

# Box Method TASK CARDS

*an alternative for long division*

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

The divisor is missing from this equation. Can you figure out what it is? How did you figure it out?

100	40	4
576	176	16
-400	-160	-16
176	16	0

$100 \div 40 = 2 \text{ R} 176$

Box Method Division Task Cards Card #6

Solve the problem using the box method

If it takes the snake 8 minutes to slither 1 kilometer. How many kilometers could it slither in 168 minutes?

Box Method Division Task Cards Card #8

There is an error in this equation. Can you find it? Identify the error and make the necessary corrections.

100	30	4
288	88	8
-200	-80	-8
88	8	0

Box Method Division Task Cards Card #5

The dividend is missing from this equation. Can you figure out what it is? How did you figure it out?

200	70	8
400	157	17
-157	-140	-16
157	17	1

278 R1

Box Method Division Task Cards Card #1

Predict: Will this equation have a remainder? Then solve it (using the box method) to find out.

$$345 \div 3$$

Box Method Division Task Cards Card #3

Predict: Which equation will have a higher quotient? Then solve each equation using the box method to see if you were right.

$$457 \div 3$$
$$352 \div 2$$

Box Method Division Task Cards Card #5

Solve the problem using the box method

8 donuts can fit into each box. If there are 456 donuts, how many boxes will be needed in all?

100	10	4
456	56	16
-300	-40	-16
56	16	0

$100 \div 10 = 10 \text{ R} 4$

Box Method Division Task Cards Card #2

**Created by Shelley Gray**

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

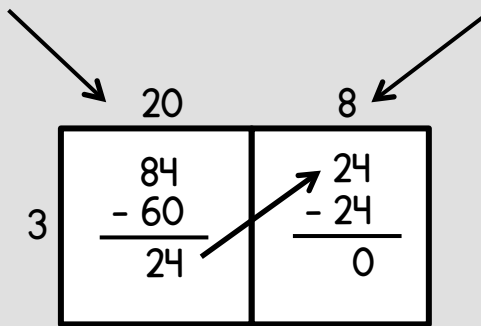
The Box (or Area) Method is an effective alternative for traditional long division. It is a mental math based approach in which a division equation is solved in manageable parts in order to find the final quotient. This method is an excellent introduction to the partial quotients strategy, as it follows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



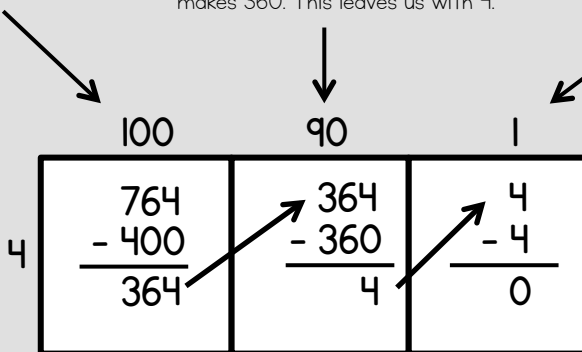
To find the quotient, we add these parts:  $20+8$ .  
So  $84 \div 3 = 28$ .

Here's another example. Notice that we try to work with "easy" numbers, such as multiples of 10 and 100:

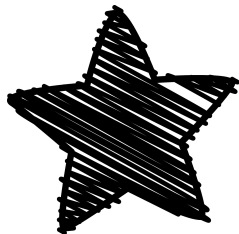
First we can take away 100 groups of 4, which makes 400. This leaves us with 364.

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.



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




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>

**THE  
LONG DIVISION  
STATION**

A SELF-PACED, STRATEGIC,  
STUDENT-CENTERED  
program for  
long division



BY SHELLEY GRAY

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:

**The Box Method: An Alternative to Traditional 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:  $20+8=28$ . So  $84 \div 3=28$ .

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 3, which makes 300. This leaves us with 24.

We carry the 24 over to the next box, and then we subtract 8 groups of 3, which makes 24. This leaves us with 0.

To find the quotient, we add these parts:  $100+8=108$ . So  $324 \div 3=108$ .

Here's one last example. In this example we can't get down to 0, so there is a remainder.

First we can take away 100 groups of 2, which makes 200. This leaves us with 70.

We carry the 70 over to the next box, and then we subtract 35 groups of 2, which makes 70. This leaves us with 5.

