Hello! Welcome to Ponder TMSCA! We are so glad you are with us! Let’s start first with what exactly TMSCA is. The letters themselves stand for Texas Math & Science Coaches Association. It is a junior high and high school based academic association, which allows students from grades 5-12 to compete in local and state TMSCA academic meets in the areas of:

- **Number Sense;** (10 minute, 80-question math test based on memorized Number Sense tricks. No scratch work allowed).
- **Calculator;** (30 minute, 80 question math test done solely on a scientific calculator.)
- **Mathematics;** (40 minute, 50 question multiple choice test, based on various junior high and high school level mathematics)
- **Science;** (40 minute, 50 question multiple choice test, based on various junior high and high school level science questions).

Our 5th grade team will compete in **only** the areas of:

- **Number Sense**
- **Calculator**
- **Science**

Our team competes side by side with the Ponder Junior High TMSCA team at TMSCA junior high meets. We attend 4-6 meets each year beginning normally in November and concluding normally in March. Meets are always on Saturday mornings. They begin at 9:00 a.m. and we leave the school at 7:00 a.m. on the bus for travel to the meets. All meets are out of town. We will send the meet schedule once we have received it from TMSCA.
Considering the level of difficulty of the tests the kids will be competing on, we like to start early with our practices. **We will begin meeting for practices this year on Wednesday July 19th from 3:30-5:30 at the Elementary and after the school year starts we will meet on Wednesdays from 3:30-4:30 at the Elementary.** We will not meet during the week of UIL Camp this summer. We encourage our team to attend the UIL camp, as it is a great chance for them to get in extra time with Mr. Ruiz and his help with Number Sense tricks.

Between now and July 19th we would like for your child to check out the attached links to get a look at the tests they will be competing on in TMSCA.

**2016-2017 CALCULATOR TESTS:**

https://drive.google.com/drive/folders/0B5QPTGVeYvZ2enl1ZzhaQ3ZoZE0?usp=sharing

**2016-2017 NUMBER SENSE TESTS:**

https://drive.google.com/drive/folders/0B5QPTGVeYvZ2TW45OUdtbEpmV00?usp=sharing

**It would be a good idea to practice on the Number Sense tests** on those links as much as possible. Learning Number Sense tricks will ultimately help them with their regular math classes as well. We have also included here two Number Sense Trick Sheets that we will work with the entire year. See the next two pages for NS tricks. **You will likely want to print these for your child:**
### Multiplying by 50
1. Divide the other number by 2
2. Multiply by 100
Ex: 64 x 50 =
   \[ \frac{64}{2} \times 100 = 3200 \]

### Multiplying by 53
1. Divide the other number by 3
2. Multiply by 100
Ex: 93 x 33 =
   \[ \frac{93}{3} = 31 \]
   \[ 31 \times 100 = 3100 \]

### Squaring a Number 40-49
1. 50 – the #
2. Answer to (1) squared, take up 2 places, write it down
3. 25 minus answer to (1) write it down
Ex: 47² =
   \[ 50 - 47 = 3 \]
   \[ 3² = 9 \] so write 09
   \[ 25 - 3 = 22 \]
   \[ \text{Answer} = 2209 \]

### Multiplying by 66
1. Divide the other number by 3
2. Multiply by 2
3. Multiply by 100
Ex: 86 x 81 =
   \[ \frac{86}{3} = 28.666... \]
   \[ 28.666... \times 2 = 57.333... \]
   \[ 57.333... \times 100 = 5733.333... \]

### Finding Remainder when \( \div 4 \) or \( \div 8 \)
1. Look at last 2 digits
2. Divide by 4 or 8
Ex: 12456
   \[ 124 \div 4 = 31 \]
   \[ 56 \div 8 = 7 \]
   \[ \text{Remainder} = 7 \]

### Finding Remainder when \( \div 3 \)
1. Add all the digits together
2. Divide by 3
Ex: 12345
   \[ 1+2+3+4+5 = 15 \]
   \[ 15 \div 3 = 5 \]
   \[ \text{Remainder} = 0 \]

### Adding Consecutive Odd Numbers
\[ \frac{n(n + 2)}{2} \]
Ex: 1 + 3 + 5 + 7 + ... + 15
   \[ \frac{n(n + 2)}{2} = \frac{15(15 + 2)}{2} = 120 \]

