Content-based Instruction
Unit for ELLs:
Third Grade Multiplication

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FLA 518
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Introduction
Content-based Instruction Unit for ELLs:
Third Grade Multiplication

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Original Lessons
Unit Selection and Introduction

1. **Unit Title:** Multiplication

2. **Grade Level:** 3

3. **Target Group:** mainstream classroom with ELLs integrated

4. **Written Materials:**
   - Students will read and write to complete activity pages.

5. **Original Lessons:** The lessons for this unit are from my BEST portfolio.

6. **Learning Goals:**
   - I want my students to understand that in order to multiply, you must have equal groups.
   - I want my students to make a connection between repeated addition and multiplication.
   - I want my students to write and solve multiplication story problems.
   - I want my students to apply what they know about multiplication and equal groups to the real life situations.
Grade 3
Multiplication

Lesson 1:
Equal Groups
## Grade 3 Multiplication Objectives and Performance Indicators

### Lesson 1

<table>
<thead>
<tr>
<th>Content Objectives</th>
<th>Language Objectives</th>
</tr>
</thead>
</table>
| 1. Identify equal groups in magazines or pictures in order to connect equal groups to multiplication.  
2. Explain how equal groups relate to repeated addition and multiplication. | 1. Discuss and label things in the world that come in equal groups.  
2. Write in journals to respond to the question: What did you learn about multiplication today?  
(When you put together equal groups, you can multiply.) |

### Domain / Topic: Speaking and Listening
Discuss and identify objects in the world that come in equal groups.

<table>
<thead>
<tr>
<th>Bridging Level 5</th>
<th>Expanding Level 4</th>
<th>Developing Level 3</th>
<th>Emerging Level 2</th>
<th>Starting Level 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>In small groups discuss and label things in the world that come in equal groups for numbers 2, 3, 4, 5, 6, 7, 8, 9, and 10 using magazine pictures to generate ideas. Glue the pictures on index cards and write a sentence to label the index card. For example: Eyes come in twos. If students choose, they can draw the representation of equal groups instead. (7 and 9 will be challenging so I will give students answers for these numbers if they cannot discover them within the group).</td>
<td>In small groups discuss and label things in the world that come in equal groups for numbers 2, 3, 4, 5, 6, and 10 using magazine pictures to generate ideas. Glue the pictures on index cards. Write a sentence to label the index card. For example: Eyes come in twos. If students choose, they can draw the representation of equal groups instead.</td>
<td>In small groups, discuss and label things in the world that come in equal groups for numbers 2, 3, 4, 5, 6, and 10 using magazine pictures to generate ideas. Glue the pictures on index cards. Complete the sentence frame on each index card: ______ come in ______. A word bank (the &quot;equal groups&quot; poster for this lesson) will be provided to support students in completing the sentence frame to label the pictures of equal groups. The teacher will also be available to assist with naming any objects for which students don’t know the English word.</td>
<td>Work with a partner to orally identify equal groups and the number corresponding to the equal groups given several pictures already selected by the teacher for numbers 2, 3, 4, 5, 6, and 10. Each of the pictures will be labeled to identify the picture. Complete a worksheet by filling in a sentence frame. For example: ______ come in 2s. The labeled pictures will support students when completing the sentence frame.</td>
<td>Work with a partner to match and name labeled pictures of equal groups with the corresponding number card for numbers 2, 3, 4, 5, 6, and 10. Complete a worksheet by filling in a sentence frame. For example: Eyes come in twos. Five groups of two equal ten. 2+2+2+2+2 = 5x2</td>
</tr>
</tbody>
</table>

### Domain / Topic: Reading and Writing
Write in journals to respond to the question: What did you learn about multiplication today?

| Independently write at least three sentences in response to the question: What did you learn about multiplication today? in math journals. | Work with a partner to write at least three sentences in response to the question: What did you learn about multiplication today? in math journals. | Work with a partner to write at least one sentence in response to the question: What did you learn about multiplication today? in math journals. | Work with a partner to choose three sentences relating to multiplication given 5 sentences. Some of the sentences will be foils:  
-You need equal groups to multiply x.  
-You need equal groups to add +.  
-Eyes come in 2s. 5 groups of 2 equals 10.  
-Do you need equal groups to multiply.  
2+2+2+2+2 = 5x2 | Work with a partner to choose two sentences relating to multiplication given four sentences. One sentence will be a foil:  
-You need equal groups to multiply x.  
-You need equal groups to add +.  
-Eyes come in twos. Five groups of two equal ten. 2+2+2+2+2 = 5x2 |
<table>
<thead>
<tr>
<th>Function</th>
<th>Situation</th>
<th>Expressions</th>
<th>Word / Phrase</th>
<th>Grammar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify</td>
<td>Equal groups</td>
<td>1. ____ come in equal groups.</td>
<td>1. eyes, wheels on a tricycle, legs on a chair, fingers on one hand, insect legs, toes on both feet.</td>
<td>Plural nouns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. ____ come in _____.</td>
<td>2. eyes-tow wheels on a tricycle-threes legs on a chair-fours fingers on one hand-four fingers on one hand-fours insect legs-sixes toes on both feet-tens</td>
<td>Quantifiers (number words)</td>
</tr>
<tr>
<td></td>
<td>Connect</td>
<td>1. You need ____ to _____.</td>
<td>1. equal groups-multiply</td>
<td>&quot;come in&quot;</td>
</tr>
<tr>
<td></td>
<td>Equal groups with</td>
<td>2. ____ groups of ____ equals _____.</td>
<td>2. Insert number words (one, two, etc.) to complete the multiplication sentence.</td>
<td>Plural nouns</td>
</tr>
<tr>
<td></td>
<td>multiplication</td>
<td>3. ____ + ____ + ____ = 3x ____ etc.</td>
<td>3. Insert numbers (1, 2, 3,) to complete the number sentences.</td>
<td>Quantifiers (number words)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&amp;</td>
<td></td>
<td>Math sentences with symbols</td>
</tr>
<tr>
<td></td>
<td></td>
<td>____ x ____ = ____</td>
<td></td>
<td>(+, x and =)</td>
</tr>
</tbody>
</table>
Grade 3 Multiplication Lesson Plan
Lesson 1: Equal Groups

<table>
<thead>
<tr>
<th>Content Objectives</th>
<th>Language Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify equal groups in magazines or pictures in order to connect equal groups to multiplication.</td>
<td></td>
</tr>
<tr>
<td>2. Explain how equal groups relate to repeated addition and multiplication.</td>
<td></td>
</tr>
<tr>
<td>1. Discuss and label things in the world that come in equal groups.</td>
<td></td>
</tr>
<tr>
<td>2. Write in journals to respond to the question: What did you learn about multiplication today? (When you put together equal groups, you can multiply.)</td>
<td></td>
</tr>
</tbody>
</table>

Materials:
-“What Comes in 2’s, 3’s, and 4’s?” by Suzanne Aker
-magazines
-index cards
-scissors
-glue
-craysons or markers
-pencils
-math journals
-attached resources and worksheets

Activities with Modifications for English Language Learners:
1. Initiation 10 minutes:
-To begin this lesson explain, “We know a little bit about multiplication, but we are still becoming experts.” State the objectives so learners will know why they are participating in this lesson: “When you put together equal groups you can multiply. We will be looking for equal groups so that we can use them to write multiplication story problems.” Write the following sentence on the board: “You need equal groups to multiply.” Ask students if they can think of anything that comes in equal groups. Hang the attached “equal groups” poster (resource 1-1) to be discussed later in the lesson.
- Anticipation Guide: An anticipation guide (attached, resource 1-2) can be sent home the night before for students to think about and share with their families if desired (not required). Teacher will present students with the anticipation guide (I need your help! Can you find the missing numbers?) on the day of the lesson and refer to the guide as a “number game.” Teacher will arrange students in heterogeneous groups in order for students to try and figure out the missing numbers. When students complete the anticipation guide explain that they will get the chance to look at it again at the end of this math lesson to see if they would like to change their answers. During closure we will discover the correct answers together.
-Use the “equal groups” poster, main idea sentence: “You need equal groups to multiply,” and anticipation guide to model think alouds, frame main ideas, and as referents for repetition throughout the lesson. Use fingers and counting when referring to numbers.
2. 10 minutes: Read aloud “What Comes in 2’s, 3’s, & 4’s?” by Suzanne Aker (sample pages attached, resource 1-3). Before reading tell students to listen for things that come in equal groups because they will find equal groups later in this lesson. This book provides example of equal groups. For instance, “There are two handles on the sink— one hot and one cold.” List equal groups from the book on the board as you read. Note things already on the “equal groups” poster. In order to make text accessible for ELLs, point to pictures in the book and note realia such as fingers, eyes, legs on a chair, etc.
-Remember to pause, check for understanding, repeat important points, use gestures and modeling, and appropriate pace throughout the lesson.

3. 20 minutes: Teacher will assign the learning activity for students to explore equal groups in the following ways:
- **Level 5**: Work in groups of three. “Your job is to look in magazines and find things that come in equal groups of 2, 3, 4, 5, 6, 7, 8, 9, and 10. When you find a picture of equal groups, cut it out and glue it on an index card. Label the picture by writing a sentence: _____ come in _____. Try to find at least one example of equal groups for each number. If you have an idea in your head, you can draw the picture instead of cutting it out of a magazine.” Provide this group with a completed index card to use as a model (sample attached, resource 1-4). (7 and 9 will be challenging so I will give students answers for these numbers if they cannot discover them within the group).
- **Level 4**: This group will have the same grouping and assignment as Level 5, but will only be asked to find equal groups for 2, 3, 4, 5, 6, and 10.
- **Level 3**: This group will have the same grouping and job as Levels 4 and 5, with two modifications. Each index card will have the following sentence frame: _____ come in ____. (sentence frame attached, resource 1-5) They will also receive a copy of the “equal groups” poster (attached, resource 1-1) to use as a word bank when completing the sentence frame to label their pictures of equal groups. The teacher will be available to assist with naming any objects for which students don’t know the English word.
- **Level 2**: These students will work with a partner to orally identify equal groups and the number corresponding to the equal groups given several pictures already selected by the teacher for numbers 2, 3, 4, 5, 6 and 10. Each of the pictures will be labeled to identify the picture. (Labeled picture sheet is attached, resource 1-6.) Students will complete a worksheet (attached, resource 1-7) by completing a sentence frame for 2, 3, 4, 5, 6, and 10 with the name of something that comes in equal groups. For example: _____ come in 2s.
- **Level 1**: These students will work with a partner to match and name labeled pictures of equal groups (same pictures as Level 2, resource 1-6) with the corresponding number card for numbers 2, 3, 4, 5, 6, and 10 (number cards attached, resource 1-8). Students will complete a worksheet (attached, resource 1-9) by completing a sentence frame: _____ come in 2s. A word bank with icons is included on the worksheet.

