

MATHEMATICS

Primary Goal - To have students master basic functions in the elementary grades, and gain further understanding of mathematics as a system of logical reasoning with abstract symbols, at the secondary level.

<u>Staff</u>	<u>Students</u>	<u>Budget</u>	<u>Cost Per Student</u>
53.04	5,644	\$4,939,781	\$875

Level K - 6

Grade	North Colonie % at Level 3 and 4	New York State % at Level 3 and 4
3	95.6%	89.9%
4	94.5%	83.8%
5	90.1%	83.2%
6	88.8%	79.4%

Again this year, our district performance on the state assessments remained very strong as 96% of our third graders achieved at level 3 and 4, identical to the previous year's results. We were slightly down in the number of students attaining level 4; nonetheless, more than one third of our third graders did achieve at this level. Our fourth graders also did very well on this test with 94% of them achieving level 3 and 4. The number of students achieving at level 4 was up at 44%, compared to 39% the previous year. In fifth grade, we saw a decline in the number of our students achieving at level 4 from 39% to 32%; however, the number of students achieving competency remained fairly constant, 90% versus 92% the previous year. In sixth grade, we are very pleased with the increase in the number of students attaining level 4, 41% versus 33%. Overall, 89% of our sixth graders achieved either competency or proficiency on this test, identical to the previous year. In all instances, our students outperformed their grade level cohorts.

Teachers, students, and parents continued to be favorably impressed with the math textbook series. Parents, students and teachers alike enjoy the resources provided at the Eduplace Online Resource Center that is provided by the publisher.

MATHEMATICS (cont.)

2008 Third Grade Mathematics Assessment

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007
District	344	391	700	697	37%	41%	59%	55%	3%	4%	1%	0%
Blue Creek	49	83	692	691	24	30	69	63	4	7	2	0
Boght Hills	68	76	716	707	57	55	41	43	0	1	1	0
Forts Ferry	70	73	688	687	17	32	77	60	6	8	0	0
Latham Ridge	57	55	696	697	35	36	61	62	4	2	0	0
Loudonville	41	40	716	716	61	63	39	37	0	0	0	0
Southgate	59	64	694	694	31	38	61	58	7	5	2	0

2008 Fourth Grade Mathematics Assessment
Total Population*

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007
District	401	405	698	694	44%	39%	50%	53%	4%	7%	1%	1%
Blue Creek	77	63	704	698	55	43	39	46	5	3	1	2
Boght Hills	79	87	707	697	56	43	43	51	1	5	0	0
Forts Ferry	78	77	688	692	33	38	55	53	10	8	1	1
Latham Ridge	56	75	690	679	39	23	54	61	5	15	2	1
Loudonville	44	48	703	708	48	46	50	52	2	2	0	0
Southgate	67	64	696	674	34	44	63	48	1	5	1	3

2008 Fifth Grade Mathematics Assessment
Total Population*

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007
District	426	405	687	694	32%	39%	58%	53%	8%	7%	2%	1%
Blue Creek	63	68	680	688	25	34	62	51	8	6	5	9
Boght Hills	81	85	693	696	43	44	46	47	11	7	0	2
Forts Ferry	79	76	684	677	25	28	62	49	11	18	1	5
Latham Ridge	84	68	680	689	21	37	69	57	7	6	2	0
Loudonville	51	53	690	687	37	25	53	68	10	7	0	0
Southgate	68	64	695	681	41	27	56	55	1	16	1	3

MATHEMATICS (cont.)

2008 Sixth Grade Mathematics Assessment

Total Population*

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007
District	428	445	686	686	41%	33%	48%	56%	8%	9%	3%	2%
Blue Creek	71	85	686	679	41	27	49	51	3	18	7	4
Boght Hills	88	77	701	710	65	61	32	38	2	1	1	0
Forts Ferry	79	78	676	674	33	17	43	67	20	17	4	0
Latham Ridge	69	71	682	678	29	28	64	61	7	7	0	4
Loudonville	54	58	692	687	43	45	52	52	2	3	4	0
Southgate	67	76	676	681	30	27	54	55	15	16	1	3

