



# Lesson Internalization

# A Story of Units® TEKS Edition

Participant Handout

I. DISCERN THE PLOT	<ul> <li>Revisit Module Internalization Notes and reread the relevant Topic Overview.</li> <li>What is the role of the topic in the trajectory of the module's story? The role of the lesson?</li> <li>What prior learning do students continue to use in this topic and lesson? What's new or different?</li> <li>What is the purpose of the lesson? What concepts do we want students to learn or reinforce? What do we want them to be able to do?</li> <li>Read the TEKS and the ELPs.</li> <li>What skills and concepts from the aligned Focus standard(s) will be addressed in this lesson? What ELPs do you need to consider to support access for all students?</li> <li>What skills or concepts from relevant Foundational standard(s) will students need to access this lesson?</li> <li>Review aligned assessment items.</li> <li>How are the Focus standard(s) and the learning of the lesson assessed on the Exit Ticket?</li> <li>How are the Focus standard(s) and the learning from this topic and lesson addressed on the standard on the stopic and lesson addressed on the standard on the standard on the standard of the</li></ul>
	on the module assessment?
II. FIND THE LADDER	<ul> <li>Read the Objective and Student Debrief questions.</li> <li>What specific knowledge and skills should students have at the conclusion of this lesson? How does it continue and build on the previous lesson?</li> <li>What additional questions or reflections do you need to keep in mind?</li> </ul>
	<ul> <li>Review the lesson.</li> <li>How does each component of the lesson accomplish the purpose and transfer the intended knowledge and skills?</li> <li>How will you need to plan for special populations and addressing ELPs in this lesson?</li> <li>How did your review of the lesson address any questions you had? What additional things might you still need to consider?</li> </ul>
	<ul> <li>Do the math.</li> <li>As you do the problems in order, think about where and how new complexities arise. What's the new student thinking required in each change of complexity? Where will students need additional scaffolds or extensions?</li> <li>How do the problems in the Problem Set assess the student learning of the lesson?</li> </ul>
III. HONE THE LESSON	<ul> <li>Tell the story.</li> <li>As you read the Concept Development, highlight and annotate key questions and parts of the vignette that are crucial in building the lesson's knowledge and skills.</li> <li>For all components of the lesson and each part of the Concept Development, note what students should learn (or have reinforced).</li> <li>Add a transition statement after each component of the lesson to solidify the learning.</li> </ul>
	<ul> <li>Customize the Problem Set.</li> <li>Decide which problems are Must Dos (M), Could Dos (C), and Extension (E) problems; consider the needs of special populations.</li> <li>Add or revise any problems to give all students access to the lesson at grade level.</li> </ul>
	<ul> <li>Stamp the learning.</li> <li>Decide which Student Debrief questions you will ask to solidify the learning; add alternate or additional ones as you see fit.</li> <li>Create a brief synthesis of the learning in student-friendly language.</li> </ul>

#### LESSON INTERNALIZATION PROCESS

### **Objectives**

- Internalize and describe the purpose, key concepts, and trajectory of the lesson.
- Analyze the components of a lesson to determine the role each plays in student learning.
- Customize a lesson to meet the needs of all students.
  - Do the math.
  - Select, revise, and add problems as necessary.
  - Make instructional decisions that will make grade-level content accessible to all students, including special populations.
- Facilitate the Lesson Internalization process with a teacher or group of teachers.

I. DISCERN THE PLOT	<ol> <li>Revisit Module Internalization Notes and reread the relevant Topic Overview.</li> <li>What is the role of the topic in the trajectory of the module's story? The role of the lesson?</li> <li>What prior learning do students continue to use in this topic and lesson? What's new or different?</li> <li>What is the purpose of the lesson? What concepts do we want students to learn or reinforce? What do we want them to be able to do?</li> </ol>	Facilitator Notes

# What is the benefit for our students of us making this information explicit for ourselves before planning to teach this lesson?

I. DISCERN THE PLOT	<ul> <li>2. Read the TEKS.</li> <li>What skills and concepts from the aligned Focus standard(s) will be addressed in this lesson?</li> <li>What skills or concepts from relevant Foundational standard(s) will students need to access this lesson?</li> </ul>	Facilitator Notes

TEKS: FC	OCUS STANDARDS
Number use strat efficience	and Operations: The student applies mathematical process standards to develop and egies and methods for whole number computations in order to solve problems with y and accuracy. The student is expected to:
3.4E	Represent multiplication facts by using a variety of approaches such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, and skip-counting.

TEKS: FC	OUNDATIONAL STANDARDS
2.6A	Model, create, and describe contextual multiplication situations in which equivalent sets of concrete objects are joined.

