

2025 MSLC Summer Institute
Fundamentals of Lesson Preparation: Part I
June 25, 2025

Session Objectives: Together we will...

- Practice unpacking an ET from their curriculum and then exemplar planning like teachers will be expected to
- Experience Part I of turnkey PD for Fundamentals of Lesson Preparation

Video Analysis

See it in Action #1: Devon Joyce

What's engaging and rigorous about Devon's teaching?

Devon's Lesson Preparation

Thursday Exit Ticket Analysis							
3-5 min Silent Solo Directions: Reco and London both solved the same problem in different ways. Who solved the problem incorrectly, and what was their mistake?							
London $\begin{array}{r} \textcircled{1} 32 \\ \times 16 \\ \hline \textcircled{1} 92 \text{ (6} \times 32 \text{)} \\ + 32 \text{ (10} \times 32 \text{)} \\ \hline 224 \end{array}$ error	Reco $30 + 2$ <table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 5px;">10</td> <td style="padding: 5px;">300</td> <td style="padding: 5px;">20</td> </tr> <tr> <td style="padding: 5px;">+ 6</td> <td style="padding: 5px;">180</td> <td style="padding: 5px;">12</td> </tr> </table> $\textcircled{1} 30 \overline{) 0}$ $\begin{array}{r} 180 \\ 20 \\ + 12 \\ \hline 512 \end{array}$	10	300	20	+ 6	180	12
10	300	20					
+ 6	180	12					
Cold Call 1. Who is incorrect and why? conceptual understanding <u>London</u> is incorrect because <u>she did not</u> X <u>10 x 32</u> correctly. she forgot to place a zero in the <u>one's place</u> vocab							
Turn/Talk 2. How can the student correct their work? listen for key vocab key phrase Hands Cold Call The student can correct their work by <u>placing a zero in the one's place</u> vocab <u>as a place holder</u> in the 2nd <u>partial</u> vocab <u>product</u> vocab							
Stamp <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: center; padding: 5px;">Stamp the Learning</th> </tr> <tr> <td style="padding: 5px;">To <u>multiply</u> the tens, I need a <u>zero</u> to begin (placeholder).</td> </tr> </table>		Stamp the Learning	To <u>multiply</u> the tens, I need a <u>zero</u> to begin (placeholder).				
Stamp the Learning							
To <u>multiply</u> the tens, I need a <u>zero</u> to begin (placeholder).							

What do you notice about how Devon prepared to teach? How did this prep support student engagement and learning?

Lesson Planning vs. Lesson Preparation

Lesson Plan: Details what content will be taught within a carefully constructed sequence of activities. The sequence is usually aligned to an instructional framework and designed to occur within a defined block of time.

Lesson Preparation: Consists of answering a series of questions about how you will teach the content outlined within a lesson plan that you've either developed or been provided.

Thursday Exit Ticket Analysis

Directions: Reco and London both solved the same problem in different ways. Who solved the problem incorrectly, and what was their mistake?

London	Reco
$\begin{array}{r} 32 \\ \times 16 \\ \hline 192 \\ + 320 \\ \hline 512 \end{array}$	$\begin{array}{r} 30 + 2 \\ 10 \times 300 \quad 20 \\ 6 \times 180 \quad 12 \\ \hline 1800 \\ + 120 \\ \hline 1920 \end{array}$

1. Who is incorrect and why?
_____ is incorrect because _____

2. How can the student correct their work?
The student can correct their work by _____

Stamp the Learning
To multiply the tens, I need a zero to begin (placeholder).

Thursday Exit Ticket Analysis

5-Minute Exit Ticket
Directions: Reco and London both solved the same problem in different ways. Who solved the problem incorrectly, and what was their mistake?

London	Reco
$\begin{array}{r} 32 \\ \times 16 \\ \hline 192 \\ + 320 \\ \hline 512 \end{array}$	$\begin{array}{r} 30 + 2 \\ 10 \times 300 \quad 20 \\ 6 \times 180 \quad 12 \\ \hline 1800 \\ + 120 \\ \hline 1920 \end{array}$

Call Out 1. Who is incorrect and why?
London is incorrect because she did not place a zero in the ones place. *key phrase: place a zero in the ones place*

Turntable 2. How can the student correct their work? *key phrase: place a zero in the ones place*
The student can correct their work by *product* *vocab* *partial*

Stamp the Learning
To multiply the tens, I need a zero to begin (placeholder).