4. The groups designate a member to orally share their findings with the rest of the class. The teacher can share a sentence from the worksheet of a student in the Levels 2 and 1 groups. Teacher explains that he will create a bulletin board chart with the index cards to show the equal groups students have worked together to find. During the next lesson, students will write multiplication story problems using the bulletin board.
5. Closure 10 minutes:
Teacher will review the anticipation guide to guide students in a discussion to discover:

I have five bicycles. The bicycles have no tires! Bicycles need two tires. How many bicycle tires will I buy all together?

____ + ____ + ____ + ____ + ____ = ____ just like

____ X ____ = ____

groups of

“When you put together equal groups, you can multiply.”

6. 10 minutes: Students respond to the lesson by answering the following questions in their math journals: “What did you learn about multiplication today?” Students with different levels of English proficiency will respond in the following ways:

- **Level 5**: These students will independently write at least three sentences in their math journals in response to the question: “What did you learn about multiplication today?”

- **Level 4**: These students will work with a partner to complete the same task as Level 5.

- **Level 3**: These students will work with a partner to write at least one sentence in their math journals in response to the question: “What did you learn about multiplication today?”

- **Level 2**: These students will work with a partner to choose three sentences relating to multiplication given six sentences (resource 1-10). Two of the sentences will be foils:
  - You need equal groups to multiply x.
  - You need equal groups to add +.
  - Eyes come in 2s. 5 groups of 2 equals = 10.
  - You do not need equal groups to multiply.
  - $2+2+2+2+2 = 5 \times 2$
  - Wheels on a car come in 4s. 3 groups of 4 equals = 12.

- **Level 1**: These students will work with a partner to choose two sentences relating to multiplication given four sentences (resource 1-10). One sentence will be a foil:
  - You need equal groups to multiply x.
  - You need equal groups to add +.
  - Eyes come in 2s. 5 groups of 2 equals = 10.
  - $2+2+2+2+2 = 5 \times 2$

**Assessment**: When the lesson is complete, the teacher collects students’ responses to assess if each student has answered the question, “What did you learn about
multiplication today?” to demonstrate the multiplication concept, “When you put together equal groups, you can multiply.”

7. All students share their math journal entry with a partner.

8. End the lesson by rereading the objectives with the class to determine that the objectives have been met.
Lesson 1 Narrative

This third grade multiplication lesson is modified for students with varying levels of English proficiency. Through sheltered strategies, adjusting discourse, and enhancing interaction, the content of this lesson will be accessible to all learners. The content objectives for this lesson are:

1. Identify equal groups in magazines or pictures in order to connect equal groups to multiplication.
2. Explain how equal groups relate to repeated addition and multiplication.

The language objectives for this lesson are:

1. Discuss and label things in the world that come in equal groups.
2. Write in journals to respond to the question: What did you learn about multiplication today?

With the modifications made to the original lesson, it is intended that all students will meet these objectives.

Sheltered strategies are incorporated throughout this multiplication lesson. One way the lesson is contextualized is through the use of visuals, realia, and gestures. An “equal groups” poster containing labeled pictures of common things in the world that come in equal groups will be used as a referent and word bank throughout the lesson. I chose things for this poster that can be found in the classroom or shown through realia such as “eyes come in twos,” “legs on a chair come in fours,” etc. The teacher models language and activities throughout the lesson. For example while reading “What Comes in 2’s, 3’s, and 4’s,” the teacher models identifying equal groups in the book and listing the equal groups on the board as the students will do using magazines and pictures during the learning activity. Adjusting discourse through repetition, pauses, pacing, framing main ideas, and checking understanding will support students throughout the lesson.

This lesson engages students at appropriate language proficiency levels. For example, Level 5 learners are expected to work in small groups to discuss and label things in the world that come in equal groups for numbers 2-10 using magazine pictures to generate ideas. Then they will glue the pictures on index cards and write a sentence to label the index card. The language required to complete this activity would be too overwhelming for students developing English. Therefore, sheltered strategies are included for ELL to successfully complete this activity. For Levels 4, 3, 2, and 1 students, the number of equal groups they are expected to find are fewer than Level 5. These students are expected to identify equal groups for 2, 3, 4, 5, 6, and 10. As the levels of English proficiency decrease, more supports are added to the activity through sentence frames, word banks, teacher support, and peer support. For example, Level 1 students will match and name labeled pictures of equal groups with corresponding number cards. They will complete a worksheet by filling in a sentence frame with ideas from a word bank. For example: Eyes come in 2. Strategies such as fewer examples, sentence frames, word banks, and adjusted levels of teacher support make this activity accessible to students of all levels of English proficiency.

An important addition to the original lesson is the anticipation guide. I think the anticipation guide helped me to plan adjusted discourse and enhanced interaction throughout this lesson. Interaction occurs immediately in the lesson with heterogeneous groups working to complete the anticipation guide. To adjust discourse, I created this
guide with simple syntax and included the main idea of the lesson: "When you put together equal groups, you can multiply." This is the main idea I will frame and repeat throughout the lesson. Learning activities based on the big ideas presented through the anticipation guide allow students to practice instructional conversations throughout the lesson. It is intended that the adjustments made to this lesson will allow all students to engage in interaction and complete the activities to lead students in an understanding of multiplication concepts.
# Equal Groups

<table>
<thead>
<tr>
<th>Eyes</th>
<th>come in</th>
<th>twos.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Wheels on a tricycle</td>
<td>come in</td>
<td>threes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Legs on a chair</td>
<td>come in</td>
<td>fours.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Fingers on one hand</td>
<td>come in</td>
<td>fives.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Insect legs</td>
<td>come in</td>
<td>sixes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Toes on both feet</td>
<td>come in</td>
<td>tens.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>
I need your help! Can you figure out the missing numbers?

I have five bicycles. The bicycles have no tires! Bicycles need two tires. How many bicycle tires will I buy all together?

\[ 2 + \_ + \_ + \_ + \_ = \_ \] just like

\[ 5 \times \_ = \_ \]

groups of

When you put together equal groups, you can multiply.
WHAT COMES IN 2s?

Just look at you!
You have
2 eyes,
2 ears,
2 arms,
2 hands,
2 legs,
and
2 feet.

Customers Who Bought This Item Also Bought:

- Each Orange Had 8 Slices (Counting Books) by Paul Galdone (1) $6.99
- Way up in the Tree by Roald Dahl (25) $4.99
- Greedy Goose (Scholastic Bookshelf) by Hannah Burns (11) $1.99
- Ten Black Dots by Donald Crews (1) $6.99

Price For All Three: $22.87

Item free. Here's how (restrictions apply)

Over a hundred thousand items are eligible for our 4-for-3 promotion. How do I find more visible items?

Share with friends

Page 1 of 17
And when you look in the mirror, there are 2 of you.
Kwanzaa candles come in sevens.
| ________________ | come in ________________ | ________________ | come in ________________ |
| ________________ | come in ________________ | ________________ | come in ________________ |
| ________________ | come in ________________ | ________________ | come in ________________ |
| ________________ | come in ________________ | ________________ | come in ________________ |
| ________________ | come in ________________ | ________________ | come in ________________ |
| ________________ | come in ________________ | ________________ | come in ________________ |
| ________________ | come in ________________ | ________________ | come in ________________ |

Resource 1-5, Use with Level 3
<table>
<thead>
<tr>
<th>eyes</th>
<th>shoes</th>
</tr>
</thead>
<tbody>
<tr>
<td>wheels on a tricycle</td>
<td>corners on a triangle</td>
</tr>
<tr>
<td>lights on a traffic light</td>
<td>legs on a chair</td>
</tr>
<tr>
<td>wheels on a car</td>
<td>fingers on one hand</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>points on a star</td>
<td>legs on a ladybug</td>
</tr>
<tr>
<td>legs on a fly</td>
<td>toes on both feet</td>
</tr>
</tbody>
</table>
Name ____________________________ Date ____________________

______________________________ come in 2s.

______________________________ come in 3s.

______________________________ come in 4s.

______________________________ come in 5s.

______________________________ come in 6s.

______________________________ come in 10s.
<table>
<thead>
<tr>
<th>Word Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheels on a tricycle</td>
</tr>
<tr>
<td>Toes on both feet</td>
</tr>
<tr>
<td>Eyes</td>
</tr>
<tr>
<td>Legs on a chair</td>
</tr>
<tr>
<td>Insect legs</td>
</tr>
<tr>
<td>Fingers on one hand</td>
</tr>
</tbody>
</table>

__________ come in 2s.

__________ come in 3s.

__________ come in 4s.

__________ come in 5s.

__________ come in 6s.

__________ come in 10s.
Check 3 sentences that tell about multiplication \( \times \). Be careful! Two 2 sentences are tricks!

____ You need equal groups to multiply \( \times \).

____ You need equal groups to add \(+\).

____ Eyes [image] come in 2s. 5 groups of 2 equals = 10.

____ You do not need equal groups to multiply \( \times \).

____ 2+2+2+2+2 = 5x2

____ Wheels on a car [image] come in 4s. 3 groups of 4 equals = 12.

(use with Level 2)

Check 2 sentences that tell about multiplication \( \times \). Be careful! One 1 sentence is a trick!

