

Tutorial Session Notes

Grade 5

Quarter #2 (Week 9-16)

About these notes:

- These notes are primarily for those who are acting as the tutor – either a parent or a class teacher.
- In the first year of JYMA, Maria (our JYMA tutor) and I met every week and talked about grades 5-8, and we made a list of suggested topics for the Friday tutorial session.
- In order to support those who are acting as the tutor for their child or a whole class, I am sharing these notes with those who are acting as the tutor.
- Of course, these tutorial sessions are also an opportunity for the students to ask their tutor questions.
- If you are acting as the tutor, it may be helpful to read the section of the JYMA Handbook titled “The Role of the Tutor”.

Week #9

- Group assignment string problem: dividing a string into various parts
 - Ask how they did 5 and 10, and discuss possible methods.
- Practice problems - do together using shortcut
 - 93×48
 - 245×76
- Prime numbers (from the group assignment)
 - Here are the primes less than 150:
2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103, 107, 109, 113, 127, 131, 137, 139, 149.
 - Check what they came up with for a list of prime numbers; see if it's correct.
 - Note that we haven't yet done the divisibility rule for 3's. **Don't give this away!!**
 - If there are any errors in their list, give them hints – e.g., “Two of your numbers on the list are divisible by 3.”, or “You missed writing down a prime number that is between 60 and 80.”
 - If their list is correct, and there is still time left, find a few primes over 100.

Week #10

- Give 2 or 3 measurement conversion problems similar to what was in the group assignment.
- Ask if there any questions about any of the measurement tables they did in group work
- Ask what they got for divisibility trick for 9.
- Answer this question: Is 4,725 divisible by 9? Use both division to show that there is no remainder, and then use the new trick. Then ask the question, what else does this tell us? (Answer: that 9 is a factor of 4,725, and that 4,725 is in the 9's table)
- If extra time, try to find the only prime number that is between 200 and 220. (Answer: 211)

Week #11

- **Most important:** Simple measurement conversions
 - Several simple problems, like those I did in the lecture today (Wed, lecture #2), such as:
 - 4 ft = ___ in
 - 2 gallons = ___ pints
 - 64 inches = ___ ft (answer: $5\frac{1}{3}$ ft)
- Ask if any questions from homework.
- Dividing numbers with lots of zeroes:
 - Note: $12,000 \div 2,000$ was done for mental math in the lecture.
 - 1) $800 \div 200$
 - ask how many 200s do I add in order to get 800?
 - 2) $180 \div 60$
 - 3) $24,000 \div 3,000$
 - 4) $15,000 \div 500$
- Ask them to make a really large number that's divisible by 9, and then they can share their number with others in the group, and then check each other's numbers to ensure it is divisible by 9.

Week #12

- **Division with zeroes**
 - Examples:
 - $2,400 \div 300$
 - $15,000 \div 5$
 - $12,000,000 \div 400$
 - Perhaps give some others
 - Ask: did they discover the shortcut of crossing off zeroes?
- **Four's Divisibility trick.** Ask about how they did with groupwork for 4's divisibility trick.
- **Fact families**
 - If they know $200 - 13 = 187$, then what are the other three things we know?
 - Answer: $200 - 187 = 13$; $187 + 13 = 200$; $13 + 187 = 200$
 - Do other easier ones like the above.
 - Here's a harder one:
 - Calculate $75 * 235$ (Answer is = 17,625)
 - What are the other three members of this fact family?
- **Measurement Conversions.** Do a few simple problems similar to what was on homework

Week #13

- **Division with zeroes**
 - Examples:
 - $32,000 \div 8,000$
 - $440,000 \div 11$
 - $40,000 \div 8$
 - $5,400,000 \div 90,000$
 - Perhaps give some others
- **Divisibility**
 - Is 853,604,730 Divisible by 2,3,4,5,9,10?
- **Remainders.** With each division problem, just give the remainder.
 - $331 \div 4$ (The remainder is the same as for $31 \div 4$)
 - $331 \div 5$ (Just look at the last digit.)
 - $331 \div 3$ (divide sum of digits by 3, whatever the remainder is for that is remainder for whole number.)
 - $331 \div 9$ (divide sum of digits by 9, whatever the remainder is for that is remainder for whole number.)
 - $4,637 \div 4$
 - $4,637 \div 5$
 - $4,637 \div 3$
 - $4,637 \div 9$
- **Puzzle.** If extra time, go over puzzle problems from group work.

