Mrs. B's Best

Division Strategies:
Partial Quotients

Fold-Up & Practice Resource

for
Students, Parents
and Teachers

Division Strategies: Partial Quotient Strategy

The new Common Core Standards for Math prompted me to create this Partial Quotient Strategy pack for use with students and with parents--yes, parents !

I will get to parents shortly, but first...Common Core stresses arming students with a variety of strategies to solve a problem. This includes division. Now, I'm an old-timer, and as an old-timer, I believe that every 5th grader should know how to do long division. I've spent countless hours trying to teach the algorithm to each and every student. The truth is, some kids JUST DON'T GET IT! Common Core gives the teacher permission to try teaching the concept using a different strategy. Amazingly, these struggling students seem to catch on fairly quickly to the Partial Quotient Strategy. Does it still bother me that they aren't using the long division algorithm? Yes, quite honestly it does, but I am slowly changing my thinking--us old-timers can be pretty set in our ways.

I do teach the Partial Quotient Strategy to all my students. I find that those who understand long division, will practice this new strategy with me, but revert to the long division algorithm when given the choice. This suits me fine.

Now for parents. At nearly every parent/teacher conference I had this year, I heard how challenging the math was. How the parents could not even help their child with their math because the way we are solving problems is 'not the way they learned it'. So, my thought for next year, is to have a math night. Invite parents into the classroom and show 'new' strategies such as this. I think the foldable would make a good resource and wouldn't solving the problems together be fun, lol? And, even if you aren't quite ready for a 'math night', just sending the foldable resource home would be beneficial.

If you would like to see pictures of this product, please stop by my blog... mrsbsbest.blogspot.com

Mrs. B

Division Strategies:
Partial Quotient Strategy

The Partial Quotient Strategy uses multiples of ten and place value to break the dividend into more easily divided parts.

Example One: $936 \div 4 =$

Write the equation in this format. ————————————→

Working with multiples of 100, think how many times can 4 go into 936? 100 times? 200 times? 300 times? 4 x 200 is 800. 800 is close to 936 without going over. Write 200 on the right side of the vertical line and subtract 800 from 936.

Next, think how many times will 4 go into the difference (136)? 100 times? No, 100 times would be too big. So, think multiples of 10. Will it go in 40 times? 30 times? 4 x 30 is 120. 120 is close to 136 without going over. Write 30 on the right side of the vertical line and subtract 120 from 136.

The difference (16) divides easily by 4 because 4 x 4 = 16. Write 4 on the right side of the vertical line and subtract 16.

To find the quotient, add all the numbers written on the right side of the vertical line. ————————————→

$$4 \overline{)936}$$
$$\underline{-800} \rightarrow 200$$
$$136$$
$$\underline{-120} \rightarrow 30$$
$$16$$
$$\underline{-16} \rightarrow 4$$
$$0$$

$$200 + 30 + 4 = 234$$
$$936 \div 4 = \boxed{234}$$

Example Two: $954 \div 6 =$

Write the equation in this format. ————————————→

Working with multiples of 100, think how many times can 6 go into 954? 100 times? 200 times? 6 x 100 is 600. 600 is close to 936 without going over. Write 100 on the right side of the vertical line and subtract 600 from 954.

Next, think how many times will 6 go into the difference (354)? 100 times? No, 100 times would be too big. So, think multiples of 10. Will it go in 60 times? 50 times? 6 x 50 is 300. 300 is close to 354 without going over. Write 50 on the right side of the vertical line and subtract 300 from 354.

The difference (54) divides easily by 6 because 6 x 9 = 54. Write 9 on the right side of the vertical line and subtract 54.

To find the quotient, add all the numbers written on the right side of the vertical line. ————————————→

$$6 \overline{)954}$$
$$\underline{-600} \rightarrow 100$$
$$354$$
$$\underline{-300} \rightarrow 50$$
$$54$$
$$\underline{-54} \rightarrow 9$$
$$0$$

$$100 + 50 + 9 = 159$$
$$954 \div 6 = \boxed{159}$$

Partial Quotient Strategy

Name _____ Date _____

Directions: Use the Partial Quotient Strategy to solve the following division problems. There will be NO REMAINDERS.

1. 6 | 672

2. 3 | 774

3. 4 | 936

4. 3 | 942

5. 7 | 602

6. 2 | 916

7. 2 | 982

8. 4 | 252

9. 5 | 845

10. $1465 \div 5 =$

11. $1368 \div 4 =$

12. $1262 \div 2 =$

Solve the following division problems using the Partial Quotient Strategy.
There WILL BE REMAINDERS.