____ You need equal groups to multiply \( \times \).

____ You need equal groups to add \(+\).

____ Eyes [image] come in 2s. 5 groups of 2 equals = 10.

____ 2+2+2+2+2 = 5x2

(Use with Level 1)

Resource 1-10, Use with Levels 2 and 1
Lesson 2
Grade 3
Multiplication

Lesson 2:
Solving and Writing
Multiplication Story Problems
## Grade 3 Multiplication Objectives and Performance Indicators

### Lesson 2

<table>
<thead>
<tr>
<th>Content Objectives</th>
<th>Language Objectives</th>
</tr>
</thead>
</table>
| 1. Solve multiplication story problems by:  
   - Writing repeated addition number sentences, and  
   - Writing multiplication number sentences.  
2. Compose a multiplication story problem containing “equal groups.” | 1. Discuss and write solutions to multiplication story problems by:  
   - Writing repeated addition number sentences  
   - Writing multiplication number sentences  
2. Discuss and write multiplication story problems containing “equal groups.” |

<table>
<thead>
<tr>
<th>Domain / Topic</th>
<th>Bridging Level 5</th>
<th>Expanding Level 4</th>
<th>Developing Level 3</th>
<th>Emerging Level 2</th>
<th>Starting Level 1</th>
</tr>
</thead>
</table>
| **Reading and Writing:**  
Discuss and write solutions to multiplication story problems by:  
- Writing repeated addition number sentences  
- Writing multiplication number sentences | Work with a partner to solve four multiplication story problems. Show the solutions for each of these problems by writing repeated addition number sentences and multiplication number sentences in math journals. Manipulatives will be available to all learners. | Work with a partner to solve at least two multiplication story problems. Show the solutions for each of these problems by writing repeated addition number sentences and multiplication number sentences in math journals. Manipulatives will be available to all learners. | Work with a partner to solve two multiplication story problems. Show the solutions for each of these problems by writing repeated addition number sentences and multiplication number sentences in math journals. Supports include: added visuals, labels, and guided worksheets. Manipulatives will be available to all learners. | Work with a partner to solve two multiplication story problems. Show the solutions for the problems by writing repeated addition number sentences and multiplication number sentences on a worksheet. Supports include: added visuals, labels, guided worksheets, and frames for number sentences. (The frames will only be included for one example.) Manipulatives will be available to all learners. | The teacher works with Level 1 students to solve two multiplication story problems. Students will show the solutions for the problems by writing repeated addition number sentences and multiplication number sentences on a worksheet. Supports include: added visuals, labels, guided worksheets, additional modeling, and frames for number sentences. (The frames will only be included for one example.) Manipulatives will be available to all learners. |
| **Speaking, Reading, and Writing:**  
Discuss and write multiplication story problems containing “equal groups.” | Work with a partner to write and solve two multiplication story problems using “equal groups” from the bulletin board created in the previous lesson. Write the problems in math journals. | Work with a partner to write and solve two multiplication story problems using “equal groups” from the bulletin board created in the previous lesson. Write the story problem on a worksheet with a model multiplication story problem. | Work with a partner to write and solve one multiplication story problem using the “equal groups” bulletin board. Write the story problem on a worksheet with a model multiplication story problem, a multiplication story frame, and a word bank with visuals. | Work with a partner to write and solve one multiplication story problem using the “equal groups” bulletin board. Write the story problem on a worksheet with a model multiplication story problem, a multiplication story frame, and a word bank with visuals. | The teacher works with Level 1 students to write and solve one multiplication story problem using the “equal groups” bulletin board. Students will write the story problem on a worksheet with a model multiplication story problem, a multiplication story frame, and a word bank with visuals. |
## Grade 3 Multiplication Functional Language Chart

### Lesson 2

<table>
<thead>
<tr>
<th>Function</th>
<th>Situation</th>
<th>Expressions</th>
<th>Word / Phrase</th>
<th>Grammar</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interpret</strong></td>
<td>Multiplication story problems</td>
<td>1. _____ come in equal groups. 2. _____ come in ____. 3. You need _____ to ____. 4. ____ groups of _____ equals <strong><strong>. 5. ____ + ____ + ____ = 3x</strong></strong> etc. &amp; ____ x ____ = ____</td>
<td>1. eyes, wheels on a tricycle, legs on a chair, fingers on one hand, insect legs, toes on both feet. 2. eyes- twos wheels on a tricycle- threes legs on a chair- fours fingers on one hand- fours insect legs- sixes toes on both feet- tens 3. equal groups- multiply 4. Insert number words (one, two, etc.) to complete the multiplication sentence. 5. Insert numbers (1, 2, 3,) to complete the number sentences.</td>
<td>Plural nouns, Quantifiers (number words), “come in”, Math sentences with symbols (+, x and =)</td>
</tr>
<tr>
<td><strong>Compose</strong></td>
<td>Multiplication story problems</td>
<td>1. There are (were) ____ _____. 2. Each ____ has (had) ____ ______. 3. How many ____ ____?</td>
<td>1. number word (two, three, etc.)- plural noun 2. plural noun- number word- plural noun 3. plural noun- all together, in all, total?</td>
<td>Non-referential ‘there’ Present progressive / Past progressive Copula Plural nouns Quantifiers (number words) Questions beginning with ‘How many…’</td>
</tr>
</tbody>
</table>
# Grade 3 Multiplication Lesson Plan

## Lesson 2: Solving and Writing Multiplication Story Problems

<table>
<thead>
<tr>
<th>Content Objectives</th>
<th>Language Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Solve multiplication story problems by:</td>
<td>1. Discuss and write solutions to multiplication story problems by:</td>
</tr>
<tr>
<td>- Writing repeated addition number sentences</td>
<td>- Writing repeated addition number sentences</td>
</tr>
<tr>
<td>- Writing multiplication number sentences</td>
<td>- Writing multiplication number sentences</td>
</tr>
<tr>
<td>2. Compose a multiplication story problem containing “equal groups.”</td>
<td>2. Discuss and write multiplication story problems containing “equal groups.”</td>
</tr>
</tbody>
</table>

**Materials:**
- “Each Orange Had 8 Slices” by Paul Giganti, Jr.
- “equal groups” bulletin board (needs to be created with index cards from lesson #1 prior to this lesson)
- poster of the anticipation guide from lesson #1
- math journals
- manipulatives for counting (tiles, unifix cubes, and paper clips are options)
- attached resources and worksheets

**Activities with Modifications for English Language Learners:**

1. Initiation 5 minutes:
   - Begin by reading the lesson objectives. Remind students, “Yesterday we learned that when you put together equal groups, you can multiply.” Draw students’ attention to the “equal groups” bulletin board and ask them to share what they remember about equal groups and multiplication from the previous lesson. (Ideas that may be included on the “equal groups” bulletin board are attached, resource 2-1.) Tell students, “Today you will learn how to solve multiplication story problems, and you will also write your own story problems.”
   - Use the “equal groups” bulletin board, main idea sentence: “You need equal groups to multiply,” and anticipation guide poster (resource 2-2) to model think alouds, frame main ideas, check understanding, and as referents for repetition throughout the lesson. Use fingers and counting when referring to numbers.

2. 15 minutes: Read aloud “Each Orange Had 8 Slices” by Paul Giganti, Jr. (sample pages attached, resource 2-3). Before reading, tell students that this book is full of multiplication story problems. While reading, model solving multiplication story problems from the book three ways: using the illustrations from the book, and writing repeated addition and multiplication number sentences. ***WARNING: DO NOT use the page with the ducks to model. This page will be used for the students’ activity later in the lesson.*** After modeling this process on the first couple pages, have students solve problems along with you in their math journals. Finally, check for understanding by allowing students to try a few independently (you can assist ELLs) and review the correct
solutions with the students. In order to make text accessible for ELLs, point to pictures in the book and note realia if you have it available (toy cows, gum balls, eggs in a nest) etc. Remember to pause, repeat important points, use gestures and modeling, and appropriate pace throughout the lesson.

3. 15 minutes: Teacher assigns the learning activity for students to solve multiplication story problems. Provide all students with manipulatives for counting (tiles, unifix cubes, and paper clips are options).
   - **Level 5:** Work with a partner to solve four multiplication story problems based on the duck page from “Each Orange Had 8 Slices” (attached, resource 2-4). Show the solutions for each of these problems by writing repeated addition number sentences and multiplication number sentences in math journals.
   - **Level 4:** Work with a partner to solve two multiplication story problems based on the duck page from “Each Orange Had 8 Slices” (resource 2-4). Show the solutions for each of these problems by writing repeated addition number sentences and multiplication number sentences in math journals. There are four multiplication story problems on this worksheet in case time permits, however Level 4 students are only required to solve two.
   - **Level 3:** Work with a partner to solve two multiplication story problems based on the duck page from “Each Orange Had 8 Slices.” Show the solutions for each of these problems by writing repeated addition number sentences and multiplication number sentences on a worksheet (attached, resource 2-5). Supports include: added visuals, labels, and a guided worksheet.
   - **Level 2:** Work with a partner to solve two multiplication story problems based on the duck page from “Each Orange Had 8 Slices.” Show the solutions for the problems by writing repeated addition number sentences and multiplication number sentences on a worksheet (attached, resource 2-6). Supports include: added visuals, labels, a guided worksheet, and frames for number sentences. (The frames will only be included for one example.)
   - **Level 1:** The teacher works with Level 1 students to solve two multiplication story problems. Students will show the solutions for the problems by writing repeated addition number sentences and multiplication number sentences on a worksheet (resource 2-6). Supports include: added visuals, labels, a guided worksheet, additional modeling, and frames for number sentences. (The frames will only be included for one example.)

4. 20 minutes: Tell students, “Now that you know how to use multiplication to solve multiplication story problems like the ones from ‘Each Orange Had 8 Slices,’ you will try writing your own story problems using the equal groups you found during yesterday’s math lesson.” Ask students, “What do you notice about the multiplication story problems you just solved?” Post the “multiplication story problem frame” poster (attached, resource 2-7) and allow time for “think, pair, share.” After students have time to “think, pair, share,” the teacher will lead a whole class discussion based on students’ responses, using the “multiplication story problem frame” poster as a guide.
   - Model using ideas from the “equal groups” bulletin board and “multiplication story problem frame” poster to write and solve multiplication story problems on the board. Allow students to try composing a multiplication story problem with a partner in their
math journals. Finally, have students try writing one independently. The teacher should assist ELLs during this practice time.