### Adding Consecutive Even Numbers
\[ \frac{n(n + 2)}{2} \]
Ex: 2 + 4 + 6 + 8 + ... + 20
   \[ \frac{n(n + 2)}{2} = \frac{20(20 + 2)}{2} = 220 \]

### Adding Fractions
\[ \frac{1}{2} + \frac{1}{3} = \frac{5}{6} \]

### Multiplying 2 # close to 100, 1 above and 1 below
1. Multiply the differences between each # and 100
2. Subtract 1 from 100. Write this down (needs to be 2 place value)
3. Take the difference of the # over 100 and subtract it from the difference of the number under 100. Add this to 99. Write it down
Ex: 104 98
   \[ 4 \times 9 = 36 \]
   \[ 100 - 98 = 2 \]
   \[ 4 - 2 = 2 \]
   \[ 99 + 2 = 101 \]
   \[ \text{Answer} = 10198 \]
### Roman Numerals

<table>
<thead>
<tr>
<th>Roman</th>
<th>Arabic</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
<td>One</td>
</tr>
<tr>
<td>V</td>
<td>5</td>
<td>Five</td>
</tr>
<tr>
<td>X</td>
<td>10</td>
<td>Ten</td>
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<tr>
<td>L</td>
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<td>Fifty</td>
</tr>
<tr>
<td>C</td>
<td>100</td>
<td>One Hundred</td>
</tr>
<tr>
<td>D</td>
<td>500</td>
<td>Five Hundred</td>
</tr>
<tr>
<td>M</td>
<td>1000</td>
<td>One Thousand</td>
</tr>
</tbody>
</table>

A line over a Roman Numeral indicates multiplication by 1000.

### Multiplying by 101

- **Remember, you may have to carry to the next digit.**
- **Example:**
  - **Ex. 101 x 24 = 2424** (write down the number twice)

### Multiplying by 111

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 111 x 25 = 2825**

### Multiplying by 125

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 125 x 46 = 5825**

### Multiplying by 28

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 28 x 12 = 336**

### Multiplying by 75

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 75 x 32 = 2400**

### Multiplying by 100

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 100 x 123 = 12300**

### Multiplying by 500

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 500 x 123 = 61500**

### Multiplying by 1000

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 1000 x 123 = 123000**

### Multiplying by 10000

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 10000 x 123 = 1230000**

### Multiplying by 100000

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 100000 x 123 = 12300000**

### Multiplying by 1000000

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 1000000 x 123 = 123000000**

### Multiplying by 10000000

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 10000000 x 123 = 1230000000**

### Multiplying by 100000000

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 100000000 x 123 = 12300000000**

### Multiplying by 1000000000

- **1st digit + 1 more = 2nd digit + 1 more = 3rd digit**
- **Example:**
  - **Ex. 1000000000 x 123 = 123000000000**

### Squares From 10

- **Example:**
  - **Ex. 10 x 10 = 100**

### Cubes from 10

- **Example:**
  - **Ex. 10 x 10 x 10 = 1000**

### Diphthong

- **Example:**
  - **Ex. 10 x 10 x 10 x 10 = 10000**

### Double and Half Method

- **Example:**
  - **Ex. 10 x 10 x 10 x 10 = 10000**

### Distribution Property

- **Example:**
  - **Ex. 10 x 10 x 10 x 10 = 10000**

### Multiplicative Inverse

- **Example:**
  - **Ex. 10 x 10 x 10 x 10 = 10000**
This **Math Ninja** video link explains the Number Sense tricks on short instructional videos *(Just go to the mid section of the page and select Pages 5 through 25 or Pages 26 through 46---by selecting “View Page”)*:

http://mathninja.org/math-team/number-sense-video-lesson-and-workbook/

**THESE VIDEOS ARE AWESOME—AND SHORT. They explain the tricks easily. One of the most repeated phrases last year to our team was **WATCH MATH NINJA VIDEOS!** We hope this team will **WATCH MATH NINJA VIDEOS a lot!** These trick sheets and the Math Ninja videos are great ways that your child can begin memorizing Number Sense tricks now before July 19th when we start to test them on these Number Sense tests. They will want to pay particular attention to memorization of the Squares to 30 and memorization of Roman Numerals. Have fun memorizing!**
They will need to wait to work on the calculator tests when we can meet for practice time, unless they have someone at home, with previous TMSCA experience, that can help them start the calculator tests for practice too—**that would be great!** We love to have older TMSCA kids helping the younger ones. During class time we have older TMSCA kids tutor our younger ones. It is a win-win, in keeping our older kids involved as well as teaching our younger ones new skills. They will need to have their calculator with them at every practice and at every meet. TMSCA requires the use of this particular calculator:

**HP35s Scientific Calculator**

(We recommend purchasing on Amazon for approximately $50. Finding this calculator at a local Best Buy or other local stores can be very difficult.)

