

# “What a Wonderful World!” Colorful Cultural Activity for the Whole Family 01 – Build a Texas Abacus and Watch Your Kids Fall in Love with Arithmetic 04

## Problem #2: the Monthly Investment

Division might be easier than multiplication.

In our previous lesson, we did a multiplication problem. Today, we will do division. Moreover, if you remember the ‘warning’ we presented in the previous lesson, it was also on division. But do not let the warning discourage you. With a good choice of the divisor, even if it is longer than one digit, the problem can still be solved with ease and fun!

Problem #2: Kat plans to save \$3078 a year. Not counting any interest, how much does she have to save monthly?

Solution:

1) This is a division problem. It is dividing a yearly saving of \$3078 into 12 monthly savings without considering any interest that may incur, how much does she have to save monthly? (Figure 1.)



Figure 1: 3078 to be divided by 12

2) It will be of great help to know that 12, 24, 36, 48, 60, 72, 84, and 96 are all exact multiples of 12.

3) We are to divide by more than 10, therefore, we immediately know that the quotient will be at most 3-digit long.

4) Looking at the first two digits of the number to be divided, 30, we make the decision that 2 will be the first digit (hundred’s position) of our quotient because  $12 \times 2 = 24$ . We take 24 away from 30 to have 6 remained. (Figure 2.)



Figure 2: 2 is chosen as the first digit of the quotient

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5) Now we look at the first two digits of the remaining 678. We know that 5 will be our choice, because  $12 \times 5 = 60$ . We take away 60 from 67 to have 7 remained. (Figure 3.)



Figure 3: 5 is chosen as the second digit of the quotient

6) Now we look at the remaining 78 and determine that 6 will be our choice, because  $12 \times 6 = 72$ . We take 72 away from 78 to have 6 remained. (Figure 4.)



Figure 4: 6 is chosen as the third digit of the quotient

7) Answer: the quotient is 256 and the remainder is 6.

8) In other words, Kat has to save \$256 each month, with one month in which she has to save \$6 additionally. Or she can divide \$6 into 12 months, and save \$0.50 more each month.

9) We check the answer by using TI-nSPIRE to verify it is correct. (Figure 5.)

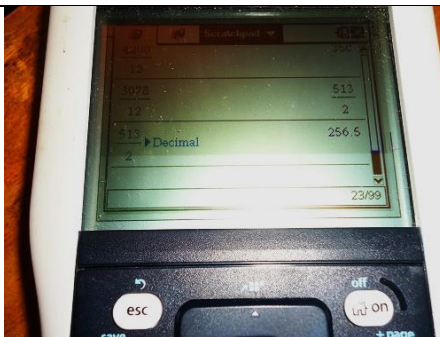


Figure 5: remainder is 6 which is equivalent to .5 of 12