5. 15 minutes: Teacher assigns the learning activity for students to write multiplication story problems. Students will also solve the problems they write.
Level 5: Work with a partner to write and solve two multiplication story problems in math journals using “equal groups” from the bulletin board created in the previous lesson.
Level 4: Work with a partner to write and solve two multiplication story problems using equal groups from the bulletin board created in the previous lesson. Level 5 students will write their story problems on a worksheet with a model multiplication story problem (attached, resource 2-8).
Level 3: Work with a partner to write and solve one multiplication story problem using the “equal groups” bulletin board. Write the story problem on a worksheet with a model multiplication story problem and a multiplication story frame (attached, resource 2-9). There is space for students to write and solve two story problems if time permits, but Level 3 students are only required to write and solve one multiplication story problem.
Level 2: Work with a partner to write and solve one multiplication story problem using the “equal groups” bulletin board. Level 2 students will write the story problem on a worksheet with a model multiplication story problem, a multiplication story frame, and a word bank with visuals (attached, resource 2-10).
Level 1: The teacher will work with Level 1 students to write and solve one multiplication story problem using the “equal groups” bulletin board. Students will write the story problem on a worksheet with a model multiplication story problem, a multiplication story frame, and a word bank with visuals (resource 2-10).
Assessment: When the lesson is complete, the teacher collects students’ math journals or worksheets to assess if each student has written and solved at least one multiplication story problem accurately.

6. Closure 5 minutes:
- Teacher reviews the objectives so students can realize what they have accomplished.
- Students switch their multiplication story problem with another student to read and solve a peer’s story problem.
Lesson 2 Narrative

This third grade multiplication lesson is modified for students with varying levels of English proficiency. Through sheltered strategies, adjusting discourse, and enhancing interaction, the content of this lesson will be accessible to all learners. The content objectives for this lesson are:

1. Solve multiplication story problems by:
   - Writing repeated addition number sentences, and
   - Writing multiplication number sentences.
2. Compose a multiplication story problem containing “equal groups.”

The language objectives for this lesson are:

1. Discuss and write solutions to multiplication story problems by:
   - Writing repeated addition number sentences, and
   - Writing multiplication number sentences.
2. Discuss and write multiplication story problems containing “equal groups.”

With the modifications made to the original lesson, it is intended that all students will meet these objectives.

Sheltered strategies are incorporated throughout this multiplication lesson. One way the lesson is contextualized is through the use of visuals, realia, and gestures. An “equal groups” bulletin board will be used as a referent and word bank throughout the lesson to write multiplication story problems. The students created this display of “equal groups” in the previous lesson, so the “equal groups” are meaningful to the students. The teacher models language and activities throughout the lesson. For example, while reading “Each Orange Had 8 Slices,” the teacher models solving story problems from the book using the illustrations to write repeated addition and multiplication number sentences on the board, as the students will do using a page from the book during the learning activity. Adjusting discourse through repetition, pauses, pacing, framing main ideas, and checking understanding will support students throughout the lesson.

This lesson engages students at appropriate language proficiency levels. For example, Levels 5 and 4 students are expected to write and solve two multiplication story problems in math journals. At Level 3, students write and solve one multiplication story problem on a worksheet with a model multiplication story problem and multiplication story frame to provide language scaffolding. Levels 2 and 1 students receive additional supports such as a word bank with visuals included on the worksheet. The teacher will also focus his/her attention on Levels 2 and 1 students during the completion of this learning activity. The language required to complete this activity would be too overwhelming for students developing English. Therefore, sheltered strategies are included for ELLs to successfully complete this activity.

Interaction is enhanced during this lesson. The lesson begins with building backgrounds knowledge. The teacher begins the lesson by reviewing the “equal groups” bulletin board and the anticipation guide from the previous lesson. These resources contain the main ideas that the teacher will frame throughout the lesson. Drawing students’ attention to these resources written with simple syntax and visuals, creates shared knowledge to support interaction. All students work with partners to solve and write multiplication story problems. Think, pair, share and whole class discussions are incorporated into this lesson. Students are developing “big ideas” about multiplication.
Learning activities based on these “big ideas” allow students to practice instructional conversations throughout the lesson. It is intended that the adjustments made to this lesson will allow all students to engage in interaction and complete the activities to lead students in an understanding of multiplication concepts.
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<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td><strong>A shirt has two sleeves.</strong></td>
<td><strong>A tricycle has three wheels</strong></td>
<td><strong>A dog has four feet.</strong></td>
<td><strong>A star has five points.</strong></td>
<td><strong>A ladybug has six legs.</strong></td>
<td><strong>There are seven Kwanzaa candles.</strong></td>
<td><strong>A spider has eight legs.</strong></td>
<td><strong>A menorah has nine candles.</strong></td>
<td><strong>There are ten fingers on both hands.</strong></td>
</tr>
<tr>
<td><strong>People have two eyes.</strong></td>
<td><strong>A triangle has three corners.</strong></td>
<td><strong>A table has four legs.</strong></td>
<td><strong>A foot has five toes.</strong></td>
<td><strong>A fly has six legs.</strong></td>
<td><strong>There are seven days in a week.</strong></td>
<td><strong>An octopus has eight arms.</strong></td>
<td><strong>There are nine planets in the solar system.</strong></td>
<td><strong>There are ten toes on both feet.</strong></td>
</tr>
<tr>
<td><strong>People have two legs.</strong></td>
<td><strong>There are three utensils we usually use to eat. (fork, knife, spoon.)</strong></td>
<td><strong>A chair has four legs.</strong></td>
<td><strong>A hand has five fingers.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>A scorpion has eight legs.</strong></td>
</tr>
<tr>
<td><strong>People have two hands.</strong></td>
<td><strong>Triplets come in threes.</strong></td>
<td><strong>A dog has four legs.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>A stop sign has eight sides.</strong></td>
</tr>
<tr>
<td><strong>Shoes come in twos.</strong></td>
<td><strong>Many clocks and watches have three hands.</strong></td>
<td><strong>A car has four wheels.</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Twins come in twos.</strong></td>
<td></td>
<td><strong>A skateboard has four wheels</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Glasses have two lenses.</strong></td>
<td></td>
<td><strong>Quadruplets come in fours.</strong></td>
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</tbody>
</table>

Resource 2-1
I need your help! Can you figure out the missing numbers?

I have five bicycles. The bicycles have no tires! Bicycles need two tires. How many bicycle tires will I buy all together?

\[ 2 + \_\_ + \_\_ + \_\_ + \_\_ = \_\_ \]

just like

\[ 5 \times \_\_ = \_\_ \]

groups of

When you put together equal groups, you can multiply.
On my way to the playground, I saw 3 red flowers.
Each red flower had 6 pretty petals.
Each petal had 2 tiny black bugs.

How many red flowers were there?
How many pretty petals were there?
How many tiny black bugs were there in all?
On my way to Grandma's
I saw 2 fat cows.
Each cow had 2 calves.
Each calf had 4 skinny legs.
How many fat cows were there?
How many calves were there?
How many legs were there in all?
Think about this illustration from "Each Orange Had 8 Slices":

Use this picture to help you solve the following multiplication story problems in your math journal. Write each answer 2 ways: 1. as a repeated addition number sentence and 2. as a multiplication number sentence.

1. There are 5 ducks. Each duck said, "QUACK, QUACK, QUACK." How many quacks are there all together?

2. There are 5 ducks. Each duck has 2 legs. How many duck legs are there in all?

3. There are 5 ducks. Each duck has 6 toes on its webbed feet. How many toes are there all together?

4. There are 3 waddling ducks. Each duck has 4 baby ducks trailing behind. How many baby ducks are there in all?

Resource 2-4, Use with Levels 4 and 5
Think about this illustration from "Each Orange Had 8 Slices":

Use this picture to help you solve the following multiplication story problems. Write each answer 2 ways:

1. as a repeated addition number sentence _____ + _____ + _____ + _____ = _____

2. as a multiplication number sentence _____ x _____ = _____

Resource 2-5, Use with Level 3
1. There are 5 ducks. Each duck said, "QUACK, QUACK, QUACK." How many quacks are there all together?

<table>
<thead>
<tr>
<th>Repeated addition + number sentence:</th>
<th>Multiplication × number sentence:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. There are 5 ducks. Each duck has 2 legs. How many duck legs are there in all?

<table>
<thead>
<tr>
<th>Repeated addition + number sentence:</th>
<th>Multiplication × number sentence:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Think about this illustration from "Each Orange Had 8 Slices":

Use this picture to help you solve the following multiplication story problems. Write each answer on the work sheet 2 ways:
1. as a repeated addition number sentence ______ + ______ + ______ + ______ = ______
2. as a multiplication number sentence ______ x ______ = ______

Resource 2-6, Use with Levels 2 and 1
1. There are 5 ducks. Each duck said, "QUACK, QUACK, QUACK." How many quacks are there all together?

<table>
<thead>
<tr>
<th>Repeated addition + number sentence:</th>
<th>Multiplication × number sentence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ + _____ + _____ + _____ + _____ = _____</td>
<td>_____ × _____ = _____</td>
</tr>
</tbody>
</table>

1. There are 5 ducks. Each duck has 2 legs. How many duck legs are there in all?

<table>
<thead>
<tr>
<th>Repeated addition + number sentence:</th>
<th>Multiplication × number sentence:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Multiplication Story Problem Frame

There were number word ___________. Each ___________ had
number word ___________. How many ___________ were there in
all (or all together)?
Read this multiplication story problem:
There were 5 bicycles. Each bicycle had two tires. How many tires were there all together?

Now use the "equal groups" bulletin board to write two multiplication story problems with your partner. Solve the problems when you are finished.

1. ________________________________
   ________________________________
   ________________________________
   ________________________________
   ________________________________
   ________________________________

2. ________________________________
   ________________________________
   ________________________________
   ________________________________
   ________________________________
   ________________________________
Read this multiplication story problem:

There were 5 bicycles. Each bicycle had 2 tires. How many tires were there all together?

Now use the story problem frame to work with a partner and write at least one multiplication story problem of your own. Use the equal groups bulletin board for ideas. Solve the problem(s) when you are finished.

1. There were __________ _________________. Each _________________ had __________
   number
   _________________ How many______________________________________________?

   Solution:____________________________________________________________

2. There were __________ _________________. Each _________________ had __________
   number
   _________________ How many______________________________________________?

   Solution:____________________________________________________________

Resource 2-9, Use with Level 3
Read this multiplication story problem:

There were 5 bicycles. Each bicycle had 2 tires. How many tires were there all together?

Now use the story problem frame to work with a partner and write a multiplication story problem of your own. Use the idea bank and equal groups bulletin board for ideas. Solve the problem when you are finished.