I. DISCERN THE PLOT	<ul> <li>3. Review aligned assessment items.</li> <li>How are the Focus standard(s) and the learning of the lesson assessed on the Exit Ticket?</li> <li>How are the Focus standard(s) and the learning from this topic and lesson addressed on the module assessment?</li> </ul>	Facilitator Notes

A STORY OF UNITS - TEKS EDITION	Lesson 1 Exit Ticket	3•1
News	Dete	
Name	Date	
<ol> <li>The picture below shows 4 groups of 2 slices of watermelon. Fill in the blanks to make true repeated addition and multiplication sentences that represent the picture.</li> </ol>		



2. Draw a picture to show 3 + 3 + 3 = 9. Then, write a multiplication sentence to represent the picture.

1. Mrs. Tran plants 2 rows of 5 carrots in her garden. a. Draw an array that represents Mrs. Tran's carrots. Use an X to show each carrot. X X X X X XXXXX 00000 0 0 0 0 0 0 0 0 0 0 b. Mrs. Tran adds 3 more rows of 5 carrots to her garden. Use circles to show her new carrots on the array in Part (a). • Fill in the blanks below to show how she added the five rows.  $2_{\text{fives}} + 3_{\text{fives}} = 5_{\text{fives}}$  Write a sentence to explain your thinking. Mrs. Tran planted 2 rows of five first. Then she planted 3 more rows of five. Now she has 5 of five. rows c. Find the total number of carrots Mrs. Tran planted. RI R2 R3 R4 R5 5, 10, 15, 20, 25 Rι d. Write a multiplication sentence to describe the array representing the total number of carrots Mrs. Tran planted. 5x5:25 Mrs. Tran planted 25 carrots.

Why is reviewing assessment items to see how the learning is assessed an important part of the Discern the Plot?

# Pause and Reflect: Why is revisiting the Module Overview an essential part of the process of internalizing and preparing to teach a lesson?

II. FIND THE LADDER	<ul> <li>1. Read the Objective and Student Debrief questions.</li> <li>What specific knowledge and skills should students have at the conclusion of this lesson? How does it continue and build on the previous lesson?</li> <li>What additional questions or reflections do you need to keep in mind?</li> </ul>	Facilitator Notes
	<ul> <li>2. Review the lesson.</li> <li>How does each component of the lesson accomplish the purpose and transfer the intended knowledge and skills?</li> <li>How will you need to plan for special populations and addressing ELPs?</li> <li>How did your review of the lesson address any questions you had? What additional things might you still need to consider?</li> </ul>	

#### Fluency Practice (5 minutes)

Group Counting 3.4D, 3.4E (5 minutes)

#### Group Counting (5 minutes)

Note: Basic skip-counting skills from Grade 2 shift focus in this Grade 3 activity. Group counting lays a foundation for interpreting multiplication as repeated addition. When students count groups in this activity, they add and subtract groups of 2 when counting up and down.

T: Let's count to 20 forward and backward. Watch my fingers to know whether to count up or down. A closed hand means stop. (Show signals during the explanation.)

NOTES ON FLUENCY PRACTICE:

Think of fluency as having three goals:

- Maintenance (staying sharp on previously learned skills).
- Preparation (targeted practice for the current lesson).
- Anticipation (skills that ensure that students will be ready for the indepth work of upcoming lessons).
- T: (Rhythmically point up until a change is desired. Show a closed hand; then point down.)
- S: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0.
- T: Let's count to 20 forward and backward again. This time whisper every other number. Say the other numbers in a regular voice.
- S: (Whisper) 1, (speak) 2, (whisper) 3, (speak) 4, (whisper) 5, (speak) 6, etc.
- T: Let's count to 20 forward and backward again. This time, hum every other number instead of whispering. As you hum, think of the number.
- S: (Hum), 2, (hum), 4, (hum), 6, etc.
- T: Let's count to 20 forward and backward again. This time, think every other number instead of humming.
- S: (Think), 2, (think), 4, (think), 6, etc.

#### **Application Problem (10 minutes)**

There are 83 girls and 76 boys in the third grade. How many total students are in the third grade?



Note: Students may choose to use a strip diagram or a number bond to model the problem. They are also likely to solve today's Application Problem in less than 10 minutes. Ten minutes have been allotted to allow for review of the RDW (Read, Draw, Write) process for problem solving.

Directions on the Read, Draw, Write (RDW) process: Read the problem, draw and label, write an equation, and write a word sentence. The more students participate in reasoning through problems with a systematic approach, the more they internalize those behaviors and thought processes.

#### **Concept Development (35 minutes)**

Materials: (S) 12 counters, personal white board

#### Problem 1: Skip-count to find the total number of objects.

- T: (Select 10 students to come to the front.) At the signal, say how many arms you each have. (Signal.)
- S: 2 arms!
- T: Since we each represent a group of 2 arms, let's skip-count our volunteers by twos to find how many arms they have altogether. To keep track of our count, students will raise up their arms when we count them.
- S: (Count 2, 4, 6, ... 20.)

