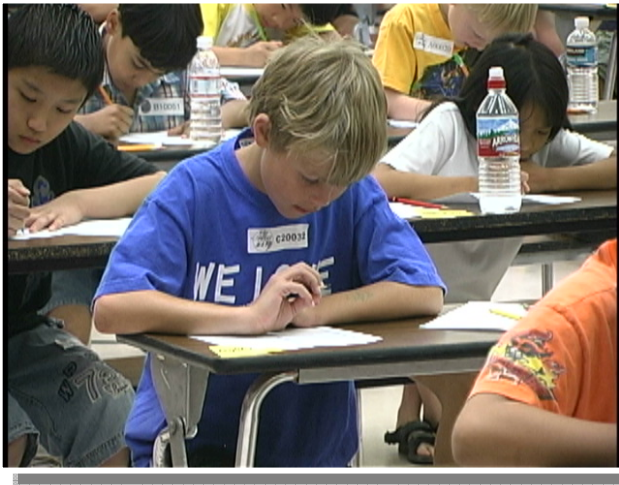


## INSIGHT IQ ABACUS

“Mathematician”, “actuary” and “statistician” are ranked the top 3 of the country’s best jobs, according to the December 2008 report by *JobsRated.com*. Therefore, mathematics is increasingly important in our technological and scientific age. Taking enough mathematics in school is the gateway to jobs and careers of all kinds, even those that not explicitly mathematical, scientific or technological. IQ Abacus’ goal is to help students be proficient in mathematics at school *and beyond*. Our students are not only fluent in computations, they learn comprehensively in all math strands. In addition to the set curriculum, we believe that competitions challenge and inspire students to want to learn more mathematics. In math competitions, students will be in touch with higher level thinking problems that are dynamic, “untraditional”, and “outside of the box”. Unfortunately, not many schools offer the opportunities of math competitions due to lack of either the desire from school management or a capable coach.



In the fall 2008, IQ Abacus called for volunteers to form math teams of Grades 2, 3, 4, 5, and up to 8 for various math competitions. For students Grade 5 and younger, we would like them to accumulate experiences in a math contest setting and learn test-taking strategies, in addition to be in touch of problems beyond textbooks. Our ultimate targets are Grade 6 students and older because they are eligible for two very prestigious math competition nation- and world-wide. The American Mathematics Contest (AMC 8, 10, and 12) and MATHCOUNTS attract hundreds of thousands of Grades 6 to 12 students every year. Many colleges ask for the competition scores and some even offer scholarships. We hope by offering the training and platforms of the contests, students will be more motivated in active learning mathematics and enter ideal colleges for future promising careers.

### == AMC 8 result

The 24<sup>th</sup> annual American Mathematics Competitions 8 (AMC 8) contest was conducted on November 22<sup>nd</sup>, 2008. Nearly 150,000 students worldwide participated in the AMC 8 contest this year. The AMC 8 contest is for students at 8<sup>th</sup> grade and younger and can lead to other more selective math contests, even all the way to the United States of America team sent to the International Mathematical Olympiad, the premier international high school level mathematical problem solving contest. But the real rewards come from challenging each student with mathematics that requires higher level thinking skill. The problems on the contest are difficult, but designed to be within the reach of students. This year is the first time that IQ Abacus students participated in the AMC 8 contest. We started in August and met for only 40 minutes a week. With such short and limited training, all of our students’ scores are at the top 50%! The first place of the IQ Abacus team is Yifan Li who is also rewarded with the AMC 8 Winner Pin. Chris Lee, Tim Chen, Leo Lin, and Shihao Yang got the same score and are tied at the 2<sup>nd</sup> place. The third place goes to Melody Yeh who is still in 5<sup>th</sup> grade! In addition, Leo Lin is in 6<sup>th</sup> Grade and he scored in the top 40%. Therefore, Leo Lin is awarded with AMC 8 Achievement Roll Certificate. Timothy Horng is trained at IQ Abacus but represented the team of his middle school. Amazingly, Timothy scored at 21 out of 25 and is at the top 2% of all 150,000 students! Way to go, girls and boys!

### == Online Math League (OML) Math Contest Test#1 Result

For students younger than 6<sup>th</sup> grade, we encourage them to enter the Online Math League (OML) math contest as training for the future AMC and MATHCOUNTS contests. The OML math contest consists of three tests in each school year. The first test for Grades 2, 3, 4, and 5 has been conducted in November 2008. Scores of the top four places of each team were used to sum up the team scores. Therefore, the top four places in each team (grade) are listed in Table I.