<table>
<thead>
<tr>
<th>Idea Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
</tr>
<tr>
<td>Fingers on one hand</td>
</tr>
<tr>
<td>Wheels on a tricycle</td>
</tr>
<tr>
<td>Insect legs</td>
</tr>
<tr>
<td>Legs on a chair</td>
</tr>
<tr>
<td>Toes on both feet</td>
</tr>
</tbody>
</table>

There were __________________________. Each __________________________ had ________________ number people, tricycles, chairs, hands, insects, feet. Each __________________________ had ________________ number person, tricycle, chair, hand, insect, foot. How many __________________________ were there________________? eyes, wheels, legs, fingers, toes eyes, wheels, legs, fingers, toes all together, in all

Solution: ________________________________

Resource 2-10, Use with Levels 2 and 1
Lesson 3
Grade 3
Multiplication

Lesson 3:
Applying
Multiplication to
Real Life...
X-Mart
<table>
<thead>
<tr>
<th>Content Objectives</th>
<th>Language Objectives</th>
</tr>
</thead>
</table>
| 1. Use multiplication to complete an order form to buy supplies for a school party. (Students will use multiplication because more than one of each item will be needed).  
2. Explain how multiplication applies to real life situations, such as shopping. | 1. Discuss and record an order for party supplies on an order form.  
2. Write in journals to respond to the question: How does multiplication help you in real life situations, such as shopping? |

<table>
<thead>
<tr>
<th>Domain / Topic</th>
<th>Bridging Level 5</th>
<th>Expanding Level 4</th>
<th>Developing Level 3</th>
<th>Emerging Level 2</th>
<th>Starting Level 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaking and Listening &amp; Writing: Discuss and record an order for party supplies on an order form.</td>
<td>Work in groups to use multiplication to complete an order form, following specific “shopping rules,” to create an order totaling close to $100. A completed sample order form (with items different than the items in this assignment) will be given to this group for a model.</td>
<td>Work in groups to use multiplication to complete an order form, following specific “shopping rules,” to create an order totaling close to $100. A completed sample order form (with items different than the items in this assignment) will be given to this group for a model.</td>
<td>Work with a partner to use multiplication to complete an order form to order party supplies. The first line of the form will be filled in for students to use as a model. The items will be listed on the order form with visuals. The first line of the form will be filled in for students to use as a model.</td>
<td>Work with a partner to use multiplication to complete an order form to order party supplies. The items will be listed on the order form with visuals. The first line of the form will be filled in for students to use as a model.</td>
<td>Work with a partner to use multiplication to complete an order form to order party supplies. The items will be listed on the order form with visuals. The first line of the form will be filled in for students to use as a model. The teacher will work with this group to model how to “shop” and complete the order form.</td>
</tr>
<tr>
<td>Reading and Writing: Write in journals to respond to the question: How does multiplication help you in real life situations, such as shopping?</td>
<td>Independently write at least three sentences (may include number sentences) in response to the question: How does multiplication help you in real life situations, such as shopping? in math journals.</td>
<td>Work with a partner to write at least three sentences (may include number sentences) in response to the question: How does multiplication help you in real life situations, such as shopping? in math journals.</td>
<td>Work with a partner to decide if multiplication can help in given shopping situations. Shown shopping carts on a worksheet, some filled with items costing the same price, and some filled with items costing different prices, students will check yes or no in response to the question: Can multiplication help you find the total?</td>
<td>Work with a partner to decide if multiplication can help in given shopping situations. Shown shopping carts on a worksheet, some filled with items costing the same price, and some filled with items costing different prices, students will check yes or no in response to the question: Can multiplication help you find the total?</td>
<td>Teacher will assist this group. Work with a partner to decide if multiplication can help in given shopping situations. Shown shopping carts on a worksheet, some filled with items costing the same price, and some filled with items costing different prices, students will check yes or no in response to the question: Can multiplication help you find the total?</td>
</tr>
<tr>
<td>Function</td>
<td>Situation</td>
<td>Expressions</td>
<td>Word / Phrase</td>
<td>Grammar</td>
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<tr>
<td>Apply</td>
<td>Multiplication to record an order on an order form</td>
<td>1. We need _____ _____ for the party.</td>
<td>1. number word (two, three, etc.) – party supply (balloons, cakes, candies, cookies, flowers, streamers, centerpieces, bags of confetti, banners, napkins, cups, plates)</td>
<td>Quantifiers (number words)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. _____ cost _____ dollars.</td>
<td>2. party supply (see list above)- number word</td>
<td>Plural nouns</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>3. _____ _____ will cost _____ dollars.</td>
<td>3. number word - party supply (see list above) - number word</td>
<td>Irregular verb: cost</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>4. The total is _____ dollars.</td>
<td>4. number word</td>
<td>Simple present/ Simple future tenses</td>
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<td></td>
<td>5. _____ x _____ = _____</td>
<td>4. Insert numbers to complete the number sentence.</td>
<td>Math sentences with symbols (x and =)</td>
<td></td>
</tr>
<tr>
<td>Relate</td>
<td>Multiplication to shopping</td>
<td>1. Multiplication will help you ______.</td>
<td>1. figure out a total when you are shopping</td>
<td>Simple future tense</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. When you _____, multiplication can help you ______.</td>
<td>2. buy more than one item that costs the same price- know how much you are spending.</td>
<td>Adverbial subordinator (When you _____, multiplication can help you _____.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Multiplication is _____ than repeated addition.</td>
<td>3. faster, shorter, easier</td>
<td>Comparisons</td>
<td></td>
</tr>
</tbody>
</table>
Grade 3 Multiplication Lesson Plan: X-Mart
Lesson 3

<table>
<thead>
<tr>
<th>Content Objectives</th>
<th>Language Objectives</th>
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</thead>
<tbody>
<tr>
<td>1. Use multiplication to complete an order form to buy supplies for a school dance. (Students will use multiplication because more than one of each item will be needed).</td>
<td>1. Discuss and record an order for party supplies on an order form.</td>
</tr>
<tr>
<td>2. Explain how multiplication applies to real life situations such as shopping</td>
<td>2. Write in journals to respond to the question: How does multiplication help you in real life situations, such as shopping?</td>
</tr>
</tbody>
</table>

Materials:
- “Just Add Fun!” by Joanne Rocklin
- Math journals
- Attached worksheets and resources

Activities with Modifications for English Language Learners:
1. Initiation 5 minutes:
   - To begin this lesson explain, “We have been learning about how to multiply and when to use multiplication to solve story problems.” Review objectives from lessons 1 and 2 and the posters related to those lessons (anticipation guide with the bicycles, “equal groups” bulletin board, “multiplication story problem” frame). Ask students, “Can you think of ways multiplication can help us in our lives?”
   - Read the objectives for this lesson, and explain that students will be using multiplication to help them shop for party supplies.

2. 15 minutes: Read aloud “Just Add Fun!” by Joanne Rocklin (sample pages attached, resource 3-1). Before reading, tell students that this book is about two brothers who use multiplication to help them plan a party. Explain that students will be “shopping” for party supplies for a school dance later in the lesson. In order to make text accessible for ELLs, point to pictures in the book and pause to write/draw ideas from the book relating to multiplication on the board.
   - Remember to pause, repeat important points, use gestures and modeling, and appropriate pace throughout the lesson.

3. Model the learning activity by choosing items from the X-Mart party supply page (attached, resource 3-2, modified versions described later in the lesson also included) and filling in the order form (attached, resource 3-3, modified versions described later in the lesson also included). Turn the party supply page and order form into posters or overheads to model the process using the think aloud process.

4. 15 minutes: Teacher will assign the learning activity for students to “shop” for party supplies and complete the order form using multiplication to calculate order totals. As students begin working, check with each group to make sure they understand the directions.
Level 5: Work in groups of three to use multiplication to complete an order form, following specific “shopping rules,” to create an order totaling close to $100.

Level 4: Work in groups to use multiplication to complete an order form, following specific “shopping rules,” to create an order totaling close to $100. A completed sample order form (with items different than the items in this assignment) will be given to this group for a model (attached, resource 3-4).

Level 3: Work in groups of three to use multiplication to complete an order form, following specific “shopping rules” to create an order totaling close to $100 dollars. A completed sample order form (with items different than the items in this assignment) will be given to this group for a model (resource 3-4). The first line of the form will be filled in for students to use as a model (attached, resource 3-5).

Level 2: Work with a partner to use multiplication to complete an order form to order party supplies. The first line of the form will be filled in for students to use as a model (resource 3-5). The items will be listed on the order form with visuals (attached, resource 3-6). The first line of the form will be filled in for students to use as a model.

Level 1: Work with a partner to use multiplication to complete an order form to order party supplies. The items will be listed on the order form with visuals (resource 3-6). The first line of the form will be filled in for students to use as a model (resource 3-5). The teacher will work with this group to model how to “shop” and complete the order form.

5. 15 minutes:
- After each member of each group or pair has completed an order form, use this experience to guide students in Instructional Conversations.
- Arrange students into heterogeneous groups to allow for Instructional Conversations to answer the question: “How does multiplication help you in real life situation, such as shopping?” Pose this question to students and allow them to discuss it for five minutes. After the discussion students will answer the question in the following ways:

  Level 5: Independently write at least three sentences (may include number sentences) in response to the question: How does multiplication help you in real life situations, such as shopping? in math journals.

  Level 4: Work with a partner to write at least three sentences (may include number sentences) in response to the question: How does multiplication help you in real life situations, such as shopping? in math journals.

  Level 3: Work with a partner to write at least one sentence in response to the question: How does multiplication help you in real life situations, such as shopping? in math journals.

  Level 2: Work with a partner to decide if multiplication can help in given shopping situations. Shown shopping carts on a worksheet, some filled with items costing the same price, and some filled with items costing different prices, students will check yes or no in response to the question: Can multiplication help you find the total? (attached, resource 3-7)

  Level 1: Teacher will assist this group. Work with a partner to decide if multiplication can help in given shopping situations. Shown shopping carts on a worksheet, some filled with items costing the same price, and some filled with items costing different prices,
students will check yes or no in response to the question: Can multiplication help you find the total? (resource 3-7)

**Assessment:** When the lesson is complete, the teacher collects students’ math journals or worksheets to assess if each student has answered the question: How does multiplication help you in real life situations, such as shopping? with responses related to multiplication that make sense.