Understanding the Content & Curriculum We Teach

"Our knowledge of our **content** and **curriculum** affects how we interpret the content goals we are expected to reach with our students. It affects the way we hear and respond to our students and their questions. It affects our ability to explain clearly and to ask good questions. It affects our ability to approach a mathematical idea flexibly with our students and to make connections. It affects our ability to push each student at that special moment when he or she is ready or curious. And it affects our ability to make those moments happen more often for our students."

- Glenda Lappan, NCTM President

What resonates with you from this quote? Why?

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Preview the Protocol

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Key Steps to Lesson Preparation

- ☐ **Step 1: Complete & Unpack the Exit Ticket**
- ☐ Step 2: Create Your Exemplars
- ☐ Step 3: Map the LDM onto Lesson Materials
- ☐ Step 4: Identify Priority Tasks & Questions
- ☐ Step 5: Plan for Pacing & Engagement

Begin with the End (the Exit Tickets!)

Key Idea: The extent to which students are successful at learning the essential content of any lesson or unit often hinges on the extent to which we as teachers are clear about the destination we are driving towards by the end of the lesson.

Unpacking Exit Tickets

Key Idea: Script ideal student responses to your Exit Ticket questions, and then list what knowledge and skills students would need to produce them.

- **Knowledge:** The vocabulary, facts, theorems, formulas, and rules that students need to show mastery of a lesson objective or standard. It is the answer to the question: *What do students need to be able to say, think, or write as they complete tasks aligned to this objective?*
- **Skills:** The procedures, application of knowledge, and modeling of relationships that students need to show mastery of a standard. It's the answer to the question: *What do students need to be able to do as they complete tasks aligned to this objective?*

Knowledge vs. Skills Quick Practice

Objective: To practice differentiating between knowledge and skills for an unpacked task.

3.NBT.A.1 Round whole numbers to the nearest 10 or 100 using understanding of place value and use a number line to explain how the number was rounded.

Which number **rounds to 600** when rounded to the nearest **hundred**?

Ⓐ 547 → 500
 Ⓑ 589 → 600
 Ⓒ 654 → 700
 Ⓓ 680 → 700

Directions: Read each statement in the table. Then, using the definitions we've established for knowledge and skills, determine if each statement describes a piece of knowledge or a skill that students need to have mastered to successfully complete the task.

Statement	Knowledge	Skill
1. When we round a number, we estimate its value using a number that is easier to work with.		
2. Draw and label a number line with hundreds and midpoints.		
3. Determine the hundred that is closest to a given number.		
4. When we round a number to the nearest hundred, we are determining which hundred the number is closest to.		
5. ___50 is in the middle of two hundreds.		
6. Use the phrases "round up" and "round down" to describe the process of rounding.		

7. If a number is greater than __50, the number is closest to the greater hundred and we round up.		
8. If a number is less than __50, the number is closest to the lesser hundred and we round down.		

Examples: Unpacked Exit Tickets**Silent Solo:**

- **Step 1:** Choose TWO of the provided examples to study more deeply. (Pages X-X).
- **Step 2:** In the gray box provided, identify any “ahas” or takeaways this gives you about unpacking Exit Tickets with “Know”/“Show.”

Example A: 5th Grade

Aim: I can multiply multiple factors to find a product. I can find missing factors in a multiplication sentence.

1. Solve. $5 \times 3 \times 6$

2. Samson and Jade solved the following problem:

$$6 \times 7 \times 5$$

Samson	Jade
$6 \times 7 = 42$	$6 \times 5 = 30$
$42 \times 5 = 210$	$30 \times 7 = 210$

Although both Samson and Jade solved the problem correctly, who solved it more efficiently? Why?

