## Intensive Interventions in Mathematics <br> 


at American Institutes for Research ■
*Select to complete Activity \#4, \#5, or \#6, depending upon level of students.

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The purpose of this Activity Workbook is to help organize content for this Module. You will do some Activities on your own to help you engage with and think about the content. You will not be required to submit your responses for those activities. There are other activities, however, that you will submit online and apply in your classroom. The activities that you must submit before completing this Module are listed in the "Online" column below.

| Section | Assignment | To Be Completed <br> In Activity Workbook | To Be Completed Online | To Be Completed With Coach |
| :---: | :---: | :---: | :---: | :---: |
| 은 든 | Video |  | Watch Module 2 Introduction Video Presentation |  |
| $\begin{aligned} & \text { C } \\ & \stackrel{\rightharpoonup}{\sigma} \\ & 0 \end{aligned}$ | Video |  | Watch Module 2 Part 1 Video Presentation |  |
|  | Activity 1 | General Outcome and SingleSkill Measures |  |  |
|  | Activity 2 | - Using a Diagnostic Assessment |  |  |
|  | Activity 3 | $\square$ Assessment Survey |  |  |
| $\begin{aligned} & \mathbf{N} \\ & \stackrel{ \pm}{0} \end{aligned}$ | Video |  | Watch Module 2 Part 2 Video Presentation |  |
|  | Activity 4* | - Score Measures and Graph Scores |  |  |
|  | Activity 5* | $\square$ Computation Measure |  |  |
|  | Activity 6* | Concepts and Applications Measure |  |  |
|  | Activity 7 | - NCII Tools Chart |  |  |
|  | Journal |  | - Journal Entry: Progress Monitoring Practices |  |
| $\begin{aligned} & m \\ & \stackrel{ \pm}{0} \\ & \end{aligned}$ | Video |  | Watch Module 2 Part 3 Video Presentation |  |
|  | Activity 8 | $\square$ Early Numeracy Measure |  |  |
|  | Activity 9 | $\square$ Decision Making Based on Data |  |  |
|  | Activity 10 | $\square$ Setting Goals and Making Decisions Based on Data |  |  |
|  | Discussion |  | $\square$ Discussion Board: Current Structure for Decisions <br> $\square$ Write Your Response $\square$ Respond to 2 Others |  |
|  | Video |  | Watch Module 2 Closing Video Presentation |  |
|  | Classroom Application |  |  | $\begin{aligned} & \text { Collect and Use Data for } \\ & \text { DBI } \end{aligned}$ |

[^0]- Module 2
- Part 1
- Activity \#1

Look at the examples of formative assessments.
Is each an example of a general outcome measure or single-skill measure?

1. $\qquad$

| $5+6=$ | $7+8=$ | $2+4=$ | $3+6=$ |
| :--- | :--- | :--- | :--- |
| $9+5=$ | $4+7=$ | $1+8=$ | $9+3=$ |
|  |  |  |  |

2. 

| $\begin{array}{r} 26 \\ \times \quad 14 \\ \hline \end{array}$ | $\begin{array}{r} 47.3 \\ +\quad 21.8 \\ \hline \end{array}$ | $\frac{2}{3}+\frac{4}{5}=$ | $\begin{array}{r} 403 \\ -\quad 27 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: |
| $\frac{1}{2}+\frac{1}{2}=$ | $\begin{array}{r} 83.5 \\ -\quad 23.6 \\ \hline \end{array}$ | $\begin{array}{r} 37.3 \\ +\quad 7.23 \\ \hline \end{array}$ | $\frac{3}{4} \times \frac{1}{3}=$ |

- Module 2
- Part 1
- Activity \#1 (cont.)

3. 


4.


| $3 9 \longdiv { 6 2 4 7 }$ | $2 4 \longdiv { 4 2 8 9 }$ | $4 3 \longdiv { 8 1 9 2 }$ | $52 \sqrt{4623}$ |
| :---: | :---: | :---: | :---: |
| $6 1 \longdiv { 1 7 2 9 }$ | $8 1 \longdiv { 9 2 6 1 }$ | $5 7 \longdiv { 4 3 8 9 }$ | $2 7 \longdiv { 1 2 3 9 }$ |
|  |  |  |  |

- Module 2
- Part 1
- Activity \#2

Look at the sample diagnostic assessment score report.