6. Closure 5 minutes:
- Teacher reviews the objectives so students can realize what they have accomplished.
- Students switch their multiplication story problem with another student to read and solve a peer’s story problem.

- When time permits, lead heterogeneous groups in Instructional Conversations using the written responses as a springboard. These Instructional Conversations should last about 10-15 minutes and the teacher may need to fit them in over two days. Use these strategies to guide the Instructional Conversations:
  - Teacher Questions: ask open-ended questions, follow-up questions to expand on students ideas, and ask questions you don’t know the answers to
  - Sample Questions:
    How can multiplication help you when you are shopping?
    How can multiplication help you in other situations?
    What is multiplication?
    Can you think of any jobs that use multiplication?
  - Teacher Feedback: rephrase/paraphrase to clarify, use silence and plenty of wait time, back channeling, paraphrase with questions to confirm meaning
  - Sample Feedback:
    Tell me more about…
    In other words…
    What do you mean by…?
Lesson 3 Narrative

This third grade multiplication lesson is modified for students with varying levels of English proficiency. Through sheltered strategies, adjusting discourse, and enhancing interaction, the content of this lesson will be accessible to all learners. The content objectives for this lesson are:

1. Use multiplication to complete an order form to buy supplies for a school party. (Students will use multiplication because more than one of each item will be needed).
2. Explain how multiplication applies to real life situations, such as shopping.

The language objectives for this lesson are:

1. Discuss and record an order for party supplies on an order form.
2. Write in journals to respond to the question: How does multiplication help you in real life situations, such as shopping?

With the modifications made to the original lesson, it is intended that all students will meet these objectives.

Sheltered strategies are incorporated throughout this multiplication lesson. One way the lesson is contextualized is through modeling. The teacher models language and activities throughout the lesson. For example while reading "Just Add Fun!" the teacher models how the characters in the book use multiplication during their shopping trip. Then the teacher models how to complete an order form, as students will do in the learning activity. Adjusting discourse during the lesson through repetition, pauses, pacing, framing main ideas, and checking understanding will support students throughout the lesson.

This lesson engages students at appropriate language proficiency levels. For example, Level 5 and 4 learners are expected to work in groups to use multiplication to complete an order form, following specific "shopping rules," to create an order totaling close to $100. Levels 4, 3, 2, and 1 students will receive a sample completed order form to use as a model. Added supports for Levels 2 and 1 include partially completed order forms and items with visuals already listed on the order form. The teacher will work with Level 1 students to model how to "shop" for items and complete the order form. Strategies such as additional models, visuals, and teacher support make this activity accessible to students of all levels of English proficiency.

Teacher questioning and Instructional Conversations create opportunities for output in this lesson. All students experience using multiplication to "shop" during the learning activity. Students respond to the learning activity by discussing and writing about how multiplication can help in real life situations. It is intended that the teacher use these responses as springboards for small group Instructional Conversations. The Instructional Conversations should include strategies such as asking open-ended questions. Teacher feedback during these conversations should be limited to clarifying meaning, paraphrasing, and wait time to elicit interaction. It is intended that the adjustments made to this lesson will allow all student to engage in interaction and complete the activities to lead students in an understanding of multiplication concepts.
"Let's begin again," Hank said.
"Gingersnap cookies. Two each for three guests."
"Two plus two plus two," said Frank.
"Peppermints," said Hank. "Three each for three guests."
"Three plus three plus three," said Frank.
"This shopping list will take us all day!"
"Gumdrops," said Hank. "Four each for three guests."
"Four plus..."
The phone rang again.

"That was Sue," said Frank. "She wants to bring her two little sisters, Meg and Jenny. I told her to bring another chair."

"Good thinking," said Hank. "But now we have five guests! We have to make a new list."

Hank threw away the old shopping list.

"Gingersnaps," he said. "Two each for five guests."

"Two plus two plus two plus two plus two," said Frank.
"I know! Let's count by twos!" said Hank.  
"That will make things go faster."

"Good thinking!" said Frank. "Two, four, six, eight, ten. We need to buy ten gingersnaps."

"Peppermints. Three each for five guests," said Hank.

"We better hurry," Frank said. "Three plus three plus..."

Suddenly Hank stopped writing. He threw away the list.

"What are you doing?" Frank asked. "We need that list!"
5 \times 2 = 10
5 \times 3 = 15
5 \times 4 = 20
“I know a faster way,” Hank said.
Hank wrote on his pad.

\[
\begin{align*}
5 \times 2 &= 10 \\
5 \times 3 &= 15 \\
5 \times 4 &= 20
\end{align*}
\]

“See? I counted up by fives,” said Hank.
“How did you do that?” said Frank.
“Look. Five times four is 5, 10, 15, 20 gumdrops. Get it?” said Hank.
“So five times three is 5, 10, 15,” said Frank.
“Got it!”
Hank took $10.00 from the money jar.
“Let’s go shopping!” he said.
**X-Mart**

We are in charge of planning a school-wide party! The problem is we don't have all of the supplies we need. We have $100 to order treats and decorations. There are some rules we need to follow when we order our party supplies.

**Rules:**
- You must purchase at least 2, but no more than 10, of any item.
- You must order at least three different kinds of items.
- The total purchase must come as close to $100 as possible without going over.

### X-Mart Party Supplies

<table>
<thead>
<tr>
<th>Balloons</th>
<th>Cake</th>
<th>Candy</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2</td>
<td>$6</td>
<td>$7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cookies</th>
<th>Flowers</th>
<th>Streamers</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5</td>
<td>$9</td>
<td>$3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pizza</th>
<th>Confetti</th>
<th>Streamers</th>
</tr>
</thead>
<tbody>
<tr>
<td>$8</td>
<td>$1</td>
<td>$4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Napkins</th>
<th>Cups</th>
<th>Plates</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3 (10 in each package)</td>
<td>$5 (10 in each package)</td>
<td>$6 (10 in each package)</td>
</tr>
</tbody>
</table>
X-Mart Order Form

<table>
<thead>
<tr>
<th>How many?</th>
<th>Item</th>
<th>Price for 1</th>
<th>Multiplication Number Sentence</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Total Items

Grand Total Cost

Resource 3-3, Use with Levels 4 and 5
# X-Mart Sample Order

## X-Mart School Supplies

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pencils</td>
<td>$2</td>
</tr>
<tr>
<td>Binders</td>
<td>$6</td>
</tr>
<tr>
<td>Crayons</td>
<td>$4</td>
</tr>
<tr>
<td>Pens</td>
<td>$5</td>
</tr>
<tr>
<td>Folders</td>
<td>$1</td>
</tr>
<tr>
<td>Erasers</td>
<td>$3</td>
</tr>
</tbody>
</table>

## X-Mart Order Form

<table>
<thead>
<tr>
<th>How many?</th>
<th>Item</th>
<th>Price for 1</th>
<th>Multiplication Number Sentence</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>pencils</td>
<td>$2</td>
<td>$2</td>
<td>$6</td>
</tr>
<tr>
<td>2</td>
<td>binders</td>
<td>$6</td>
<td>$6</td>
<td>$12</td>
</tr>
<tr>
<td>4</td>
<td>crayons</td>
<td>$4</td>
<td>$4</td>
<td>$16</td>
</tr>
<tr>
<td>3</td>
<td>pens</td>
<td>$5</td>
<td>$5</td>
<td>$15</td>
</tr>
<tr>
<td>6</td>
<td>folders</td>
<td>$1</td>
<td>$1</td>
<td>$6</td>
</tr>
<tr>
<td>2</td>
<td>erasers</td>
<td>$3</td>
<td>$3</td>
<td>$6</td>
</tr>
</tbody>
</table>

Total Items: 20

Grand Total Cost: $61

Resource 3-4, Use with Levels 4, 3, 2, 1
<table>
<thead>
<tr>
<th>How many?</th>
<th>Item</th>
<th>Price for 1</th>
<th>Multiplication Number Sentence</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Banner</td>
<td>$4</td>
<td>$5 \times 4$</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Items</th>
<th>Grand Total Cost</th>
</tr>
</thead>
</table>

Resource 3-5, Use with Level 3
<table>
<thead>
<tr>
<th>How many?</th>
<th>Item</th>
<th>Price for 1</th>
<th>Multiplication Number Sentence</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Balloons</td>
<td>$2</td>
<td>$5 \times 2</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Cake</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Candy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cookies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flowers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Streamers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pizza</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confetti</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Banners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Napkins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plates</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Items: 11

Grand Total Cost

Resource 3-6, Use with Levels 2 and 1
Look at the items going into each shopping cart. Can multiplication help you find the total for that cart? Check \(\checkmark\) yes or no.

Can multiplication help you find the total? \(\checkmark\)yes \(\checkmark\)no

Can multiplication help you find the total? \(\checkmark\)yes \(\checkmark\)no

Can multiplication help you find the total? \(\checkmark\)yes \(\checkmark\)no

Can multiplication help you find the total? \(\checkmark\)yes \(\checkmark\)no
Checklists
# Unit: Grade 3 Multiplication

## Grammar and Functions Checklist

<table>
<thead>
<tr>
<th>Grammar</th>
<th>Lesson</th>
</tr>
</thead>
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<tr>
<td>Plural nouns</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Quantifiers</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>&quot;Come in&quot;</td>
<td>1, 2</td>
</tr>
<tr>
<td>Math sentences with symbols (+, x, and =)</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Non-referential ‘there’</td>
<td>2</td>
</tr>
<tr>
<td>Present progressive</td>
<td>2</td>
</tr>
<tr>
<td>Past progressive</td>
<td>2</td>
</tr>
<tr>
<td>Copula</td>
<td>2</td>
</tr>
<tr>
<td>Questions beginning with ‘How many…’</td>
<td>2</td>
</tr>
<tr>
<td>Irregular verb: cost</td>
<td>3</td>
</tr>
<tr>
<td>Simple present tense</td>
<td>3</td>
</tr>
<tr>
<td>Simple future tense</td>
<td>3</td>
</tr>
<tr>
<td>Adverbial subordinator (When you __, multiplication can help you __.)</td>
<td>3</td>
</tr>
<tr>
<td>Comparisons</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Functions</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify</td>
<td>1</td>
</tr>
<tr>
<td>Connect</td>
<td>1</td>
</tr>
<tr>
<td>Interpret</td>
<td>2</td>
</tr>
<tr>
<td>Compose</td>
<td>2</td>
</tr>
<tr>
<td>Apply</td>
<td>3</td>
</tr>
<tr>
<td>Relate</td>
<td>3</td>
</tr>
</tbody>
</table>
FLA 518: Sheltered ELL Strategies Checklist

Write the page numbers and any other identifying features to identify those parts of your lessons that employ the following strategies.

