

Multiplication

This section will focus on understanding the concepts associated with the multiplication of whole numbers.

Tray Setup

Figure 1 illustrates the initial tray setup that will be used for all whole number operations. This setup is also what we refer to when students are reminded to reset their trays.

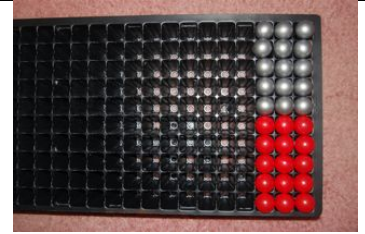


Figure 1

Whole Number Multiplication Overview

1. The concept of the multiplication of whole numbers will be modeled in both repeated addition and array form. Both are shown for they help the student understand when this operation is used in an application.

2. The multiplication concept is first modeled as the repeated addition of a given set. Figure 2 illustrates groups of equal sized sets. The number of sets illustrated represents the number of times the set is added together. Figure 3 represents the set formed when the similar sets are combined.

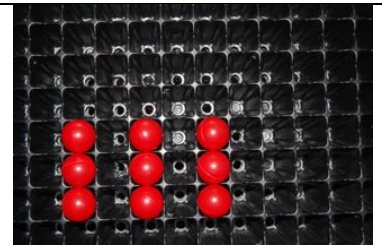


Figure 2

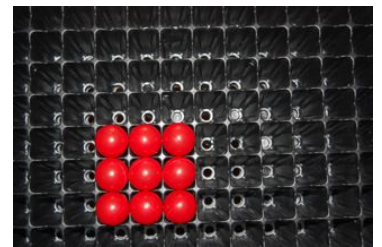


Figure 3

3. The concept of multiplication is next modeled as an array. Figure 4 shows an array formed by rows and columns. The number of balls in a row represents how many we have in each group. The number of columns represents how many of these groups we have. We can count the number of balls in the array or use multiplication to find the total. Remind students that the operational procedure is still the same and that the only difference in the models is how the application is worded.

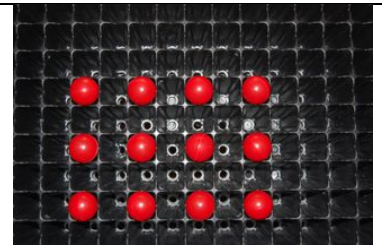


Figure 4

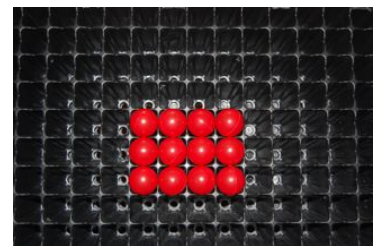


Figure 5

4. In all sections, the problems will be presented as word problems and solutions illustrated by the use of balls	
5. All solutions are given in symbolic form with the accompanying written form.	

Instruction Movie Sample Slide

Lesson Name

Problem


Written

Manipulative


Multiplication Repeated Addition

Each month Carlos would go to the park and watch five baseball games. How many baseball games did he go to in three months?


1




2



3



$3 \times 5 = 15$



Carlos went to fifteen baseball games in three months.

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Answer

Symbols

Manipulative

Words

Instruction Movie Sample Slide

Lesson Name

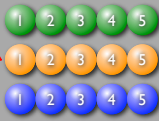
Problem


Written

Manipulative

Multiplication (Array)

When Jay laid his cards with pictures of football players on them on a table, he had three rows with five cards in each row. How many football cards did Jay have all together?





$3 \times 5 = 15$

Jay had fifteen football cards all together.

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Answer

Manipulative

Symbols

Words

Assessment Movie Sample Slide

Written Multiplication Problem

Problem as Drawing

Answer as Drawing

Answer in Symbols

Written Answer

4.) Elizabeth worked three math problems every day for seven days. How many math problems did Elizabeth work?

$7 \times 3 = 21$

Elizabeth worked 21 math problems.

5.) Terri has a book case in her room. The book case has five shelves and there are five books on each shelf. How many books does Terri have?

$5 \times 5 = 25$

Terri has 25 books.