

Math Topic – 2 Digit Multiplication

Grade Level(s): 5

Learning Outcomes:

A5 demonstrate an understanding of multiplication (2-digit by 2-digit) to solve problems [C, CN, PS, V]

Context of Lesson within the unit:

The students had been working on

- finding factors of number using the picture book “Two Ways to Get to Ten” by Ruby Dee
- using invented strategies for multiplication and trying out more than one strategy to solve a problem
- moving from their invented strategies to the array model
- started with 2-digit by 1-digit word problems
- practiced multiplying by 10 and 100
- using picture books to introduce the concept and the students made multiplication problems from the story context to solve.

Materials:

- Base ten blocks

Picture Books

- *365 Penguins* by Jean-luc Fromental
- *Math Curse* by Jon Scieszka & Lane Smith
- *Minnie’s Diner* by Dayle Ann Dodds

Professional Books

- First Steps in Mathematics: Operation Sense
- *VandeWalle: Teaching Student Centered Mathematics 3-5*
- *Marilyn Burns: Math and Literature 3-5*

Attached are the following handouts: Multiplication Criteria, Invented Strategies for Multiplication, Multiplication Think Tac Toe

Lesson Ideas:

1. Share Learning Intention:

- To explain the process of multiplication
- To solve a multiplication problem with more than one strategy

2. Warm-up or review of concepts:

- Invent a word problem from story context of *365 Penguins* (e.g. On day 63 there are 63 penguins who all want 27 new computer games. How many computer games do they have in all?)

3. Activity with many levels of entry introduced and practiced

- Think Tac Toe, a board filled with multiplication problems that students can choose their questions from.

4. Establish Criteria for success

We co-created criteria together and below is what we came up with. Please note that it is important that students are part of this criteria setting.

You will know you fully understand the concept when you:

Criteria

- most of the time get the correct solution
- recognizing that answer is reasonable
- have to use two or more strategies
- show your thinking on paper
- explain your thinking on paper
- know which strategy is the most useful and fastest

Things that are helpful

- know how to multiply by 10 and 100
- know your multiplication facts
- know how to find factors of numbers
- be able to partition numbers

5. Activity continued

- Finish word problem
- Then work on “Think Tac Toe”

6. Reflection: Self assessment based on criteria and learning intention.

- Students journal using the “Communicating Your Thinking” rubric

7. Ticket out the door: Question that links to the learning intention

- Tell the two strategies that you used to solve the problems

Lesson Review:

- Did I connect the concept to previous experiences?
- Did I provide individual choice?
- Was there an open-ended task?
- Was it possible to enter the task from a variety of levels?
- Was time provided for ‘Turn and Talk’ for sharing of strategies and perspectives?