<table>
<thead>
<tr>
<th>SHELTERED STRATEGIES</th>
<th>Lesson 1</th>
<th>Lesson 2</th>
<th>Lesson 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Contextualize Lesson</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. A. Build and Activate Background Knowledge</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>I. B. Use extensive Visuals, Realia, Manipulatives, &amp; Gestures</td>
<td>1</td>
<td>1</td>
<td>1, 2</td>
</tr>
<tr>
<td>I. C. Model (Instructions, Processes)</td>
<td>2</td>
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<td>1, 2</td>
</tr>
<tr>
<td>I. D. Create Opps. To Negotiate Meaning/ Check Understanding</td>
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<td>1</td>
<td>3, 5</td>
</tr>
<tr>
<td>II. Make Text Comprehensible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II.A. Intentional Use of Graphic Organizers</td>
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<td>2-1</td>
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<tr>
<td>II.B. Develop Vocabulary</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>II.C. Modify Written Text</td>
<td>2</td>
<td>1, 6</td>
<td>1, 3, 5</td>
</tr>
<tr>
<td>III. Make Talk Comprehensible</td>
<td></td>
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<tr>
<td>III.A. Pace Teacher’s Speech</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>III.B. Use of Listening Guides</td>
<td>1</td>
<td>1-1</td>
<td>1-1</td>
</tr>
<tr>
<td>III.C. Use of Word Walls</td>
<td>1</td>
<td>1-2</td>
<td>1-7</td>
</tr>
<tr>
<td>III.D. Frame Main Ideas</td>
<td>1</td>
<td>1-1</td>
<td>2-7</td>
</tr>
<tr>
<td>III.E. Check for Understanding</td>
<td>1</td>
<td>1</td>
<td>1, 2, 3-4</td>
</tr>
<tr>
<td>IV. Engage: Opportunities for Output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV.A. Use Teacher Questioning and Response Strategies</td>
<td>2</td>
<td>2-3</td>
<td>2-3</td>
</tr>
<tr>
<td>IV.B. Practice Instructional Conversations</td>
<td>2</td>
<td>2-3</td>
<td>2-3</td>
</tr>
<tr>
<td>V. Engage at Appropriate Language Proficiency Levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V.A. Use questions appropriate for language proficiency levels in conversations, activities, and assessments</td>
<td>3, 4</td>
<td>3, 4</td>
<td>3, 4</td>
</tr>
<tr>
<td>VI. Give Students Voice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VI. A. Challenge students to produce extended talk</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>VI. B. Model Language for Oral and Written Production</td>
<td>2</td>
<td>2-7</td>
<td>2-4</td>
</tr>
<tr>
<td>VI. C. Use Group/Pr. Work to Elicit Student Talk; Students as Researchers</td>
<td>2</td>
<td>2-3</td>
<td>2-3</td>
</tr>
</tbody>
</table>
Original
Lessons
February 9, 2004  Task C.2: Lesson Log for Numeracy Lesson #1  lesson time 2:05—3:10: 65 minutes
What did you expect students in class to learn during this lesson? I expected students to understand that in order to multiply, you must have equal groups. By identifying depictions of equal groups in magazines, and talking with others in their group about these pictures, I expected the learners to identify circumstances where multiplication can be applied in the real world.

List and describe the instructional strategies, learning activities and resources you used to promote learning during the lesson. Describe what you did and what the students did.

- To begin my lesson I stated the objective so that the learners would know why they were participating in the lesson: “When you put together equal groups you can multiply. We will be looking for equal groups so that we can use them to write multiplication story problems.”
- I told the students to listen carefully as I read aloud What Comes in 2’s, 3’s, & 4’s? by Suzanne Aker because they would be looking through magazines to find pictures of objects that are always in equal groups. This book provided examples of equal groups. For instance, “There are two handles on the sink— one hot and one cold.”
- We discussed what comes in 2’s—10’s, and I made a list on the board.
- I modeled finding a picture of eyes in a magazine, cutting them out, gluing them on an index card and writing, “Eyes come in twos.”
- I assigned each of the five groups of five students specific equal groups to focus on. For example, the group with students C and D were to focus on finding objects that come in 2’s or 8’s. I gave each group one number that would be easier to find examples of, and one that would be more challenging to allow for differentiation. The students were encouraged to make cards representing groupings other than the ones they were asked to focus on if they found interesting examples. I also gave the students permission to draw pictures on the cards instead of cutting pictures out of magazines if they chose. The students were to share and discuss each finding with the other members in their group.
- The groups shared their findings with the rest of the class. I told them that they would be using the bulletin board to write multiplication story problems the next day.
- Students responded to the lesson independently by answering in their math journals, “What did I learn about multiplication today?” Each group also completed a self-assessment for group work.

How did students demonstrate their learning during the lesson? How did you communicate the standards for success to the students? The students demonstrated their learning during the lesson by identifying objects in the world that come in equal groups of 2’s—10’s and gluing or drawing them onto index cards to put on the bulletin board. I also evaluated each student’s journal to determine if he or she understood the concept of, “when you put together equal groups, you can multiply.” I communicated the standards for success to the students by modeling the appropriate language and performance task that was
expected for this lesson. As I met with each group I often reminded the learners verbally throughout the lesson what they needed to complete, to be successful during this learning segment.

**How did you monitor students’ learning and what did you learn about their progress?** I monitored students’ learning by meeting with each group to assure that each student was finding appropriate examples for their level. For example, when I noticed that student D had found many examples of objects that come in 2’s, I encouraged her to find objects that come in 8’s, as I know she is capable of the challenge. Student C however, benefits from practicing with basic concepts, and I allowed her to focus on 2’s. I also checked the note cards each learner contributed to the bulletin board. I learned that while the students were able to find things that come in 2’s—10’s, they weren’t finding objects that *always* come in those groupings. For example student C submitted a picture of two pandas in a cage and wrote, “There are always two pandas in a cage,” which is not the type of example I was hoping the students would find. When I checked their responses to, “What did you learn about multiplication today?” in their math journals, I was satisfied that they were comfortable with the concept that you need equal groups to multiply.

**Describe the ways you informed students about their progress.** As I collaborated with each group throughout the lesson, I provided them with verbal feedback. For example, I noticed that many of the students were finding pictures of groups of objects that weren’t always justified, for instance, “three friends walking down the street.” I tried to give them examples of things that were always grouped the same. I said, “There aren’t *always only* three friends walking down the street, but what does each friend always have ten of?” I also wrote comments on their index cards as well as in their math journals.

**Based on the performance/work of your students for the lesson, how will you adjust, if necessary, your teaching for the next lesson?** Before I begin the next lesson I will review the concept of equal groups that are *always* true, as I feel there was confusion about this concept based on some of the index cards I received. As I consider this concept, I realize that it requires higher level thinking to evaluate the world around us. I would like to get the learners thinking harder about this. I will have them study a partner and find examples of things that the partner will almost always be likely to have 2—10 of. I will also use geometric shapes as examples. For instance, triangles always have 3 angles, and octagons, such as stop signs will always have 8 sides.

Tomorrow, I will take one member from each group to form a sixth group that can work at the back table. As I circulated the room today, I felt that 5 members in a group all sharing ideas was overwhelming for the learners. I hope that by eliminating one member from each group, the students can remain more focused and productive.
Spiders have eight legs.

Great work! I'm excited to see you challenged yourself and found that spiders always have eight legs. Eights are tricky to find!

There are always two sleeves on a shirt. Maybe you will use this example to write a story problem tomorrow.
What did you learn about multiplication today?

We learned to find things that come in equal groups.

In order to multiply, they need to be equal.

Eering come in twos.
Fingers come in fives.

I can write multiplication problems about the equal groups.

I can tell that you understand that groups must be equal in order to multiply. I can't wait to read your multiplication stories tomorrow.
February 10, 2004 Task C.2: Lesson Log for Numeracy Lesson #2 lesson time 1:10—2:10: 60 minutes

What did you expect students to learn during the lesson? I wanted students to expand on the concept that in order to multiply you must have equal groups. During yesterday’s lesson the learners constructed a bulletin board of objects that come in 2’s—10’s, exploring the idea of equal groups. To apply this understanding, I wanted the learners to compose multiplication story problems based on the board.

List and describe the instructional strategies, learning activities and resources you used to promote student learning during the lesson. Describe what you did and what the students did.

- To begin the lesson, I reviewed the concept of things that *always* come in equal groups. As I stated in my reflection yesterday, this was an idea that was unclear to some of the learners at the end of the lesson. The students looked for examples of equal groups on their classmates’ bodies/faces as well as in geometric shapes. After the activity, the learners had a better understanding of this concept.

- Next, I read *Each Orange Had 8 Slices* by Paul Giganti, Jr. Prior to reading, I told the class that they would be using the equal group bulletin board to write multiplication story problems. I explained that this book was full of multiplication story problems.

- While reading, I modeled solving the problems in an interactive manner by asking for ideas and feedback from the class. I began by using repeated addition number sentences written on the board to solve the problems. For example the book read, “On my way to the zoo I saw 3 waddling ducks. Each duck had 4 baby ducks trailing behind.” I then asked, “How many baby ducks were there?” I wrote 4+4+4=12. After answering a few questions using repeated addition, the board was full. I asked the class if there was a shortcut to writing these long addition number sentences, and volunteers helped me change them into shorter multiplication sentences.

- I then modeled using the bulletin board to write a story problem and solved the problem using pictures, repeated addition, a multiplication number sentence, and words. The entire time I modeled I used a think aloud strategy, sharing my thought process with the class.

- Next, I explained that the learners would be writing three story problems in their groups and then switching with another group to solve the other group’s story problems.

- Finally, the groups completed rubrics for the lesson as well as self-assessments for group work.