Sample Teacher Board

2+2+2+2+2+2+2+2+2+2=20 10 +wos 10 groups of two is 20.

# Problem 2: Understand the relationship between repeated addition, counting groups in unit form, and multiplication sentences.

Seat students at tables with personal white boards and 12 counters each.

- T: You have 12 counters. Use your counters to make **equal groups** of two. How many counters will you put in each group? Show with your fingers.
- S: (Hold up 2 fingers and make groups of two.)
- T: How many equal groups of two did you make? Tell at the signal. (Signal.)
- S: 6 groups.
- T: 6 equal groups of how many counters?

Sample Teacher Board

2 + 2 + 2 + 2 + 2 + 2 = 12 6 +wos = 12 6 x 2 = 12

#### Problem 3: Write multiplication sentences from equal groups.

Draw or project the picture to the right.

- T: These are equal groups. Turn and tell your partner why they are equal.
- S: There is the same number of grey circles in each group.
   → All of the grey circles are the same size and shape, and there are 4 in each group.
- T: Work with your partner to write a repeated addition and a multiplication sentence for this picture.
- S: (Write 4 + 4 = 8 and either 2 × 4 = 8 or 4 × 2 = 8.)



- S: (Write 4 + 4 + 3 = 11.)
- T: Use your addition sentence as you talk to your partner about why you agree or disagree with my work.

A STORY OF UNITS - TEKS EDITION	Lesson 1 Problem Set 3 • 1
Name	Date
MMM	1) 1) 1) 1) 1)
a. 3 groups of five =	b. 3 + 3 + 3 + 3 + 3 =
3 fives =	5 groups of three =
3 × 5 =	5 × 3 =
c. 6+6+	6+6= groups of six =
88 88 88	38 88 88
d. 4++	- <u> </u>
6 groups of	=
6 × =	
Lesson 1: Understand equal gro MATH TEKE EBITION 0 2020 Great Minds PBC TEKS Edition   greatminds.org/math	oups of as multiplication. 25



2. The picture below shows 2 groups of apples. Does the picture show 2 × 3? Explain why or why not.



3. Draw a picture to show 2 × 3 = 6.

4. Caroline, Brian, and Marta share a box of chocolates. They each get the same amount. Circle the chocolates below to show 3 groups of 4. Then, write a repeated addition sentence and a multiplication sentence to represent the picture.



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II. FIND THE LADDER	<ul> <li>3. Do the math.</li> <li>As you do the problems in order, think about where and how new complexities arise. What's the new student thinking required in each change of complexity?</li> <li>How do the problems in the Problem Set assess the student learning of the lesson?</li> </ul>	Facilitator Notes

Pause and Reflect: Why is Find the Ladder an essential part of the process	of
internalizing and preparing to teach a lesson?	

III. HONE	1. Tell the story.	Facilitator Notes
THE LESSON	<ul> <li>As you read the Concept Development, highlight and annotate key questions and parts of the vignette that are crucial in building the lesson's knowledge and skills.</li> <li>For all components of the lesson and each part of the Concept Development, note what students should learn (or have reinforced).</li> <li>Add a transition statement after each component of the lesson to solidify the learning.</li> </ul>	
	DO THE ABOVE ON THE PARTS OF THE	
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	HANDOUT.	
	<ul> <li>2. Customize the Problem Set.</li> <li>Decide which problems are Must Dos (M), Could Dos (C), and Extension (E) problems; consider the needs of special populations.</li> <li>Add or revise any problems to give all students access to the lesson.</li> </ul>	
	DO THE ABOVE ON THE PARTS OF THE LESSON FOUND EARLIER IN THE HANDOUT.	
	<ul> <li>3. Stamp the learning.</li> <li>Decide which Student Debrief questions you will ask to solidify the learning; add alternate or additional ones as you see fit.</li> <li>Create a brief synthesis of the learning in student-friendly language.</li> </ul> DO THE ABOVE ON THE PARTS OF THE LESSON FOUND EARLIER IN THE HANDOUT.	

#### Student Debrief (10 minutes)

**Lesson Objective**: Understand *equal groups of* as multiplication.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- On the first page, what did you notice about the answers to your problems?
- Discuss the relationship between repeated addition and the unit form 2 groups of three or 3 groups of two, depending on the drawing.
- Discuss the relationship between repeated addition, unit form, and the multiplication sentence 3 × 2 = 6.
- Review the new vocabulary presented in the lesson: equal groups, multiplication, and multiply.

Pause and Reflect: How do the first two parts of the process prepare you to Hone the Lesson to give all your students access to grade-level content?

Pause and Reflect: How will you take this information back to the schools and districts you work with? What are your next steps in this work?

Participant Handout

### **Additional Notes**

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## **Works Cited**

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