**Division**

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| **Partial Quotients****Question:** 550 ÷ 15**Sample Solutions:**  15**|**550 15**|**550 15**|**550  -150 10 -300 20 -450 30 400 250 100 -150 10 -150 10 -90 6 250 100 10 **36 r 10** -150 10 -75 5 100 25 -30 2 -15 1 70 10 **36 r 10** -30 2 40  -30 2 10 **36 r 10** |
| **Multiplying Up****Question:** 550 ÷ 15 **Sample Solution:** 15 x 10 = 150 15 x 20 = 300 15 x 30 = 45015 x 10 = 150 450 15 x 10 = 150 15 x 6 = 9015 x 10 = 150 15 x 5 = 75 15 x 36 = 540  15 x 2 = 30 480 15 x 1 = 15 **550 ÷ 15 = 36 r 10** 15 x 36 = 540 15 x 2 = 30 510  **550 ÷ 15 = 36 r 10** 15 x 2 = 30 540 15 x 36 = 540 + 10**550 ÷ 15 = 36 r 10** |

**Multiplication**

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| **Making Landmark or Friendly Numbers****Question:** 9 x 29**Sample Solutions:** 9 x 30 = 270 “that’s one group of 9 too much, so. . .”270 – 9 = 261Or9 x 25 = 225 “because 8 25’s is 200, so 1 more 25 is 225”9 x 2 = 189 x 2 = 18 and 18 + 18 = 36. 225 + 36 = 261 | **Partial Products****Question:** 4 x 115**Sample Solution:** 4 x 115 = 4 x 100 + 4 x 10 + 4 x 54 x 100 = 4004 x 10 = 404 x 5 = 20400 + 40 + 20 = 460  100 10 54 4 x 100 = 400 4 x 10=40 4 x 5=20 |
| **Doubling and Halving****Question:** 8 x 6**Sample Solution:** Doubling and Halving can help students relate facts that they are unsure of to facts with which they are fluent. Cut the 8 x 6 array in half on the dotted line. Move the bottom section to the top right to make a 4 x 12 array. I know that’s 48 because 4 x 10 = 40 and 4 x 2 = 8. 40 + 8 = 48

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 | **Breaking Factors into Smaller Factors****Question:** 8 x 25**Sample Solution:**  8 = 2 x 4 25 x 4 = 100 100 x 2 = 200, so 8 x 25 = 200 **25**4 x 25 = 100**4****4**4 x 25 = 100 |