**Table I. Online Math League Math Contest**

The top four places in each math team (the number in the parenthesis indicates the ranking of the student.)

| Grade 2   | Grade 3  | Grade 4  | Grade 5   |
|---|--|--|---|
| Javen Ho (1), Aatmik Mallya (1), Kevin Tang (1), Ankit Sharma (2) | Keegan Kow (1), Heejun Kim (2), Christina Ofori-kyei (2), Yung-Hui Chang (3) | Ricky Hsu (1), Mani Kandan (1), Bronson Wu (1), Haley Hedegard (2) | Melody Yeh (1), Cindy Wu (2), Esther Cheng (3), Yung-En Chang (4) |

## INSIGHT IQ ABACUS, Page 2

**Table II. AMC 8 Result for IQ Abacus Math Team\***

|  |
|--|
| Grade 8 and Below  |
| Yifan Li (1), Tim Chen (2), Chris Lee(2), Leo Lin (2), and Shihao Yang (2), Melody Yeh (3) |

\*: Timothy Horng who is trained at IQ Abacus but represented another team in the AMC 8 contest, scored at the top 2% of all the 150,000 students. Timothy is certified at Level Pro 2.

### == Abacus/Mental Math Certification

**Exam** Abacus education enhances progress in various abilities, in addition to the obvious benefit in the calculation skill. In the official abacus/mental math certification examination, a student has to provide 70% and more correct answers within the time limit. In the Level Pro mental multiplication, for example, the student has to move the “imaginary beads” around 30 times in the head for multiplying a 3-digit number by a 3-digit number and span over the 6-digit memory. During the process, multiplication facts are mentally recited 9 times. Then, an answer of 6 digits is provided. Not a single mistake is allowed in this process. When a question like this is repeated 20 times or more, the examination is completed. In 3 minutes, the “imaginary beads” have been moved in the head for about 600 times in a precise way in addition to the time for writing answers! That will require more than 4 moves a second to accomplish! That is why those who passed Level Pro 1 and above not only **calculate fast** but also exhibit outstanding **concentration, memorization, reflex, and quick thinking process** skills.

IQ Abacus is a member of the US Mental Math Federation (USMMF), the governing organization of mental math in the United States. We conducted the Certification Exams for students every 6 months, with the guidance and assistance of the USMMF. Those students who pass the exam

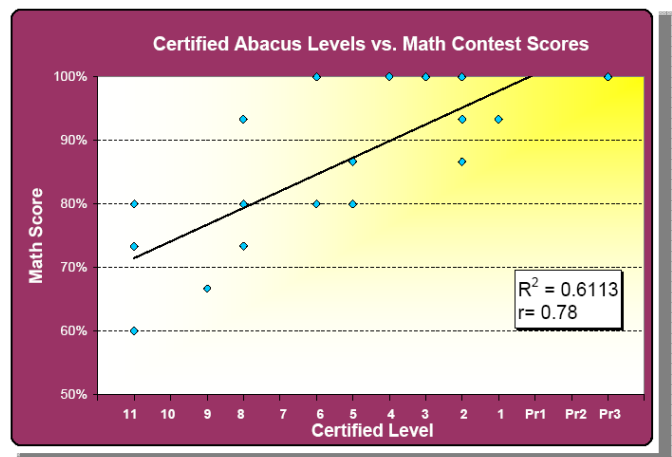


will be certified and acknowledged by USMMF and can be looked up at the USMMF web site at <http://www.USMentalMath.org>. If the students pass Level 3 and a higher level, they are further eligible for applying for scholarships ranging from \$50 to \$100. The details can be looked up at the above web site. By setting up the specific goals for students at six-month intervals, students will know where the next mile stone is at and be certified if they pay enough efforts. Since the certificates are officially recognized by the USMMF and can be publicly identified, we believe that they will further provide positive additions to students' resumes for colleges and future careers.

### == Comparison between “Certified Abacus Mental Math Levels” and “Math Contest Scores”

Did you know there is a strong positive correlation between the **Certified Abacus Mental Math Levels** and the **Math Contest Scores**? We utilized our recent results from the various tests of the students and observed a strong relationship as illustrated below in Figure 1.

Figure 1. shows that a strong correlation relationship exists between the Certified Abacus Mental Math Levels and the Math Contest Scores, as the linear correlation coefficient  $r$  is 0.78 approaching to 1. The strong correlation coefficient implies that a high math contest score can be achieved by those who are certified at an advanced level of abacus mental math. The result further affirms that the abacus mental math training provides more than *just* fast computation skills, as we described in the previous “Abacus/Mental Math Certification Exam” section.