_____ solved it more efficiently because _____

3. $4B = 32$

4. $4 \times 6 = m \times 3$

Know	Show
• Order in multiplication doesn't matter (Commutative) • When multiple factors, multiply two at a time ◦ Can be strategic to multiply numbers that'll make it easier (end in 0, known facts, etc.) • When looking for a missing factor we can use multiplication facts ◦ We can also divide because	• How to group factors to make multiplication more manageable • Multiplying numbers • Using multiplication facts (possibly written out)

Takeaways/Notes:**Unpacked Exit Tickets (Cont'd)****Example B:**

1. Which of the following is the solution to the system below?

$$\begin{cases} 3x - 2y = 5 \\ x - 2y = 3 \end{cases}$$

(A) (3,1)
(B) (-1,2)
(C) (1,-3)
(D) (1,-1)

$$x = 3 + 2y$$

$$3(3 + 2y) - 2y = 5$$

$$9 + 6y - 2y = 5$$

$$4y = -4$$

$$y = -1$$

$$x - 2(-1) = 3$$

$$x + 2 = 3$$

$$x = 1$$

$$(1, -1)$$

$$3(1) - 2(-1) = 5$$

$$5 = 5$$

$$(1) - 2(-1) = 3$$

$$3 = 3$$

Know	Show
- The solution to a system of equations represents the point where the graphs of two or more equations intersect. - A pair of equations in two variables can only be solved by writing a single equation in terms of a single variable. We can create this equation using the substitution property of equality. - A system of linear equations will have one, none, or infinitely many solutions and are expressed as coordinate pairs. - Identify the most efficient equation to write in terms of x/y, the one which has fewer inverse operations required to isolate a variable.	- Apply inverse operations to reveal the value of one variable in terms of the other. - Apply the substitution property of equality in order to substitute an equivalent quantity for the second variable, which makes the equation solvable. - Simplify the linear equation by combining like terms and using distribution before isolating the variable using inverse operations. - Evaluate for the second unknown variable in order to identify the complete ordered pair where the lines intersect. - Check that the solution satisfies both equations of the system. An accurate solution must simplify to a true mathematical statement.

Takeaways/Notes:

Unpacked Exit Tickets (Cont'd)

Example C:

Grade 7- Lesson 53

1. Lila's car can go 25 miles on a gallon of gas.
 - a. Write the two forms of the rate given by this statement.

 - b. How many gallons would it take to travel 150 miles?

2. Chris is solving the following problem...
If the bananas cost \$0.56 per pound, how many pounds can Abigail buy for \$2.00?
 Chris started solving by using the rate $\frac{\$0.56}{1 \text{ pound}}$ was this the correct rate to use? Why or why not?

3. What is the cost of 2.6 pounds of cheese at \$1.75 per pound?

Know	Show
• Rate- a ratio with two different units • Fractions with the same numerator and denominator simplify or reduce down to 1. • How to write the fraction for the given rate • When multiplying fractions, we multiply across the numerator and	• Fractions with the same numerator and denominator simplify or reduce down to 1. ◦ Writing/Choosing correct rate multiplier • How to multiply fractions ◦ How to cross simplify if possible • Read, analyze and correctly set up rate problems

Takeaways/Notes:

Unpacked Exit Tickets (Cont'd)

Example D:

Grade 4- Lesson 20 Exit Ticket

Aim: I can round to the nearest ten or the nearest dollar.

1. What is \$34.52 rounded to the nearest dollar?

- a. \$34.00 b. \$34.50 c. \$35.00 d. \$35.52

2. Round 74 to the nearest ten.

3. Mason completed the following math problem:

Round \$12.26 cents to the nearest dollar and explain your thinking.

Mason's Response
\$12.26 rounded to the nearest dollar is \$13.00 because that's the next whole dollar.

Explain what is wrong about Mason's thinking:

Know	Show
- Place value positions - Looking at decimal numbers together (ex. .42 as 42 hundredths) - Rounded numbers end in zero - Rounding rules 0-4 round down	- Identifying the place value rounding to - Rounding whole numbers vs rounding decimals - Using a number line to show which the number is closer

Takeaways/Notes:

Unpacked Exit Tickets (Cont'd)

Example E: Eureka Math (Elementary)

A STORY OF UNITS
Lesson 6 Exit Ticket **3•3**

Name _____ Date _____

1. A parking lot has space for 48 cars. Six cars can park in 1 row. Break apart 48 to find how many rows there are in the parking lot.