* includes students with disabilities

On the Iowa Tests of Basic Skills, it should again be noted that this year students used a new form of IOWA's, the most recently normed edition of 2006. Typically, students achieve a lower level on a newly normed assessment. This year marked the return of administering the test to students in grade 4. Previously, when the Mathematics assessment was only offered at grade 4, we did not offer the IOWA Test of Basic Skills. On the Total Math section, all grade levels with the exception of first grade, achieved beyond the district standard of over 70% of our students at or above the 50% percentile. Our first graders appeared to have difficulty with the format and structure of this test, but seem to be able to overcome this when they take the test as second graders. On the Math Content subtest, again, all our students with the exception of our first graders, achieved above the district standard. This is also true in the Math Problems subsection. The Math Computation section of this test appeared to pose a bit more of a challenge for our students as students in grades 1, 3 and 4 did not attain the district standard. Also noteworthy is the fact that on all sections of the test as well as the Total Math section, our students did exceed national norms. We administer the IOWA test in grade 1 to gather data so that we can begin to offer remedial services to our 2nd grade students. The positive results and significant increases shown by our 2nd grade students relative to national norms, attest to the success of this approach. As with English Language Arts, using the ITBS represents yet another means for us to gain information so that we can begin to identify students for advanced math services or to provide remediation.

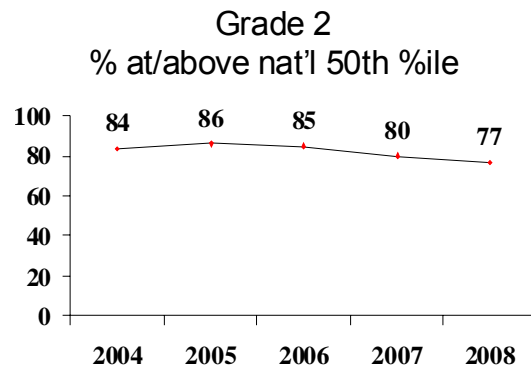
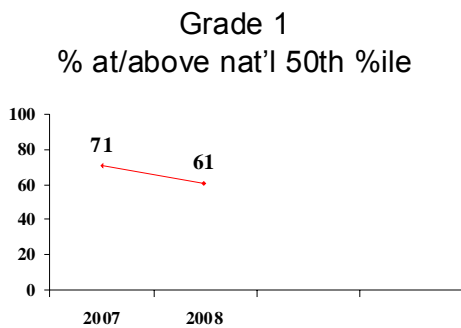
MATHEMATICS (cont.)

Iowa Tests of Basic Skills - Performance standard = 70% above nat'l. 50th %ile

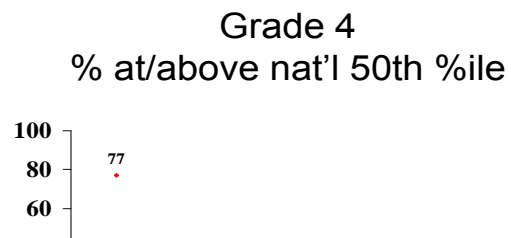
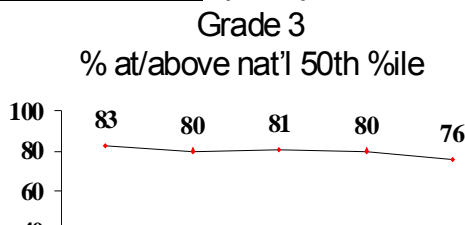
Grade	Math Concepts	Difference over 70%	Math Problems	Difference over 70%
1	61	-9	64	-6
2	77	+7	80	+10
3	79	+9	77	+7
4	78	+8	81	+11
5	81	+11	83	+13
6	74	+4	75	+5