We can take one more group of 2 away. This leaves us with 3. This leaves us with 2.

To find the quotient, we add these parts:  $100+35+1=136$ . So  $272 \div 2=136$ .

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=qh3MmYm20>

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-SS2766>

## THE BOX METHOD for division

# 621 ÷ 3

	100	100	7
3	621	-300	321
			-21
			0

$100+100+7=207$

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

Solve the problem using the box method.

8 donuts can fit into each box. If there are 84 donuts, how many boxes will be needed in all?

$84 \div 8 = 10$  R 4

100 10 4

84	80	4
84	-80	4
		0

100+4=104

84 ÷ 8 = 10 R 4

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Which equation will have a remainder? Then solve it using the box method to find out.

$345 \div 3$

100 100 10 5

345	300	45
345	-300	45
		0

100+100+10+5=220

---

Which equation will have a higher quotient? Then solve each equation using the box method to see if you were right!

$457 \div 3$

$352 \div 2$

100 100 10 5

457	450	7
457	-450	7
		0

100+100+10+5=220

Solve the problem using the box method.

In one day, the employees at Isabelle's Ice Cream Shop made 275 scoops of ice cream. How many 3-scoop cones could they make with that amount of ice cream? How many scoops would be left over?

$275 \div 3 = 91$  R 2

100 30 4

275	270	5
275	-270	5
		0

100+30+4=134

---

Which equation will have a remainder? Then solve it using the box method.

$734 \div 5$

100 10 4

734	700	34
734	-700	34
		0

100+10+4=114

---

Which equation will have a higher quotient? Then solve each equation using the box method to see if you were right!

$436 \div 2$

$498 \div 3$

200 70 8

436	400	36
436	-400	36
		0

200+70+8=278

Solve the problem using the box method.

1 spider in each box. How many boxes can you use to hold 562 spiders?

$562 \div 1 = 562$

100 100 60 2

562	500	60	2
562	-500	62	2
		0	0

100+100+60+2=262

---

Which equation will have a higher quotient? Then solve it using the box method.

$98 \div 3$

100 10 8

98	90	8
98	-90	8
		0

100+10+8=118

---

Which equation will have a higher quotient? Then solve each equation using the box method to see if you were right!

$675 \div 3$

100 50 10 3

675	600	75
675	-600	75
		0

100+50+10+3=163

Which equation will have a higher quotient? Then solve each equation using the box method to see if you were right!

$96 \div 2$

$175 \div 4$

100 30 1

96	90	6
96	-90	6
		0

100+30+1=131

---

Solve the problem using the box method.

Each orange is cut into 5 slices. If there are 390 slices of oranges, how many oranges were cut?

$334 \div 3$

100 10 4

334	300	34
334	-300	34
		0

100+10+4=114

---

Which equation will have a higher quotient? Then solve each equation using the box method to see if you were right!

$346 \div 3$

$97 \div 2$

300 8

346	300	46
346	-300	46
		0

300+46=346

# Recording sheets to help your students stay organized

<p><b>Case #1</b></p> <p>Solve the problem.</p> $\begin{array}{r} 100 \\ -300 \\ \hline 56 \end{array}$ <p>Write an answer sentence.</p> <p>Were you right?</p>	<p><b>Case #2</b></p> <p>Identify the error and make corrections.</p> $\begin{array}{r} 100 \\ -300 \\ \hline 56 \end{array}$ <p>Describe the error.</p>
<p><b>Case #3</b></p> <p>Make your prediction.</p> <p>Solve it.</p> <p>Were you right?</p>	<p><b>Case #4</b></p> <p>Solve the problem.</p> <p>Write the answer.</p>
<p><b>Case #5</b></p> <p>Make your prediction.</p> <p>Solve the equations.</p> <p>Were you right?</p>	<p><b>Case #6</b></p> <p>Figure out the missing dividend.</p> $\begin{array}{r} 100 \\ -376 \\ \hline 196 \end{array}$ <p>How did you figure it out?</p>

