed behavioral supports

Increase dosage

Adapt mathematics content

Implement with greater fidelity

Embed behavioral supports

Increase dosage

Adapt mathematics content

Utilize explicit instruction

Make sure you're doing it! And do it well!

## MODELING

Step-by-step explanation

Planned examples

## PRACTICE

Guided practice

Independent practice

## SUPPORTS

Ask high-level and low-level questions

Eliciting frequent responses

Providing affirmative and corrective feedback

Implement with greater fidelity

Embed behavioral supports

Increase dosage

Adapt mathematics content

Utilize explicit instruction

Explicitly teach transfer

Explicitly teach how current learning relates to other learning

$$\begin{array}{r} 405 \\ +\ 16 \\ \hline \end{array} \qquad \begin{array}{r} 4305 \\ +\ 216 \\ \hline \end{array}$$

Marney baked 89 cookies and sold 40 cookies at the bake sale. How many cookies does Marney have left?

Marney had $89 and spent $40 on shoes. How many much does Marney have left?

Marney had $89 and spent $40 on shoes. How much money will Marney have after buying the shoes?

Which adaptations would you consider a strength?

Which adaptation is an opportunity for growth?

# Objectives

Participants will describe the data-based decision making framework.

Participants will learn core components of an effective instructional platform in math.

Participants will explain how to make decisions about student progress.

Participants will review common adaptations in math to the instructional platform.

# Sarah R. Powell, Ph.D.

Associate Professor
The University of Texas at Austin

www.sarahpowellphd.com

srpowell@utexas.edu

@sarahpowellphd