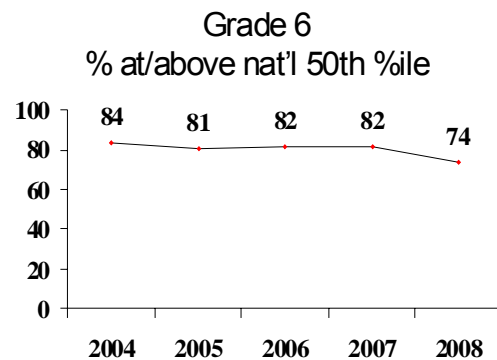
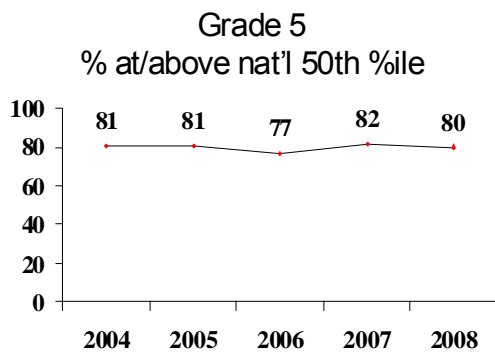
Grade	Math Computation	Difference over 70%	Total Math	Difference over 70%
1	52	-18	61	-9
2	70	+/-	77	+7
3	67	-3	76	+6
4	63	-7	77	+7
5	74	+4	80	+10
6	70	+/-	74	+4

(2004-2008 Results - ITBS Total Math)



MATHEMATICS (cont.)





HIGHLIGHTS

- This year the Houghton-Mifflin math series was implemented district-wide in grades K through 6.
- All K-6 teachers, LEP/Alternate Math/Remedial Math teachers, and LRA teachers participated in a full day of initial staff development during the Superintendent's Conference Day. The November Workshop day was devoted to exploring the test generator software and math website.
- Groups of teachers at every grade level were given release time during the year to create new instructional calendars and realign chapter and unit tests from the new series. Supplemental problem solving examples were added to many tests.

Teachers in grades 3, 4, 5, and 6 met in March for local scoring of the New York State Math Assessments.

MATHEMATICS (cont.)

OBJECTIVES

- Implement new Houghton-Mifflin math textbooks and supplemental resource materials in kindergarten through grade six.

Evaluation: Was the new math series successfully implemented?

The new math series has been implemented in every classroom in the district. Supplemental materials such as homework work-books, planning and assessment CDs, big books, overhead kits etc were purchased and used. Materials were also purchased for LRA, ASC and LEP teachers. Schools are in the process of ordering for next year.

- Provide staff development opportunities to familiarize teachers with the new math series.

Evaluation: What staff development opportunities provided to teachers?

A September workshop day was devoted to orienting teachers to the new math program. Teachers were grouped by grade level in three schools. Consultants from Houghton-Mifflin led them through the components of the math program. During the November workshop day, teachers met in their home schools to discuss what is working well and where help is needed. Teachers from each school learned how to use the "Ways to Assessment" test generator CD-ROM as well as Eduplace.com, a Houghton-Mifflin math activity website for teachers and parents. Additional staff development will be scheduled as needed.

- Create instructional calendars to match new math textbooks in K through grade 6.

Evaluation: Were new instructional calendars developed for each grade level?

Volunteers from all grade levels and schools met to create new instructional calendars. These were distributed to all math instructional staff.

- Review district math assessments in kindergarten through grade six in relation to new math texts. Consider all unit and cumulative end-of-year testing (including grade 6) in making adjustments.

Evaluation: Were district math assessments reviewed and adjusted? Were unit, cumulative and end-of-year tests put in place?

MATHEMATICS (cont.)

Volunteers from all grade levels and schools met in December and January to review the new Houghton-Mifflin assessments. Some modifications were made and additional problem-solving examples were added to many of the unit tests. These were distributed to all math instructional staff.

- Continue to analyze the results of the new state math assessments in grades 3, 4, 5 and 6. Use the results to focus instruction.

Evaluation: Were the results of the state math assessments reviewed and used to focus instruction?

The district Math Steering Committee reviewed the results of the grade 3 - 6 state math assessments for 2007. The elementary principals also analyzed the results for their individual buildings. Data will be used to improve instruction. Results of the 2008 tests have not yet been received.

- Monitor effectiveness of use of ITBS results from May to identify 2nd graders needing AIS services at the beginning of the year.

Evaluation: Were potential AIS students identified? Was service begun early in the school year? Was the intervention found to be effective?

Substantial numbers of students were identified for AIS as a result of ITBS results and service began early. The correlation between ITBS and state assessment results was minimum. This situation requires further scrutiny. Perhaps the use of the updated ITBS will have an impact. Also, we would normally compare pre-post ITBS results to determine the effectiveness of the intervention, the use of the revised tests will make this a subjective statement.

