

Division Lesson – A Remainder of One by Elinor J. Pincezes

Grade Levels: 4 -5



Learning Outcomes:

Grade 4

A4 Explain the properties of 0 and 1 for multiplication, & the property of 1 for division.

- Explain the property for determining the answer when dividing numbers by one

A7 Demonstrate an understanding of division(1-digit divisor and up to 2-digit dividend) to solve problems by:

- (a) using personal strategies for dividing with and without concrete materials
(b) estimating quotients (c) relating division to multiplication.

- Solve a division problem without a remainder using arrays or base ten materials
- Solve a given division problem with a remainder using arrays or base ten materials
- Solve a given division problem using a personal strategy and record the process
- Created and solve a word problem involving a 1 or 2 digit dividend

Grade 5

A3 Apply mental mathematics strategies and number properties, to determine (RECALL) answers for basic multiplication facts to 81and related division facts.

- Explain why division by zero is not possible or undefined

A6: Demonstrate, with and without concrete materials, an understanding of division (3-digit by 1-digit) and interpret remainders to solve problems.

- Model the division process as equal sharing using base ten blocks and record it symbolically
- Explain that the interpretation of a remainder depends on the context
- Ignore the remainder
- Solve a given division problem in context using personal strategies and record the process

Materials:

- Colour Tiles and Base Ten materials
- Books: Divide and Ride by Stuart Murphy, Esio Trot by Roald Dahl and A Remainder of One by Elinor J. Pinzes
- Professional Resources: Math and Literature (4-6) Rusty Bresser and Teaching Children Mathematics, J. VandeWalle
- Worksheets

Vocabulary:

Division – une division
Dividend – une dividende
Divisor – un diviseur
Quotient – un quotient
Remainder – un reste
Array – un jeton
Base 10 materials – materiel de base dix
Hundreds - centaines
Tens - dizaines
Ones – unites
Expanded form – la forme décomposée
Distributive property – la propriété de la distributivité

Lesson Ideas:

1. Learning Intention:
I can accurately record how I think about dividing larger numbers
2. Distribute colour tiles for students. As you read through the book, 'A Remainder of One', have students model the situation on their desks with the tiles. Encourage lining the tiles up as an array once the number of columns has been determine
For example: Divided by two- students have 25 tiles – pair them up and identify that there is one bug without a partner. Show pictorially as an array 2 by 12 then record symbolically how that is recorded in several ways, using the following language: 25 is the dividend, 2 is the divisor, 12 is the quotient and 1 is the remainder. Ask the students, what is needed for the ride to have a remainder of zero. Also discuss the situation if the divisor was 1 – for the 5's extend to what would happen if the divisor is 0. Continue this for several more pages (the entire book if needed).
3. When appropriate, distribute Division Think Board and have children record several troop formations for 25. Turn and Talk to share ideas prior to debriefing with whole class – what strategy did you use to determine the quotient. How could they record their thinking?
4. Again provide discussion time for examples that have a divisor of 1 and for the grade 5s division of 0.
5. Expand the situation to have a troop of a larger size (ex. 56 for grade 4's and 124 for grade 5's). Repeat some of the questions using Base-10 materials to represent the situation – regrouping the 10s as needed.
6. In partners have the children develop their own questions – establishing the number of bugs in the troop and the number of rows needed (keep this less than 10 unless an extension to a 2 digit divisor is desired by the 5's.)
7. Distribute A Remainder of One student sheet for independent activity.