**NO VARIATIONS ON TYPE OF CALCULATOR.** TMSCA does not play about the type of calculator that must be used. **The students will need to remember to keep up with their calculator at all times and bring them every time we meet.** Calculators cannot be shared. Each child must have their own. Forgetting your calculator is like forgetting your bat to baseball practice, you will probably sit out a lot. **PLEASE DON’T FORGET YOUR CALCULATORS.**
Two things essentially help make TMSCA successful for the students:

1. **Home practice.** We only meet once a week. During that once a week practice we go over three subjects, Number Sense, Calculator and Science. Considering that, we just don’t have a lot of class time to go over our subjects in great detail. It is crucial for the students to practice their skills at home, like they would on any other team, if they intend on doing well at the meets. Practicing at home really makes all the difference.

2. **Parent involvement.**

   The level of difficulty in the competition areas are pretty intense. It will take practice and lots of help from parents to walk them through these tests as much as possible. Specifically working with them on Number Sense tricks, repetition practice on calculator tests and talking out the questions on the science tests, help them so much. They will need a cheerleader to convince them that they can do this and someone to work it all out with them-even after our class practice time.

   Our 5th grade team will also need all the parent help it can get at the meets themselves. We will be in need of graders as well as chaperones. The meets themselves are quite large, some with over 900 students attending (not including coaches and parents). It is wisdom to have as many adults with us as possible as we attend these large meets, (especially considering we are taking the youngest of all children attending, 5th graders). Your children will not only be competing on a junior high level, they will also be competing against 5A & 6A schools for the most part. The school buildings themselves are large and it is often necessary for parents to help our group of students navigate through these big districts. As you can imagine, the students at these 5A & 6A schools are quite talented, so we will need to practice big time at school practice, as well as at home, to succeed at our best!
So far, we have 17 students interested and/or signed up for our TMSCA 5th grade team:

1. John McEwen
2. Mason Greene
3. Brody Greene
4. Landon Hardin
5. Illiana Gonzales
6. Sean Akins
7. Nolan Durrett
8. Faith Hooper
9. Kam Bielss
10. Elijah Gader
11. Xavi Smith
12. Bryson Smith
13. Austin Vanzuiden
14. Willie Norwood
15. Presely Calhoun
16. Kale Jones
17. Charles Johnson

For more specific TMSCA info you can check out their site at:

Tmsca.org

No doubt, we have sent you a lot of initial information on TMSCA. We felt it was necessary to get you all fully on the page as to what TMSCA itself is. It may seem scary now, but in the long run it won’t. Our Ponder kids have an amazing opportunity to advance in math and science beyond some of our peer districts. We are very fortunate to have this type of enrichment focus in our school. TMSCA students in grades 6-12 are able each year to advance to state competition in San Antonio. It is an amazing chance for our kids to really spread their wings academically and compete with other students from all over this big state of Texas.
Over the recent years, TMSCA has become very popular in our town, especially in junior high. We must tell you now that being on the 5th grade team of TMSCA does not insure a spot for your child on the 6th grade TMSCA team. That team selection is based on several factors like teacher recommendation, classroom performance and behavior. Being in TMSCA, like any other team, is a privilege and we hope that our kids realize that. Participation interest has grown so much that in addition to the other selection factors, next year in the junior high, the kids will have to take a try-out test to even be eligible for TMSCA. Your child’s time and hard-working commitment in 5th grade TMSCA should ultimately help with that try-out test.

Sponsor/coaches for 5th grade TMSCA are:

Joey Arterberry (405) 990-4108
Christy Hooper (940) 391-3113
Jessica Tipton (817) 458-6214

Should you have questions at any time, please feel free to contact us.

We look forward to an exciting year with your smart, wonderful, talented 5th grader! Go Ponder Lions! See you all July 19th!