- Examine the impact of the SED realignments of math topics on the grade 5 and 6 alternate math curriculum.

Evaluation: Did the result of the impact study reveal a need to upgrade the level of expectations for some topics and/or to add new accelerated curriculum?

The impact study revealed no need to upgrade level of expectations or to add new accelerated curriculum topics. We also found that students were well prepared for the revised Math 7E curriculum. We did find that the average grade level equivalent on the ITBS for 6th graders was grade 13, suggesting that we consider allocating less time reviewing basic skills. We will study the results carefully, after the introduction of the new ITBS form next year.

MATHEMATICS (cont.)

Students Served - Remedial Math

	2007-08	2006-07	2005-06
Elementary Grades 1-6	112	129	93

Remedial students who tested out of math remediation based on IOWA Tests of Basic Skills results: 62 students, 64% of those who took the test.

HIGHLIGHTS

- We are continuing to track the students who first took the ITBS for math at the end of their first grade. We are keeping records on each student to determine whether that student tests out the following year and then whether the student had to be placed back into remediation sometime the following year for failure in the classroom program. Since this is intended to be longitudinal study, we will also want to find out whether, even though they tested out earlier, they experience difficulty at grades 5 or 6 when study of fractions and decimals occur.
- Students exiting grades 5 and 6 at the close of the 2007-2008 school year who received remedial math services during the school year were invited to attend the remedial math summer program. Fourteen students took advantage of this program.
- Although the maximum group size during the school year is capped at 6 students, we accommodated a group of 10 students daily during the 6-week summer session. These students, who were also enrolled in the reading/writing, came to mathematics for an hour daily. Four additional very needy students enrolled in the 2 ½ hour class daily.
- All students were enthusiastic and ready to learn each day when they came to class. We worked through the basic skills in the grade 5 NYS curriculum by using real-life applications so that the students were able to see the significance of learning the material. All students were receptive to this method and many commented that they felt like they were at a “math camp” rather than summer school.
- Overall, the program was successful. These students were able to get that small group instruction that they require in order to help them fully understand the basic skills and how to work through problems. For the students entering the junior high in September, it was an opportunity for them to be introduced to the building before school starts.

MATHEMATICS (cont.)

Alternate Math Program

In 2007-2008 there were 145 students enrolled in the program, 15% of the total population, 61 at grade 5 (14% of class) and 66 at grade 6 (15% of class).

NYS Math Assessment Results:

Grade 5 – 18% - high level 3
82% - level 4
Grade 6 – 12% - high level 3
88% - level 4

IOWA Tests of Basic Skills Results:

Grade 5 – Average grade level – 10.3
Grade 6 – Average grade level – 12.1

Students in the program responded to the questionnaire as follows:

89% looked forward to class
89.5% were challenged
88% enjoyed discovering and using math concepts
95% knew what was expected in the math class
95% are getting better at using different problem-solving strategies

On questionnaires returned in May 2008, parents responded:

Child challenged sufficiently – 91.5%
Child seems excited about math – 91%
Has some math been too easy – 61% After finding that 88% found it too easy last year, we added a little more challenge.
Has some math been too difficult – 66% This is down from 77% last year even though we raised the challenge level.
Question: My son/daughter expresses enthusiasm about “discovering” math concepts. 97.5%
Question: I find it helpful to receive the 5-week Interim Progress reports. 100%

HIGHLIGHTS

- A new 6th grade final exam was developed. It is a four part exam scheduled over four class periods. It requires high level problem solving skills applied to a real-life environment. Students were enthusiastic about this new way to test their skills and they did remarkably well. After a review at the end of the year the staff decided that no revisions are needed.

MATHEMATICS (cont.)

MATHEMATICS (cont.)

