Rockdale Magnet

MATH TEAM

4A State Champions
2003, 2004, 2005, 2007, 2008, and 2009
Overall State Champions
2004 and 2005

Information Brochure

Edwin White, Captain
Jonathan Johnson and Aaron Roberts, First Officers

Dr. Chuck Garner, Sponsor

The members of the Math Team are constantly practicing, testing, and improving their mathematical problem-solving skills through contests and tournaments.

- CONTESTS. The contests are done at the school and the students' papers are mailed in to be scored. In the 2007-2008 and 2008-2009 school years, the Rockdale Magnet Math Team earned First Place in the state-wide Georgia Math League contest, and First Place in the nation-wide Atlantic-Pacific Math League contest.
- TOURNAMENTS. The tournaments are on Saturdays throughout the school year and occur at various high schools and universities around the southeast. We regularly attend the math tournaments at UGA, Georgia Tech, and Mercer, among others. We participate in a total of 13 tournaments each school year.
- THE ROCKDALE MATH COMPETITION. Being a member of the Rockdale Magnet Math Team also provides a unique opportunity for our students as they organize and host the annual Rockdale Math Competition. Over 500 students from across Georgia and Alabama attended annually. This year's Competition is set for December 12, 2009.

Rockdale Magnet Math Team students are among the best mathematics students in the state.

- ALWAYS COMPETITIVE. Since our inception, the Rockdale Magnet Math Team has always qualified for the state math tournament. We have been 4A champions six times, and overall champions twice.
- GEORGIA ARML. The best 35 students from around the state are selected each year to represent the state of Georgia at the national math tournament, the American Regions Math League (ARML). Each year, at least two Rockdale Magnet Math Team students have been selected. The Georgia ARML team is consistently in the top 25 teams in the world, placing in the top 10 for fifteen of the last twenty years.
- COLLEGE CHOICE. Former Rockdale Magnet Math Team students are now attending Georgia Tech, MIT, Harvard, and UNC, among other universities. Other former Math Team students have graduated from Georgia Tech, MIT, Duke, Vanderbilt, and Stanford.

The American Mathematics Competition

The American Math Competition (AMC) is given every February. This national contest is now in its 61st year and requires students to be adept at mathematical problem-solving to be successful. Some colleges (such as Duke and MIT) ask not only for students' SAT scores, but also for AMC scores. Over half-a-million high school students take the AMC annually. Every student in the Magnet school participates in the AMC, but only the students on Math Team receive intense preparation for it! Rockdale Magnet Math Team students regularly score in the top 10% nationwide, and some score in the top 1%.

For more information about the AMC, visit `www.unl.edu/amc`.

Why should a student join Math Team?

- IMPROVE TEST-TAKING SKILLS. It is no coincidence that *every* Magnet student that has scored a perfect 800 on the math portion of the SAT is a member of the Math Team.
- EARN MONEY BY BEING A TUTOR. Math Team students are eagerly sought out and hired to be math tutors. In fact, all Math Team students are encouraged to tutor.
- OPPORTUNITIES FOR SCHOLARSHIPS. The national math honor society, Mu Alpha Theta, offers scholarships for strong math students. All universities that host a math tournament also offer scholarships to the top scoring students. The American Mathematical Society holds a contest at their annual meeting in which high school students vie for a $2000 cash prize and matching scholarship.
- GET INVOLVED. In a recent issue of *Social Science Research*, a team at the University of Illinois concluded that students who are described as "conscientious, motivated, and able to relate well to peers" earn an average of $3000 more per year than students with similar test scores and weaker social skills. How were these students helped? According to the study: by joining in team activities and clubs.
- BECOME A BETTER PROBLEM-SOLVER! In a 2007 *Business Week* article, mutual fund managers, investment banks, and other financial institutions are paying six-figure starting salaries to students who can problem-solve. How does one prove problem-solving ability? According to the article: by winning math competitions!
- HAVE FUN! The students on the Math Team have lots of fun! There is more to Math Team than math and problem-solving — there are the overnight trips, the lunches at tournaments, and the social interaction at the meetings.

Some Testimonials.

- KATHRYN DANIEL, 2009 graduate, former team Captain, currently attending Georgia Tech: "Not only did math team make me a smarter person, but it also built most of my resume, self-confidence, and close relationships with my teachers and friends."
- KATHRYN JOHNSON, 2009 graduate currently attending UGA: "Math team has not only given me math skills that are very useful, but it has also helped my communication and leadership skills and these have definitely helped in my other endeavors outside of the classroom."
- ASHLEY JACKSON, 2009 graduate currently attending Wesleyan: "Math team helped me understand who I was, and what I was interested in. Overall, it helped me become who I am."
- SAM BROTHERTON, 2008 graduate, former team Captain, currently attending Harvard: "I think that my Math Team accomplishments really impressed the interviewer and admissions people, and it's that stuff that got me in."

Try some sample Math Team problems!

These problems are appropriate for the Junior Varsity Math Team. JV Math Team is for any student in the ninth or tenth grade. (The Varsity division is for everyone else.)

1. If the average of 5 numbers is 24 and the average of just 4 of those numbers is 30, then what must one of the numbers be? *From the 2004 Armstrong Atlantic University Math Tournament*
2. How many of the integers from 5 to 1505 are divisible by 10 but not by 25? *From the 2005 Mercer University Math Tournament*
3. An isosceles triangle with sides 17, 17, and 16 is inscribed in a circle. If the circumference of the circle is a reduced fraction of the form $\frac{m\pi}{n}$, then find the value of $m+n$. *From the 2007 Rockdale Math Competition*
4. Adam, Ben, Charlie, Debbie, Don, Jack, Steve, and Tom are to sit around a circular table. In how many distinct arrangements can they sit around the table if Don and Debbie must sit next to each other? *From the 2008 State Math Tournament*
5. A triangle has two sides whose lengths are 9 and $\sqrt{7}$. If the length of the third side is an integer, find the sum of the largest and smallest possible values for the third side of this triangle. *From the 2003 Lassiter High School Math Tournament*
6. Find the smallest integer $n > 10$ such that the fraction $\dfrac{71}{7n+1}$ is reducible. *From the 2006 Georgia Tech Math Tournament*

For a complete record of our accomplishments,
visit the Math Team website:
`http://web.me.com/drcgarner/MathTeam`

For more information about the Math Team,
please contact our sponsor, Dr. Garner (`cgarner@rockdale.k12.ga.us`)
or our Captain, Edwin White (`efw1992@yahoo.com`)
or our First Officers,
Jonathan Johnson (`jonathan.m.johnson3@gmail.com`)
and Aaron Roberts (`aaronmroberts1@gmail.com`).

ANSWERS: 1. 0 2. 120 3. 304 4. 1440 5. 18 6. 81