- What are the student's strengths?
- What are the student's weaknesses?

Diagnostic Score Report for 4th grader Tyler Johns (MOY):

| Subtest | Raw Score | Standard Score | Grade Equivalency |
| :--- | :---: | :---: | :---: |
| Whole Number Operations | 35 | 80 | 3.3 |
| Addition and Subtraction | 17 | 82 | 3.5 |
| Multiplication and Division | 13 | 78 | 2.9 |
| Comparisons | 5 | 85 | 3.5 |
| Algebraic Thinking | 12 | 69 | 1.9 |
| Rational Numbers | 37 | 73 | 2.5 |
| Addition and Subtraction | 13 | 73 | 2.5 |
| Multiplication and Division | 15 | 75 | 2.7 |
| Comparisons | 9 | 71 | 2.1 |
| Geometry | 18 | 84 | 3.8 |
| Data and Measurement | 18 | 85 | 3.6 |
| Problem Solving | 22 | 72 | 2.6 |
| Concepts | 12 | 73 | 2.5 |
| Applications | 10 | 71 | 2.2 |

Strengths:
$\qquad$
$\qquad$
$\qquad$
$\qquad$
Weaknesses: $\qquad$
$\qquad$
$\qquad$
$\qquad$

- Module 2
- Part 1
- Activity \#3

You will conduct a survey of the assessments available at your school.
Fill in the table about your current formative, diagnostic, and summative assessments. Then, fill in your assessment needs for DBI.

Assessments We Have

| Assessment Name | Formative | Diagnostic | Summative | Helpful for <br> DBI? |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Assessments We Need

| Assessment Name | Formative | Diagnostic | Summative | Helpful for <br> DBI? |
| :--- | :--- | :--- | :--- | :---: |
|  |  |  |  |  |
|  |  |  |  |  |
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Notes/Comments:
$\qquad$
$\qquad$
$\qquad$

- Module 2
- Part 2
- Activity \#4

Watch the videos and score each early numeracy measure.
Early Numeracy Indicators: Number Identification

Date: $\qquad$
Number Identification-1, Fall Number Correct $\qquad$
Direction: Write the number that the student says in the blank.



Use this video and score along with the teacher.
https://youtu.be/2YidrJ3zabQ
https://www.progressmonitoring.org/

- Module 2
- Part 2
- Activity \#4 (cont.)

Early Numeracy Indicators: Quantity Discrimination


Use this video and score along with the teacher.
https://youtu.be/tof8mNnzvZw

Quantity Discrimination-1, Fall
Date: $\qquad$ Number Correct $\qquad$
Direction: Write the number that the student says in the blank.

https://www.progressmonitoring.org/

- Module 2
- Part 2
- Activity \#4 (cont.)


## Early Numeracy Indicators: Missing Number



Use this video and score along with the teacher.
https://youtu.be/CxeZ35d6h18


Date: $\qquad$ Number Correct $\qquad$
Direction: Write the number that the student says in the blank.


- Module 2
- Part 2
- Activity \#5


## Look at this Computation measure.

1. Score the measure by problems correct.
2. Score the measure by digits correct.
3. Graph the digits correct score on the student's graph.