How did students demonstrate their learning during the lesson? How did you communicate the standards for success to the students? After reflecting on my lesson yesterday, I arranged the students into groups of four instead of five, hoping for a more organized group that could sustain meaningful discussion. I gave each group three worksheets to write three different problems. I also gave each group a paper version of the bulletin board so that they wouldn’t have to leave their groups to look at the board in the back of the room. I assigned a recorder to write the problems, although all of the group members were to help formulate them. The bottom half of the paper was to be filled out after two groups switched
the problems. I assigned jobs of picture drawer, addition number sentence writer, and multiplication number sentence writer to individual members to record the different ways of solving the problem. All members were responsible for contributing to the thinking. Assigning specific jobs was another change I made after reflecting on my lesson yesterday to keep the group more organized and focused. Choosing individual students to do different jobs was also a way to differentiate the lesson. For example, I gave C the job of addition number sentence writer because I knew that after the picture drawer had drawn the picture, student C could make the connection between the picture and repeated addition. I gave D the job of multiplication number sentence writer because I knew she was capable of the more abstract representation. They demonstrated their learning through discussion and completing the worksheets. I communicated the standards for success by modeling the expectations and writing specific directions on the worksheet. Each group also completed a rubric requiring the members to rate their performance. I also evaluated the learners on the rubric.

How did you monitor students’ learning and what did you learn about their progress? I met with each group and asked questions to provide scaffolding to help them write and solve problems. For example, if I noticed a group was “stuck” I encouraged them to use the bulletin board for ideas. I also reviewed each group’s worksheets. I was excited to discover that all groups were writing appropriate problems. I expected to find that some would write addition problems, as was the case on the majority of the pretests. While meeting with Student C and D’s group, I noticed that C wasn’t contributing much to help formulate the problems, so I involved her by asking her questions such as, “How can your group use spiders to write a multiplication story problem?” Student D was proficient at creating ideas for the problems, as I observed most students were, which showed growth from the pretest.

Describe the ways you informed students about their progress. I provided verbal feedback while meeting with each group. For instance, when Student C’s group was developing a story problem, they began by writing, “There were five stars and each star had five points.” I asked C what the question in the story problem should be and she said, “How many stars are there in all?” By asking her guiding questions such as, “Are the stars what come in equal groups?” she was able to answer that the five points on the star were what come in equal groups. Therefore the question should be, “How many points are there in all?” I also informed students of their success by writing specific comments on their worksheets and rubrics and allowing them time to review and reflect on their work together after reading my feedback.

Based on the performance/work of your students for the lesson, how will you adjust your teaching for the next lesson? I will continue to group students in fours instead of fives. During this lesson, the last task was, “Please explain your answer in words and write what you were thinking as you solved this problem.” Many claimed not to know what to do, although I had modeled how to answer this type of question when explaining the performance task. I had to stop the groups from working to repeat my
expectations for this question. During the next lesson, which will apply multiplication problem solving to the real life situation of ordering from a catalogue, the learners will answer a similar question in their journals. I think the process of metacognition is valuable and a concept the students need to practice.
Names ______________________  story problem only  __________________________

Please use the bulletin board to make up a multiplication story problem. Remember, when you put together equal groups, you can multiply.

Fingers come in equal groups, so this is a great idea. Make sure your problem for a multiplication story problem. Make sure your question has "in all" or "all together" so that the solver knows exactly what information to find.

There were three kids playing on the swing and each hand had 5 fingers on each hand. How many fingers?

Problem solved by. ______________________

Draw a picture to solve the problem. Excellent job solving the problem in different ways!

** ** ** **

Write a repeated addition number sentence to solve the problem.

\[ 5 + 5 + 5 + 5 + 5 + 5 = 30 \]

Write a multiplication number sentence to solve the problem.

\[ 6 \times 5 = 30 \]

Please explain your answer in words. Write down what you were thinking as you solved this problem.

We were thinking if you counted 6 hands, it would be thirty. How do you know it would be thirty? I need more information.

Date 2-10-04
February 11, 2004 Task C.2: Lesson Log for Numeracy Lesson #3 lesson time 1:40—2:45: 65 minutes

VIDEOTAPED LESSON

What did you expect students in class to learn during the lesson? I expected students to apply what they know about multiplication and equal groups to the real life situation of shopping. I wanted them to realize that when you purchase more that one of an item, those items cost “equal groups of dollars,” and that the quickest way to figure out your total is to multiply.

List and describe the instructional strategies, learning activities and resources you used. Describe what you did and what the students did.

- Before I started today’s lesson I took an opportunity to review the pretests with the learners.
- To begin the lesson I told the students that we would be planning a valentine party and that I would be reading a book, Just Add Fun! By Joanne Rocklin. I explained that in the book, the characters use multiplication to help them plan a party and we would be using multiplication to pretend to order supplies for the Roger Sherman Valentine Dance (which really is tomorrow).
- I read aloud Just Add Fun! We discussed the strategies the characters used to buy party snacks. For example when their guest list continued to change they used repeated addition to recalculate how many gingersnaps to buy. Finally they realized that multiplication was a faster way to figure it out.
- To demonstrate this idea, I had the students use calculators to add 6+6+6+6+6=30 and we timed how long it took to add. We then compared it to the considerably less time it took to calculate 5x6=30.
- Next, I modeled what I expected the students to do by using the overhead projector. I explained that they would get a “catalogue” of valentine party supplies and would have to decide what to order for our dance. We reviewed the rules for shopping and I demonstrated how to fill in the order form.
- Then I explained that each group must agree on an order and that each member must fill out a form (to assure that each student would remain focused). The calculators were only to determine the grand total cost. I also clarified that the colored tiles could be used to help figure out the multiplication problems (each tile represents $1).
- I noted that at the end of the lesson we would determine which group came closest to $100.
- When all of the groups were satisfied with their grand total, we discussed strategies different groups used and why it is helpful to know how to multiply while shopping.
- Students responded independently in their journals to: “How does multiplication help you in real life situations, such as shopping?” Groups completed a self-assessment for group work, as well as a rubric.

How did students demonstrate their learning? How did you communicate the standards for success? Students demonstrated their learning by discussing strategies with their group members and applying these strategies when they completed the order forms. I grouped students with different abilities together to allow for peer tutoring. I also provided each learner with manipulatives. I communicated the
standards for success by modeling what I expected them to do. The list of rules the learners followed while shopping provided very clear directions. They also received a rubric listing my expectations and method of scoring.

How did you monitor students’ learning and what did you learn about their progress? I met with each group several times and asked questions such as, “How does multiplication help you order these party supplies?” I wanted to determine their understanding of the concept that when you order more than one of the same item, the dollar amounts can be considered equal groups. I also studied their completed order forms to be sure that they made the correct calculations. Finally, I read their independent journal responses to the question, “How does multiplication help you in real life situations, such as shopping?” I learned that not only are the learners able to calculate the correct answers to multiplication sentences, they are learning how multiplication is relevant to the world around them. On the pretest, most of the students were able to calculate multiplication sentences, but didn’t know when to apply this function. Student D has become confident at knowing when to apply multiplication and how to calculate multiplication problems. Although Student C has demonstrated substantial growth with multiplication concepts, she continues to rely on others to assist her in her thought process. True to character she plugs away and asks thoughtful questions until concepts begin to make more sense to her.

Describe the ways you informed students about their progress. I provided specific feedback to the students as I met with each group. When one group needed help figuring out the product for 6x8, I suggested that they use the tiles to aid them. When they took my advice and used the manipulatives to set up an array model, with six rows of eight, I told them that I was happy to see they are really beginning to understand multiplication. I also wrote specific feedback on the learners’ order forms, as well as in their journals. The groups assessed themselves on the rubric and I also used the rubric to evaluate their work.

Based on the performance/work of your students for the lesson, how will you adjust the next lesson? The learners were motivated by the valentine theme of this lesson. As I circulated the room, I noticed that they were all actively involved. Also as I mentioned earlier in my lesson log, the class enjoys friendly competition. Since this lesson was successful, I’m going to adjust my lesson for tomorrow to include a valentine theme and competition. The lesson I had planned focuses on building arrays. Originally a pair of students was going to roll dice and cooperate to turn the two numbers into an array model for multiplication using the tiles. Based on the success of this lesson, I decided to turn the activity into a game and instead of using tiles, the students will be using conversation hearts to build their arrays, continuing with the valentine theme. Also, after viewing the video I have decided to change Student C’s seat so that she is sitting in between two of the most vocal and helpful students in her group, as she benefits from asking questions and receiving help. I often notice that she seems to be in the zone of proximal development with math concepts, and the scaffolding provided by her peers is beneficial.
X-Mart

Pretend we have been put in charge of Roger Sherman's Valentine Dance! The problem is we don't have all of the supplies we need. We have $100 to order Valentine treats and decorations. There are some rules we need to follow when we order our party supplies.

Rules:
* You must purchase at least 2, but no more than 10, of any item.
* You must order at least three different kinds of items.
* The total purchase must come as close to $100 without going over.

X-Mart's Valentine Party Supplies

Valentine Balloons $2
Valentine Cake $6
Valentine Candy $7

Valentine Cookies $8
Valentine Flowers $9
Valentine Streamers $3

Valentine Centerpiece $5
Valentine Confetti $1
Valentine Banner $4

Valentine Napkins $3 (10 in each package)
Valentine Cups $5 (10 in each package)
Valentine Plates $6 (10 in each package)
# X-Mart Order Form

<table>
<thead>
<tr>
<th>How Many?</th>
<th>Item</th>
<th>Price for 1</th>
<th>Multiplication Number Sentence</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Valentine cards</td>
<td>6</td>
<td>$3 \times 6 = 18$</td>
<td>18</td>
</tr>
<tr>
<td>6</td>
<td>Valentine balloons</td>
<td>2</td>
<td>$6 \times 2 = 12$</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>Valentine flowers</td>
<td>9</td>
<td>$2 \times 9 = 18$</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>Valentine banner</td>
<td>4</td>
<td>$3 \times 4 = 12$</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>Valentine cookies</td>
<td>8</td>
<td>$5 \times 8 = 40$</td>
<td>40</td>
</tr>
</tbody>
</table>

This group ordered exactly $100 worth of items. You really cooperated to get the job done. I also noticed that this group was really careful about double checking products. Excellent work! 🌟

Total Items: 22

Grand Total Cost: $100
2/11/04

When you go shopping, if you buy more than one of the same thing multiplying will help and you don't have to go 2 x 2 x 2 x all you have to do is put 4 x 2 = 8.

This is a great example. I can tell you really understand how multiplication can help you in real life.