K: we can decompose larger ÷ facts into smaller ones

S: make a # bond of 2 division facts to represent a starting fact.

$$48 \div 6 = (30 \div 6) + (18 \div 6)$$

$$= 5 + 3$$

$$= 8$$

There are 8 rows of cars in the parking lot

2. Malia solves 6×7 using $(5 \times 7) + 7$. Leonidas solves 6×7 using $(6 \times 5) + (6 \times 2)$. Who is correct? Draw a picture to help explain your answer.

Malia

Leonidas

K: We can use PP to identify products of larger facts

S: Represent 6's 7's using tape diagrams and known facts.

Takeaways/Notes:

Unpacked Exit Tickets (Cont'd)

Example F: HMH Math (8th Grade)

Silent Solo, u min, go!

Name: _____

Exit Ticket
u min

Pre-req.

- definition of pre-image/image
- properties of rigid transf.
- integer ops fluency
- writing/plotting ordered pairs

1. (HMH) The preimage of a rectangle has vertices with coordinates at $(-3, 2)$, $(-3, 5)$, $(2, 5)$, and $(2, 2)$. The image of the rectangle has vertices with coordinates at $(-2, 0)$, $(-2, 3)$, $(3, 3)$, and $(3, 0)$.

Describe the translation using mapping notation.

pre image	$(-3, 2)$	$(-3, 5)$	$(2, 5)$	$(2, 2)$
	+1 ↓	+1 ↓	+1 ↓	+1 ↓
	-2 ↓	-2 ↓	-2 ↓	-2 ↓
image	$(-2, 0)$	$(-2, 3)$	$(3, 3)$	$(3, 0)$

$(x, y) \rightarrow (x+1, y-2)$
 move right 1, down 2

2. (TCAP) Figure WXYZ is translated using the rule $(x, y) \rightarrow (x-4, y+2)$ to create figure W'X'Y'Z'. What are the coordinates of Z'?

A. $(2, -1)$
 B. $(-4, 2)$
 C. $(6, 1)$
 D. $(-4, 1)$
 (E) $(-2, 1)$

Knowledge

- A translation is a rigid transformation that moves every point in a figure the same distance in a given direction.
- Adding to an x-value translates a figure right; subtracting moves a figure left.
- Adding to a y-value translates a figure up; subtracting moves a figure down.

Skills

- Translate a point/figure from an image or ordered pair using directions or a mapping rule.
- Identify the translation that took place given two figures shown on a grid or in a set of points.
- Write translations as mapping rules.

8th Grade, Lesson 1-2

Takeaways/Notes:

Exit Ticket Unpacking Mini-Practice

Directions:

- **Step 1: Complete & Unpack Your Exit Ticket:** Show all work like you'd ideally see in a student response. Using the template below, unpack your Exit Ticket by creating a "know/show" chart:
 - **Know:** Essential information students must know and understand to successfully complete the task at hand. (e.g., domain-specific vocabulary, background knowledge, rules, theorems, equations, etc.).
 - **Show:** Procedures, application of knowledge, modeling of relationships. It is often what students must be able to visibly show in their written response to demonstrate mastery (e.g., task-specific annotations, labels, diagrams, solution steps, etc.)
- **Step 2: Share & Spar**
 - Find someone who shares your primary grade band (Elementary, Middle, or High) and share your know/show chart for feedback (1 "glow" and 1 "grow").
 - Consider any knows/shows that your partner(s) might want to *add that aren't* already included

Exit Ticket Questions & Exemplars

Exit Ticket Questions & Exemplars	
Know	Show

Reflection: Exit Ticket Unpacking

Why is Exit Ticket unpacking important for leading effective instruction? How will you sell the importance to your teachers?

Key Steps to Lesson Preparation

- ☒ Step 1: Complete & Unpack the Exit Ticket
- ☒ **Step 2: Create Your Exemplars**
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- ☐ Step 5: Plan for Pacing & Engagement