| $\begin{array}{r} 2 \\ 26 \\ \times 14 \\ \hline 44 \end{array}$ | $\begin{array}{r} 47.3 \\ +21.8 \\ \hline 68.11 \end{array}$ | $\frac{2}{3}+\frac{4}{5}=\frac{6}{8}$ | $\begin{array}{r} 403 \\ -27 \\ \hline 424 \end{array}$ |
| :---: | :---: | :---: | :---: |
| $\frac{1}{2}+\frac{1}{2}=1$ | $\begin{gathered} 83.51 \\ -\frac{23.6}{60.11} \end{gathered}$ | $\begin{aligned} & 37.3 \\ & +7.23 \\ & \hline 44.53 \end{aligned}$ | $\frac{3}{4} \times \frac{1}{3}=\frac{3}{12}$ |
| $\begin{array}{r} 574 \\ ++739 \\ \hline 1,311 \end{array}$ | $\frac{3}{4}+\frac{2}{3}=\frac{5}{7}$ | $\begin{array}{r} 81111 \\ 921.4 \\ -262.03 \\ \hline 1,311.43 \end{array}$ | $\begin{aligned} & 118 \mathrm{r}, 3 \\ & 5 \longdiv { 5 9 3 } \\ & \frac{-5}{43} \\ & \frac{-40}{3} \end{aligned}$ |
| $\begin{gathered} \times \frac{2}{1} \\ \frac{2}{3} \div \frac{1}{2} /=\frac{4}{3} \end{gathered}$ | $5 2 \longdiv { 4 6 2 3 }$ | $\begin{array}{r} 4 \\ 87 \\ \times 56 \\ \hline 442 \end{array}$ | $\frac{5}{7} \times \frac{3}{5}=$ |
| $1 2 \longdiv { 6 5 2 3 }$ | $\begin{array}{r} 262.7 \\ +38.5 \\ \hline \end{array}$ | $\begin{array}{r} 7062 \\ -947 \\ \hline 7925 \end{array}$ | $\frac{7}{9}-\frac{5}{6}=$ |

Total Number of Problems Correct:

Total Number of Digits Correct:

| $\begin{array}{r} 26 \\ \times 14 \\ \hline 364 \end{array}$ | $\begin{array}{r} 47.3 \\ +21.8 \\ \hline 69.1 \end{array}$ | $\frac{2}{3}+\frac{4}{5}=17 / 15$ | $\begin{array}{r} 403 \\ -\quad 27 \\ \hline 376 \end{array}$ |
| :---: | :---: | :---: | :---: |
| $\frac{1}{2}+\frac{1}{2}=1$ | $\begin{array}{r} 83.51 \\ -23.6 \\ \hline 59.91 \end{array}$ | $\begin{array}{r} 37.3 \\ +\quad 7.23 \\ \hline 44.46 \end{array}$ | $\frac{3}{4} \times \frac{1}{3}=3 / 12$ |
| $\begin{array}{r} 574 \\ +739 \\ \hline 1,313 \end{array}$ | $\frac{3}{4}+\frac{2}{3}=15 / 12$ | $\begin{array}{r} 921.4 \\ -262.03 \\ \hline 659.37 \end{array}$ | $\frac{118}{5} \text { R. }^{593}$ |
| $\frac{2}{3} \div \frac{1}{2}=11 / 3$ | $5 2 \longdiv { 4 6 2 3 }$ | $\begin{array}{r} 87 \\ \times 56 \\ \hline 4,872 \end{array}$ | $\frac{5}{7} \times \frac{3}{5}=3 / 7$ |
| $12 \overleftarrow{5533}_{\text {R. } 7}$ | $\begin{array}{r} 262.7 \\ +38.5 \\ \hline 301.2 \end{array}$ | $\begin{array}{r} 7062 \\ -947 \\ \hline 6,115 \end{array}$ | $\frac{7}{9}-\frac{5}{6}=111 / 18$ |

Ricky's Computation Scores


- Module 2
- Part 2
- Activity \#6

1. Score the measure by blanks correct.
2. Graph the blanks correct score on the student's graph.

| 1. Which shape below is a triangle? | 3. What number does $B$ stand for? |
| :---: | :---: |
| B | $\qquad$ |
| 2. Write the answer in each blank. <br> Of these numbers <br> $629 \quad 615 \quad 657 \quad 642$ <br> 642 is greater than $\underline{629}$ and 657 | 4. What fraction of the squares is shaded? |
| 3. Write + or - in the blank. $48+\text { Or } 6=54$ | 5. Fill in the blanks. <br> $174=$ ___hundreds 7 tens 4 ones |
| 4. Write the answer in the blank. <br> What number is 210 more than 150 ? $300$ | 6. Write "less" or "greater" in the blank. less or <br> 465 is $\qquad$ greater than 456 |