13. $432 \div 5 =$

14. $961 \div 6 =$

15. $849 \div 4 =$

16. $784 \div 5 =$

17. $619 \div 3 =$

18. $538 \div 7 =$

Partial Quotient Strategy

Name __Key_____ Date _____

Directions: Use the Partial Quotient Strategy to solve the following division problems. There will be NO REMAINDERS.

1.
| 112 |

```
    112
6 | 672
  - 600    100
    72
  - 60     10
    12
  - 12     2
    0
```

2.
| 258 |

```
    258
3 | 774
  - 600    200
    174
  - 150    50
    24
  - 24     8
    0
```

3.
| 234 |

```
    234
4 | 936
  - 800    200
    172
  - 120    30
    16
  - 16     4
    0
```

4.
| 314 |

```
    314
3 | 942
  - 900    300
    42
  - 30     10
    12
  - 12     4
```

5.
| 86 |

```
    86
7 | 602
  - 560    80
    42
  - 42     6
    0
```

6.
| 458 |

```
    458
2 | 916
  - 800    400
    116
  - 100    50
    16
  - 16     8
```

7.
| 491 |

```
    491
2 | 982
  - 800    400
    182
  - 180    90
    2
  - 2      1
    0
```

8.
| 63 |

```
    63
4 | 252
  - 200    50
    52
  - 40     10
    12
  - 12     3
    0
```

9.
| 169 |

```
    169
5 | 845
  - 500    100
    345
  - 300    60
    45
  - 45     9
    0
```

10. $1465 \div 5 =$

$$
\begin{array}{r}
\boxed{293} \\
5\,\overline{)1465} \\
-\,1000 \quad 200 \\
\hline
465 \\
-\,450 \quad 90 \\
\hline
15 \\
-\,15 \quad 3 \\
\hline
0
\end{array}
$$

11. $1368 \div 4 =$

$$
\begin{array}{r}
\boxed{342} \\
4\,\overline{)1368} \\
-\,1200 \quad 300 \\
\hline
168 \\
-\,160 \quad 40 \\
\hline
8 \\
-\,8 \quad 2 \\
\hline
0
\end{array}
$$

12. $1262 \div 2 =$

$$
\begin{array}{r}
\boxed{631} \\
2\,\overline{)1262} \\
-\,1200 \quad 600 \\
\hline
62 \\
-\,60 \quad 30 \\
\hline
2 \\
-\,2 \quad 1 \\
\hline
0
\end{array}
$$

Solve the following division problems using the Partial Quotient Strategy.
There WILL BE REMAINDERS.

13. $432 \div 5 =$

$$
\begin{array}{r}
\boxed{86\ r2} \\
5\,\overline{)432} \\
-\,400 \quad 80 \\
\hline
32 \\
-\,30 \quad 6 \\
\hline
2
\end{array}
$$

14. $961 \div 6 =$

$$
\begin{array}{r}
\boxed{160\ r1} \\
6\,\overline{)961} \\
-\,600 \quad 100 \\
\hline
361 \\
-\,360 \quad 60 \\
\hline
1
\end{array}
$$

15. $849 \div 4 =$

$$
\begin{array}{r}
\boxed{212\ r\ 1} \\
4\,\overline{)849} \\
-\,800 \quad 200 \\
\hline
49 \\
-\,40 \quad 10 \\
\hline
9 \\
-\,8 \quad 2 \\
\hline
1
\end{array}
$$

16. $784 \div 5 =$

$$
\begin{array}{r}
\boxed{156\ r4} \\
5\,\overline{)784} \\
-\,500 \quad 100 \\
\hline
284 \\
-\,250 \quad 50 \\
\hline
34 \\
-\,30 \quad 6 \\
\hline
4
\end{array}
$$

17. $619 \div 3 =$

$$
\begin{array}{r}
\boxed{206\ r\ 1} \\
3\,\overline{)619} \\
-\,600 \quad 200 \\
\hline
19 \\
-\,18 \quad 6 \\
\hline
1
\end{array}
$$

18. $538 \div 7 =$

$$
\begin{array}{r}
\boxed{76\ r\ 6} \\
7\,\overline{)538} \\
-\,490 \quad 70 \\
\hline
48 \\
-\,42 \quad 6 \\
\hline
6
\end{array}
$$

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I promise I will correct the error in a timely manner and you will be allowed to re-download the product. Although I proofread my materials multiple times, I have no doubt there will be mistakes from time to time. I ask that before leaving negative feedback you give me the opportunity to fix the problem.

Again, thank you for your purchase! I look forward to hearing from you in the future.

Wishing You the Best,

Mrs. B