

Mental Math for 5th Grade

Here are a few days' worth of mental math problems that I gave to my 5th grade Math Academy students, in the second half of the year. (Each lecture I typically give 8 problems.)

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|-----------------------------|-------------------------------|---|---------------------------------------|-------------------------------------|
| 1. 80×9000 | 1. 120×600 | 1. $6000 \times 90,000$ | 1. $40 \times 60,000$ | 1. reduce $\frac{6}{15}$ |
| 2. $16,000 \div 8$ | 2. $3600 \div 40$ | 2. $140,000 \div 700$ | 2. $120,000 \div 40$ | 2. $\frac{3}{4} \times \frac{5}{7}$ |
| 3. $27,000 \div 300$ | 3. $800,000 - 700$ | 3. $900,000 - 4000$ | 3. $5\frac{3}{4}$ as improper | 3. $\frac{4}{5} \div \frac{1}{3}$ |
| 4. Halfway b/t
18 and 28 | 4. Halfway b/t
120 and 190 | 4. Half of 57 | 4. $\frac{2}{7} \times \frac{3}{5}$ | 4. $\frac{3}{10} + \frac{2}{5}$ |
| 5. $73 - 14$ | 5. Half of 350 | 5. What is $\frac{42}{5}$ as a
mixed number? | 5. Give remainder
of $863 \div 10$ | 5. Is 5223
divisible by 9? |
| 6. Half of 860 | 6. $\frac{1}{3}$ of 1800 | 6. $\frac{3}{7} \div \frac{1}{2}$ | 6. Give remainder
of $429 \div 5$ | 6. Halfway b/t
11 and 14 |
| 7. $80,000 - 60$ | 7. $400 - 13$ | 7. $600 - 92$ | 7. $73 - 25$ | 7. $810 - 60$ |
| 8. $345 + 990$ | 8. $258 + 645$ | 8. $391 + 857$ | 8. $526 + 477$ | 8. Double 453 |

for Students (in Grades 3-5) with a Weak Sense of Number

Here is an exercise that can help students who have a weak sense of number.

Practice counting backwards and forwards by 1's, 10's, 100's, and 1000's, but starting at large numbers. With the below examples, don't write "...", but actually writes all the in-between numbers. Also, I am counting up to 5000 each time just for means of comparison. You should count up to different numbers each time, and slowly work up to even larger numbers, such as 3,000,000.

- Counting by 1's
4970, 4971, 4972...4995, 4996, 4997, 4998, 4999, 5000.
Then do the same thing backwards
Then ask this: what is $5000 - 3$, or $5000 - 8$, or $5000 - 13$, etc.
- Counting by 10's
4760, 4770, 4780, 4790, 4800, 4810...4950, 4960, 4970, 4980, 4990, 5000.
Then do the same thing backwards
Then ask this: what is $5000 - 30$, or $5000 - 80$, or $5000 - 130$, etc.?
- Counting by 100's
3700, 3800, 3900, 4000...4500, 4600, 4700, 4800, 4900, 5000.
Then do the same thing backwards
Then ask this: what is $5000 - 300$, or $5000 - 800$, or $5000 - 1300$ etc.?