| 3. Write the time. | 14. Savannah has 3 pencils, Bella has 5 pencils. How many pencils do Savannah and Bella have in all? $\qquad$ <br> 9 |
| :---: | :---: |
| 4. Starting with the number 0 and counting left to right, <br> Write the second number $\qquad$ Write the eighth number $\qquad$ Write the fifth number $\qquad$ | 15. What number does C stand for? |
| 5. There are 12 jelly beans in a dish. Molly eats 3 of them. How many jelly beans are left? $15$ | 16. How much money is pictured below? |
| 6. Fill in the blanks. $234=\__{\text {__hundreds }} 34 \text { tens____ones }$ | 17. Counting by 3 's, fill in the blanks. $51,54,57,3,6$ |
| 7. How much money is pictured below? <br> \$ $\qquad$ | 18. Write the time. |



\begin{tabular}{|c|c|}
\hline \begin{tabular}{l}
1. Which shape below is a triangle? \\
B \\
C \\
C
\end{tabular} \& \begin{tabular}{l}
1. What number does \(B\) stand for? \\
7
\end{tabular} \\
\hline \begin{tabular}{l}
2. Write the answer in each blank. \\
Of these numbers \\
\(\begin{array}{llll}629 \& 615 \& 657 \& 642\end{array}\) \\
642 is greater than 629 and 615
\end{tabular} \& 2. What fraction of the squares is shaded?
\(\square\) \(\square\) 

$\square$
$\square$
$\square$
$\square$
$\square$

$$
\frac{9}{14}
$$ <br>

\hline 3. Write + or - in the blank.

$$
48 \ldots \quad 6=54
$$ \& 3. Fill in the blanks.

$$
174=1 \text { hundreds } 7 \text { tens } 4 \text { ones }
$$ <br>

\hline | 4. Write the answer in the blank. |
| :--- |
| What number is 210 more than 150 ? $360$ | \& | 4. Write "less" or "greater" in the blank. |
| :--- |
| 465 is greater than 456 | <br>

\hline
\end{tabular}

- Module 2
- Part 2
- Activity \#6 (cont.)

| 1. Write the time. $\qquad$ <br> 7 : 45 | 14. Savannah has 3 pencils, Bella has 5 pencils. How many pencils do Savannah and Bella have in all? $8$ |
| :---: | :---: |
| 2. Starting with the number 0 and counting left to right, <br> Write the second number $\qquad$ 2 <br> Write the eighth number $\qquad$ Write the fifth number 8 | 15. What number does $C$ stand for? <br> 14 |
| 3. There are 12 jelly beans in a dish. Molly eats 3 of them. How many jelly beans are left? $9$ | 16. How much money is pictured below? $\qquad$ |
| 4. Fill in the blanks. <br> $234=\underline{2}$ hundreds 3 tens 4 ones | 17. Counting by 3 's, fill in the blanks. $51,54,57,60,63$ |
| 5. How much money is pictured below? <br> \$ 0.67 | 18. Write the time. $\qquad$ <br> 7 : 15 |
| 19. What is the height of the bear? $\qquad$ 7 in. | 21. Use the graph to answer the question. <br> How many students like Math? 20 $\qquad$ |
| 20. Write the answer in each blank. <br> Of these numbers | 22. What fraction of the beans is shaded? |

Total Number of Blanks Correct:

- Module 2
- Part 2
- Activity \#6 (cont.)

- Module 2
- Part 2
- Activity \#7


## Visit the Academic Progress Monitoring Tools Chart.

Note: In the video/presentation, Dr. Powell refers to an older version of the tools chart than is currently available on the NCII website. We've updated this activity so that the content discussed in the video/presentation aligns with the language on new tools chart.

