Important notice.

Mark the date: **Jan. 18, 2020** for the math league contest! Please confirm your participation in the first week of the spring semester.

Jan 18 Contest at St Michaels School

mathleague.org is pleased to announce that it will be hosting a math contest on Saturday Jan 18, 2020 for students in grades 3 through 6. Testing will consist of Sprint, Target, Number Sense, and Team rounds. The approximate schedule will be as follows:

- 08:00 AM Doors open; please do not enter the building before this time
- 08:00 AM to 08:30 AM Check-in open
- 08:30 AM to 11:00 AM Testing
- 11:00 AM to 11:30 AM Break
- 11:30 AM Awards (usually wraps up within half an hour)

The contest is located at **602 N Wilmot Road** (St Michaels School) in Tucson.

Sunrise Dr. Elementary School will cover the registration fees for mathleague club members. So it is **free** to attend the contest. We strongly encourage that all mathleague club members attend the contest. For parents, you may stay at the site as volunteers for grading, etc. or pick up your kids before 11:20am.

Now we have a web for the club https://www.math.arizona.edu/~nhao/outreach.html

Some exercise sheets will be uploaded to the web during the winter break.

If you have any comments and suggestions, please send them to Ning Hao via ninghao008@gmail.com.

Number Sense.

Part 1 of the mathleague contest will be number sense, which consists of 80 questions. Students have 10 minutes to answer the questions, earn 5 points for each correct answer, and lose 4 points for each wrong or skipped the answer.

The difficulty of the following exercises is about the same as the first 30 questions in the number sense part.

The expectation for 3rd graders is to answer first 10 questions correctly within 10 minutes.

The expectation for 4th graders is to answer first 20 questions correctly within 10 minutes.

Of course, some of our students can do even better.

A weakness of some of our students is **mental division**. It will be helpful if the parents can help kid to work on division problems. You may download working sheet here https://www.k5learning.com/free-math-worksheets/fourth-grade-4/mental-division

Number Sense Sample I.

1. 37-14 = _____

2. 15+9 = _____

3. 9×7= _____

4. 64÷8= _____

5. 22+58= _____

6. 32×5= _____

7. What is the hundreds digit of 4258? _____

8. 36×11=_____

9. What is the remainder of 53÷7? _____

10. (Estimate) 1997+2015+3982=_____

11. Round 12.75_____(whole number)

12. 16^2=_____

13. 216÷8=_____

14. 117+283=_____

15. LXXVI in Arabic numerals is_____

16. 16×45=_____

17. 2×1+9×10+7×100+8×1000=_____

18. 14×13=_____

19. Round 4321 to the nearest ten. _____

20. (Estimate) 95×106=_____

21. The GCD of 78 and 42 is _____

22. 18×33÷27=_____

23. 65^2=_____

24. 7 nickels + 9 pennies = _____(cents)

25. $\frac{6}{15}$ in lowest terms is _____(fraction)

26. $\frac{3}{5}$ =_____(decimal)

27. If 1 mile is equal to 5280 feet then 2 miles are equal to _____ feet.

28. 21×25=_____.

Number Sense Sample II

1. 25-13 = _____
2. 21+19 = _____
3. 3×9= _____
4. 54÷6= _____
5. 77+33= _____
6. 22×5= _____
7. What is the hundreds digit of 5329? _____
8. 54×11= _____
9. What is the remainder of 132÷9? _____
10. (Estimate) 85+95+105+115= _____
11. Round 27.48_____(whole number)
12. 32×25= _____
13. 750÷15= _____
14. 157+743= _____
15. 222-58+46= _____
16. 36×55= _____
17. 2×1+1×10+9×1000= _____
18. 12×17= _____
19. Round 2577 to the nearest ten. _____
20. (Estimate) 19×20×21= _____
21. The GCD of 21 and 56 is _____
22. Eight minutes is _____ seconds.
23. 35^2= _____
24. The perimeter of a square with a side of length 4 is _____
25. $7.06×10^3$= _____
26. 19^2= _____
27. Which is smaller $\frac{2}{5}$ or $\frac{3}{7}$? _____ (fraction)
28. $\frac{27}{50}$ = _____(decimal)
29. 50×22= _____   30. (Estimate) 4444+333+22+1= _____

Word Problems.

There will be 8 word problems to answer in target round. Some of these word problems are quite challenging. Nevertheless, some 3rd graders can answer 1 to 2 word problems and some 4th grader can answer 1 to 3 word problems.

Here are some samples.

1. December 21, 2019 was a Saturday. What day of the week was December 5, 2019?
2. Jim bought 6 apples for $3. If Dan bought 15 apples at the same price per apple, how many dollars change did he receive after paying with a $20 bill? Express your answer as a decimal to the nearest hundredth.
3. Alex has twice as many Pokemon as Peter. Peter has three times as many as Pokemon as Paul. If altogether they have eighty Pokemon, how many Pokemon does Peter have?
4. On a weekday, Linda sleeps for nine hours and goes to school for eight hours. If Linda spends one sixth of her remaining time swimming, how many minutes does she spend swimming?
5. There are 6 different book in a row on a shelf. In how many ways can Bobbie select 2 books which are not next to each other?
6. In how many distinct ways can the letters in the word TIMMY be arranged?
7. Trevor picked a number and then told Tim the number he picked. Tim tripled Trevor's number and told Sophie his result. Sophie subtracted twenty two from Tim's result and then told Vikki her result. Vikki divided Sophie's result by five. Vikki's result was ten. What was Trevor's original number?
8. Sixteen more than a number is five less than fifty. What is the number?
9. What is the smallest number n such that 1+3+5+…+n>250?