Week #14

- Make sure they understand the Tuesday group assignment (division with even #s and odd #s, etc.).
- Division with zeroes. Do these 3 problems:
 - $330,000 \div 11$
 - $480 \div 60$
 - $1,500,000 \div 3,000$
- Remainder problems. Ask what the remainder is with each of the below division problems. (You don't have to do the division.)
 - $8,425 \div 9$ (answer = 1)
 - $17,471 \div 4$ (answer = 3)
 - $853 \div 5$ (answer = 3)
 - $7,486 \div 5$ (answer = 1)
- Division circles. For each one, give them the first one, and they should complete the rest of the circle.
 - $41 \div 7$ (The rest of the circle is $5r6$; $5 \frac{6}{7}$; $\frac{41}{7}$)
 - $4 \frac{3}{5}$ (The rest of the circle is $\frac{23}{5}$; $23 \div 5$; $4r3$)
- Ask how much of the puzzles they were able to do. Go over some of them, if there is time.
- If there is extra time, practice a long multiplication problem, such as 45×84 .

Week #15

- GCF and LCM
 - Trying to look at the two numbers, and develop more intuition about what the GCF and LCM will be, without writing everything out all the factors and multiples of both numbers.
 - For GCF: Have them guess the biggest factor
 - For LCM: Instead of listing both tables, list one until see what other one goes into
 - Do these:
 - 40 and 25
 - 18 and 12
 - 13 and 7
- Fractions:
 - Find equivalent fractions for $\frac{5}{6}$
 - point out how the table for 5 and 6 can help do that.
 - Reduce:
 - $\frac{8}{12}$
 - $\frac{12}{32}$
 - $\frac{125}{200}$
 - Add and subtract fractions
 - $\frac{2}{7} + \frac{4}{7}$
 - $\frac{1}{2} + \frac{1}{8}$
 - $\frac{7}{12} - \frac{3}{8}$
- Division Circle.
 - Start with the one that is given, and then figure out the other three parts of the division circle
 - Do these:
 - $18 \div 7$
 - Answer: $2r4 \rightarrow 2\frac{4}{7} \rightarrow \frac{18}{7}$
 - $5 \frac{2}{3}$
 - Answer: $\frac{17}{3} \rightarrow 17 \div 3 \rightarrow 5r2$
 - $\frac{73}{10}$
 - Answer: $73 \div 10 \rightarrow 7r3 \rightarrow$
- (If extra time) Flexible Long Division
 - $1,416 \div 8$
- Ask about puzzles how they did with the group work puzzles.

Week #16

- Practice division problems. We just went through a whole process to discover the trick for dividing fractions. So now, just use the short cut; don't try to explain it. Do these problems:
 - $7 \div 1/3$
 - $7 \div 2/3$
 - $1/2 \div 1/6$
 - $1/3 \div 3/5$
 - $2/5 \div 5/8$
- Four processes. Do these:
 - $5/6 + 3/8$
 - $5/6 - 3/8$
 - $5/6 \times 3/8$
 - $5/6 \div 3/8$
- Division circle:
 - $23/6$ Give the rest of the circle. (Ans: $23 \div 6$, $3r5$, $3\frac{5}{6}$)
- Flexible long division
 - $644 \div 7$
 - Challenge! $80,820 \div 12$
- If time, do these:
 - 36×47
 - 524×638