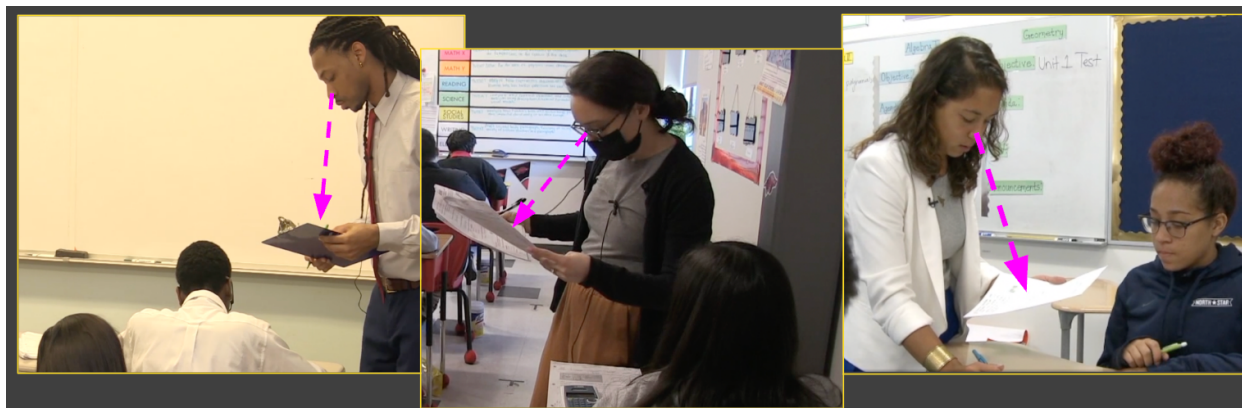
Studying Exemplars

Directions: Compare these two exemplars (Example A is from Carnegie Math curriculum, example B is from Rebecca!)

Version A		Version B
2. The unit rates for the 26 fluid ounce bottle of laundry detergent are \$0.375 per fluid ounce and approximately 2.67 fluid ounces per dollar. The unit rates for the 20.5 fluid ounce bottle of laundry detergent are approximately \$0.354 per fluid ounce and approximately 2.83 fluid ounces per dollar.	VS.	2. Calculate the actual unit rate for each of the two sizes of detergent in two different ways. Option 1 $\frac{\\$9.75}{26 \text{ fluid oz}} = \frac{\\$0.375}{1 \text{ oz}}$ $\frac{26 \text{ oz}}{\\$9.75} = \frac{2.67}{\\$1}$ Option 2 $\frac{\\$7.25}{20.5 \text{ fluid oz}} = \frac{\\$0.354}{1 \text{ fluid oz}}$ $\frac{20.5 \text{ oz}}{\\$7.25} = \frac{2.83}{\\$1}$ and Conversions

Reflect: How might version B support a teacher's ability to deliver more rigorous and responsive instruction?

The Power of Exemplar Planning



Key Takeaway: Planning Exemplars in advance enables us to:

- Efficiently “see” trends in the moment
- Make better decisions about how we’ll respond
- Uphold our high bar for quality and accuracy
- Provide more targeted and precise feedback to students
- Support our ability to anticipate errors and see tasks through our students’ eyes.

Key Idea

Annotations made to prompt

1. Each situation relates a quantity and a price. Calculate the two different unit rates associated with each situation: price per item and number of items per dollar. When necessary, round your answer to the nearest hundredth.

a. A bottle of 250 vitamins costs \$12.50.

250 vit	$\div 12.50$	20 vit
\$12.50	$\rightarrow$	\$1

\$12.50	$\div 250$	\$0.05
250 vit	$\rightarrow$	1 vit

Fully “worked out solution” in format expected of students

Key Takeaway: Fully “work out” the solution to the problem from top to bottom, and in the precise format that students will be expected to. This includes making any necessary annotations to the prompt/task, adding any necessary labels, etc.

Exemplar Planning Mini-Practice**Directions:**

- **Step 1: Complete & Unpack Your Exit Ticket:**
 - Choose two of the tasks from the lesson you brought with you
 - Script the exemplar, inclusive of all solution steps, annotations/mark-up, and vocabulary expected in an ideal student answer
- **Step 2: Share for Feedback:**
 - Pair up with a colleague and share the lesson objective and exemplars you planned.
 - Provide each other with quick feedback on your exemplars. (1 glow/1 grow or suggestion that could strengthen them).

Closing Reflection**Silent Solo (2.5 min):**

- What aspect(s) of this portion of our protocol (Exit Ticket unpacking, Exemplar Planning) do you think will come most easily for your teachers?

- What do you think they will find most challenging? What resources, learning experiences, or supports can you provide?