<p><b>Case #7</b></p> <p>Solve the problem.</p> <p>Write the answer.</p> <p>Were you right?</p>	<p><b>Case #8</b></p> <p>Identify the error and make corrections.</p> $\begin{array}{r} 100 \\ -288 \\ \hline 88 \end{array}$ <p>Describe the error.</p>
<p><b>Case #9</b></p> <p>Make your prediction.</p> <p>Solve it.</p> <p>Were you right?</p>	<p><b>Case #10</b></p> <p>Solve the problem.</p> <p>Write an answer sentence.</p> <p>Were you right?</p>
<p><b>Case #11</b></p> <p>Make your prediction.</p> <p>Solve the equations.</p> <p>Were you right?</p>	<p><b>Case #12</b></p> <p>Figure out the missing dividend.</p> $\begin{array}{r} 100 \\ -578 \\ \hline 67 \end{array}$ <p>How did you figure it out?</p>

<p><b>Case #13</b></p> <p>Estimate.</p> <p>Solve the problem.</p> <p>Write the answer.</p> <p>How did you figure it out?</p>	<p><b>Case #14</b></p> <p>Identify the error and make corrections.</p> $\begin{array}{r} 100 \\ -300 \\ \hline 53 \end{array}$ <p>Write a story problem.</p> <p>Solve it.</p> <p>Were you right?</p>
<p><b>Case #15</b></p> <p>Figure out the missing dividend.</p> $\begin{array}{r} 100 \\ -300 \\ \hline 67 \end{array}$ <p>How did you figure it out?</p>	<p><b>Case #16</b></p> <p>Make your prediction.</p> <p>Solve the equations.</p> <p>Were you right?</p>

<p><b>Case #17</b></p> <p>Make your prediction.</p> <p>Solve the equations.</p> <p>Were you right?</p>	<p><b>Case #18</b></p> <p>Identify the error and make the corrections.</p> $\begin{array}{r} 100 \\ -453 \\ \hline 63 \end{array}$ <p>Were you right?</p>
<p><b>Case #19</b></p> <p>Make your prediction.</p> <p>Solve the equation.</p> <p>Were you right?</p>	<p><b>Case #20</b></p> <p>Solve the problem.</p> <p>Write the answer.</p> <p>Were you right?</p>
<p><b>Case #21</b></p> <p>Make your prediction.</p> <p>Solve the equations.</p> <p>Were you right?</p>	<p><b>Case #22</b></p> <p>Make your prediction.</p> <p>Solve the equations.</p> <p>Were you right?</p>

# Answer keys to make self-checking a breeze!

<p><b>Case #1</b></p> <p>Solve the problem.</p> $\begin{array}{r} 100 \\ -300 \\ \hline 56 \end{array}$ <p>Write an answer sentence.</p> <p>Answers will be correct.</p>	<p><b>Case #2</b></p> <p>Identify the error and make corrections.</p> $\begin{array}{r} 100 \\ -300 \\ \hline 56 \end{array}$ <p>Describe the error.</p>
<p><b>Case #3</b></p> <p>Make your prediction.</p> <p>Answers will vary.</p> <p>Solve it.</p> $\begin{array}{r} 100 \\ -300 \\ \hline 56 \end{array}$ <p>Were you right?</p>	<p><b>Case #4</b></p> <p>Solve the problem.</p> <p>Write the answer.</p>
<p><b>Case #5</b></p> <p>Make your prediction.</p> <p>Answers will vary.</p> <p>Solve the equations.</p> <p>Were you right?</p>	<p><b>Case #6</b></p> <p>Figure out the missing dividend.</p> $\begin{array}{r} 100 \\ -376 \\ \hline 196 \end{array}$ <p>How did you figure it out?</p>

<p><b>Case #7</b></p> <p>Solve the problem.</p> $\begin{array}{r} 100 \\ -288 \\ \hline 88 \end{array}$ <p>Write the answer.</p> <p>Answers will vary.</p>	<p><b>Case #8</b></p> <p>Identify the error and make corrections.</p> $\begin{array}{r} 100 \\ -288 \\ \hline 88 \end{array}$ <p>Describe the error.</p>
<p><b>Case #9</b></p> <p>Make your prediction.</p> <p>Answers will vary.</p> <p>Solve it.</p> $\begin{array}{r} 100 \\ -288 \\ \hline 88 \end{array}$ <p>Were you right?</p>	<p><b>Case #10</b></p> <p>Solve the problem.</p> <p>Write an answer sentence.</p> <p>Answers will vary.</p>
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