The coefficient of determination,  $r^2$ , represents the percent of the data that is the closest to the line of best fit and is a measure of how well the regression line represents the data. Our  $r^2$  is 0.61, which means that 61% of the total variation in the math contest scores can be explained by the linear model. We feel that it is reasonable because the subtle change to a student due to the abacus training will not be “permanent” until the student passes Level 3 and above, generally speaking. Before a student reaches an advanced level, the math performance can be unstable and fluctuating. Besides, there is a limit of the highest math core (100%) but no limit to the certified level. The line cannot extend beyond 100% for someone who achieves at a very high Certified Level for abacus mental math.

This is our preliminary attempt in constructing the relationship between abacus training and math performance. We understand that the population size is not big enough for a good level of confidence. The study will be updated whenever we have new data. Meanwhile, please do not misunderstand that the abacus mental math achievement will “automatically” lead to a good math performance. The proper guidance and mentor of applying the mental math talent in solving math programs from the teacher will be important to make that happen. IQ Abacus has it all. And we believe that everyone can be successful in our program as long as *you do your share*.

**== Semester End Chinese Drama Show**

On Saturday, December 20th, at Room 4 of IQ Abacus, all of the students in the Chinese program gathered together for an exciting showcase. They either recited poems, songs, or perform dramas. All programs, of course, are in Chinese. Most students displayed their bilingual ability by speaking loudly and clearly. The drama shows, no matter it is "Monkeys Fishing the Moon" or "Three Little Pigs" aroused big laughter and applause. Many parents and guests attended the show and we felt sorry for not having a bigger room for the crowd! Thank you, teachers, for your tireless instruction and help. Thank you, students, for your diligent work and the best performance. Thank you, parents and audience, for coming and give the critical support to the learners!



**Ms. Chiou was reviewing math questions.**

the echo. The Grand Canyon Railway Hotel where we stayed for two nights has a heated indoor swimming pool. We, of course, did not miss the chance to take a dip! At bed time, the children shared ghost stories and tried to scare each other to sleep!

Wow! It's so much fun, but, Ms. Chiou, you lied.

There is no time for math! Don't worry. During the three hours of driving each way, we shared the mp3 music, played chess games, reviewed math rules/formula, and did mental math drills. Since no TV or video games, we had plenty of time to work on and discuss more than 60 advanced critical thinking problems in three days. We had a schedule full of fun and hard work, even without TV and video games!

The IQ Mathlete Camp is a voluntary service from IQ Abacus. The attendees are selective and by invitation only. We may conduct the similar activities again when we have a break of multiple days. If you are a 4<sup>th</sup> grader and older and possess a solid math skill equivalent to 6<sup>th</sup> grade and above, let us know if you would like to be invited next time.



**SNOW SLEDDING ~ Wheeee!!**

**== 2008 IQ "Mathlete" Camp @ Grand Canyon**

Learning math can be fun and exciting if it is blended in a fun vacation. During the winter break, IQ Abacus conducted a Math Camp taking place at Williams, Flagstaff, and Grand Canyon. The 3 days 2 nights' math camp spans from December 30, 2008 to January 1, 2009. Timothy Horng, Yifan Li, Shihao Yang, Bronson Wu, and Cindy Wu joined this mathematically challenged yet fun journey.

In the camp, we visited the Lowell Observatory at Flagstaff, where the Pluto was found. Since snow is everywhere, we played snow fights and snow sledding whenever we had a chance! The Grand Canyon Railway train ride provides a historic and fun journey to Grand Canyon with the help of authentic western characters who bring the Old West to life. The magnificent view of Grand Canyon is another focus of the trip. We tried to shout out at the Grand Canyon, but did not find the right spot to hear



**IQ Mathlete Camp @ Lowell Observatory Flagstaff, AZ**

**Left to right: Bronson, Timothy, Yifan, Shihao, and Cindy were doing the Countdown practice for MATHCOUNTS.**



**== Abacus Math Teacher wanted! Training will be provided.**

Want to be a mathematician, the best job in the country? You can be it! It is never too old to learn. IQ Abacus is expanding and we are offering an opportunity that you cannot afford to miss. As long as you have a college degree and love to work with children, we will help you be successful. You may even be your own boss and have an IQ Abacus School for yourself! Feel free to talk to either Ms. Chiou or Dr. Horng anytime if you are interested.

IQ MATHLETE CAMP