1. Fill in the table for the mathematics measures available for the grade levels you teach.
2. Consider the Psychometrics of the measures.
3. Consider the use for Progress Monitoring.
4. Consider the use for Data-based Individualization.

| Measure | Psychometrics |  | Progress Monitoring |  | Data-based Individualization |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Category referred to in the video/presentation | Reliable | Valid | Alternate Forms | Sensitive to Improvement | Change Instruction | Increase Goals | Teacher Planning |
| Where to locate the information on the new tools chart | "Performance Level Standards" Tab |  | "Growth Standards" Tab <br> *note that sensitivity is now included for both reliability and validity of the slope |  |  |  | "Usability" Tab |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
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## Notes/Comments:

- Module 2
- Part 2
- Journal Entry

Reflect upon your current progress monitoring practices.

1. What measures are available to you?
2. How do you administer measures with fidelity?
3. What measures would you like to use?
4. How can you improve upon your progress monitoring practices?
5. Why is progress monitoring an essential part of DBI?
(This space is for organizing your ideas.)
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

- Module 2
- Part 3
- Activity \#8
a. Create a graph with the provided Quantity Discrimination scores for Lincoln. Assume there are $\mathbf{2 0}$ weeks of intervention for Lincoln.

Lincoln's first 9 scores: $14,16,13,10,17,15,18,14,19$

a. Using Lincoln's graph, mark the benchmark with a " $B$ " using the provided information. Benchmark for Quantity Discrimination: 25

- Module 2
- Part 3
- Activity \#8 (cont.)
b. Using Lincoln's graph, mark the goal using slope (ROI) with an " S " using the provided information.
Rate of Improvement for Quantitity Discrimination: 0.50

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 " S "
5. Draw goal-line from baseline progress monitoring scores to $S$
c. Using Lincoln's graph, mark the goal for the intra-individual framework with an "I."
6. Identify student's (slope) using the formula: $\underline{3}^{\text {rd }}$ median $-1^{\text {st }}$ median \# data points - 1
7. Multiply slope by 1.5
8. Multiply by number of weeks until end of intervention
9. Add to student's baseline score
10. Mark goal on student graph with an "I"
11. Draw goal-line from baseline progress monitoring scores to I

- Module 2
- Part 3
- Activity \#9

Look at the graphs for these students. What decisions would you make about the progress of each student?


## Decision:

- Module 2
- Part 3
- Activity \#9 (cont.)



## Decision:



Decision:

- Module 2
- Part 3
- Activity \#10

Look at the graphs for these students.
What decisions would you make about the progress of each student?


1. Using the Benchmark, ROI, or Intra-individual framework, determine a goal for Tristan and draw your goal line.
2. Then add the following scores: Week $5=11$, Week $6=13$, Week $7=12$, and Week $8=15$.
3. Determine whether to increase the goal, continue to monitor progress, or to make an adaptation.

Decision: $\qquad$

- Module 2
- Part 3
- Activity \#10 (cont.)


1. Using the Benchmark, ROI, or Intra-individual framework, determine a goal for Monique and draw your goal line.
2. Then add the following scores: Week $5=16$, Week $6=17$, Week $7=19$, and Week $8=22$.
3. Determine whether to increase the goal, continue to monitor progress, or to make an adaptation.

Decision: $\qquad$

- Module 2
- Part 3
- Activity \#10 (cont.)


1. Using the Benchmark, ROI, or Intra-individual framework, determine a goal for Maria and draw your goal line.
2. Then add the following scores: Week $5=17$, Week $6=18$, Week $7=16$, and Week $8=18$.
3. Determine whether to increase the goal, continue to monitor progress, or to make an adaptation.

Decision: $\qquad$

- Module 2
- Part 3
- Discussion

Share your current structure for making DBI decisions.

- Who administers progress monitoring measures?
- Who makes the decisions about response?
- When and how are decisions made?

Write an original post on the Discussion Board and respond to two peers.
(This space is for organizing your ideas.)
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
(1) Start (or continue) implementing progress monitoring measures on a weekly basis.

## Goals:

$\qquad$

Evidence of progress:
$\qquad$
(2) Start (or continue) graphing data.

Goals:
$\qquad$

Evidence of progress:
(3) Start (or continue) making decisions about progress.

Goals:

Evidence of progress:


[^0]:    *Do one of these activities.

