Box Method

TASK CARDS

an alternative for long division

2 and 3 digit dividends; 1-digit divisors
some remainders

Created by Shelley Gray

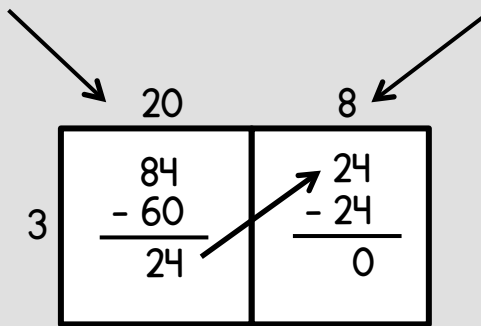# The Box/Area Method: an alternative to long division

The Box (or Area) Method is an effective alternative for traditional long division. It is a mental math based approach in which a division equation is solved in manageable parts in order to find the final quotient. This method is an excellent introduction to the partial quotients strategy, as it follows the same steps but a different format.

The box method involves subtracting parts until you get to 0, or as close to 0 as possible.

Let's take a look at how we perform the box or area method. I have also included a video link on the next page.

First we can take away 20 groups of 3, which makes 60. This leaves us with 24.

We carry the 24 over to the next box, and subtract 8 groups of 3, which makes 24. This leaves us with 0.
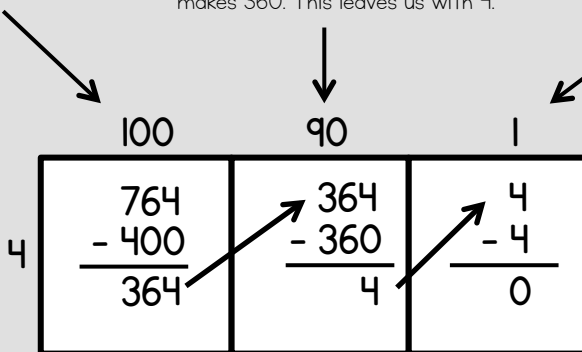
To find the quotient, we add these parts: 20+8.
So 84÷3=28.

$$
\begin{array}{c|c}
20 & 8 \\
\hline
\begin{array}{r} 84 \\ -\ 60 \\ \hline 24 \end{array} & \begin{array}{r} 24 \\ -\ 24 \\ \hline 0 \end{array}
\end{array}
$$

3

Here's another example. Notice that we try to work with "easy" numbers, such as multiples of 10 and 100:
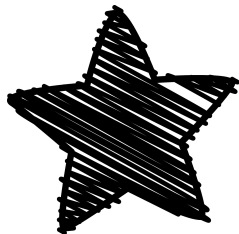
First we can take away 100 groups of 4, which makes 400. This leaves us with 364.

We carry the 364 over to the next box, and then we can subtract 90 groups of 4, which makes 360. This leaves us with 4.

We can take one more group of 4 away from 4. This leaves us with 0, so we know that we are finished the equation.

$$
\begin{array}{ccc}
100 & 90 & 1 \\
\end{array}
$$

$$
4\,
\begin{array}{|c|c|c|}
\hline
\begin{array}{r} 764 \\ -400 \\ \hline 364 \end{array} &
\begin{array}{r} 364 \\ -360 \\ \hline 4 \end{array} &
\begin{array}{r} 4 \\ -4 \\ \hline 0 \end{array} \\
\hline
\end{array}
$$

To find the quotient, we add these parts: 100+90+1.
So 764÷4=191.

Here is a link to a video that I've made about the Box Method for division. Please watch this to familiarize yourself with this method.

https://www.youtube.com/watch?v=yQivSMmYm20

Are you looking for even more support with teaching long division in your classroom? You might be interested in this self-paced, student-centered Long Division Station that will allow your students to move through all of these strategies and approaches at their own pace. That station can be found here: https://www.teacherspayteachers.com/Product/The-Long-Division-Station-self-paced-student-centered-3552960

This resource includes...

Detailed explanations of the box method, as well as a link to a helpful video

A box method strategy poster to display in your classroom:

Twenty-four task cards that practice the box method in a variety of different ways

Recording sheets to help your students stay organized

Answer keys to make self-checking a breeze!

www.ShelleyGrayTeaching.com