- The Test of Mathematical Abilities for Gifted Students is reviewed periodically to determine how effective a tool it is for placing students in the Alternate Math program. While it is only one indicator in the student profile, it has been found to be an accurate measure of math ability. The results are consistent with other standardized tests. A tracking of student level of success in the program does, indeed, correlate with the math quotient found on the TOMAG.
- The parent informational meeting held in early October was well attended – an estimated 100 parents in the audience. The teachers did a polished presentation using a power point program. At the conclusion they gave the parents a math problem from the curriculum which, although causing some anxiety, the parents seemed to enjoy doing. The teachers used the discussion to show how there is more than one way to arrive at a correct solution. The question period lasted about 45 minutes. The questions were varied and well thought out. Answers were specific and had the effect of instilling confidence. One couple in the audience who had many questions delayed their son’s placement, although he qualified, until they had more information. They were very pleased with what they learned.
- The 6th grade math competition with the help of a Siena math instructor was very challenging. The students certainly rose to the high bar and wanted to continue after the competition ended. The program developed by Gary Cimorelli to display the cumulative totals while the competition was in progress created excitement. It was all done in a professional manner with a time keeper using an oriental gong, two judges and a score keeper.
- The students participated in the Pi Day celebration – where they learned what Pi is, how it was derived, and some uses in the math world. This is an annual event in our program.
- Students also participated in the contests of the Math League of N.Y.S. and the math Olympiads. Although we sponsor these activities, we do not limit participation to the Alternate Math students.

Level 7 – 8

2008 Seventh Grade Mathematics Assessment
Total Population*

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007
Grade 7	476	448	701	685	55%	36%	37%	51%	7%	11%	2%	2%

MATHEMATICS (cont.)

**Shaker Junior High School Results on 2007 Grade 8 Math
Total Population***

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007
Grade 8	450	424	698	683	47%	30%	45%	58%	4%	8%	4%	4%

*includes students with disabilities

NYS Regents – Integrated Algebra
(Prior to 2008 Test A)
Math 9R

	2007-08	2006-07	2005-06	2004-05	2003-04
Percent Passing	100%	100%	100%	100%	100%
Number Enrolled	131	119	130	125	119
Percent of Grade 8 Enrolled	29%	28%	29%	28%	25%

District Tests

The results of the district end of the year examinations were as follows:

Grade 7 Math

Grade	Number of Students/Percentage 2007-08	Number of Students/Percentage 2006-07
A	179/39%	118/28%
B	123/27%	128/30%
C	87/19%	92/22%
D	26/ 6%	26/6%
F	41/ 9%	48/11%

Grade 8 Math

Grade	Number of Students/Percentage 2007-08	Number of Students/Percentage 2006-07
A	119/40%	80/27.9%
B	83/28%	86/30.1%
C	65/22%	75/26.2%
D	9/ 3%	18/6.3%

F	19/ 6%	27/9.4%
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MATHEMATICS (cont.)

HIGHLIGHTS

- In both grades 7 and 8, significant improvement was made in the number/percent of students earning scores at Levels III/IV on the NYS assessment. In both grade levels, the percentage of students scoring at Levels III and IV increased 5%, to 92% in grade 7 and 93% in grade 8.
- Final exam results were also improved in both grades over 2007; the number/percent of students earning grades of D/F decreased by 2% in grade 7 and by 6% in grade 8.
- These data combined help us to identify students who are not strong in mathematics and who may benefit from, or be required to enroll in, and AIS program in the subsequent school year. Assessment data also help us to identify needed revisions to our curricula and/or instructional programs.
- This year we continued a revised Fundamental Math 8 program to allow a greater number of students to benefit from it. While we had a number of students who were enrolled in Fundamental Math 8 on any every-day basis from the beginning of the school year, we also scheduled a larger number of students for Fundamental Math 8 on an every-other-day basis opposite Fundamental ELA 8. We believe this option benefited many more students than were able to access the program previously.

OBJECTIVES

- Analyze results of the initial 2007 grade 7/8 NYS assessments.

Evaluation: Revisions needed? Analyze results of special education students and suggest options to address deficiencies.

Eighty-seven percent (87%) of Shaker Junior High 7th graders earned scores at Level III/IV, an increase from the 80% in 2006.

Eighty-eight percent (88%) of Shaker Junior High 8th grade students earned scores at Levels III/IV, the same percentage earning these scores in 2006.

- Analyze results of last (2007) administration of Regents Test A?

Evaluation: Were results analyzed?

MATHEMATICS (cont.)

Test A results were excellent; 93% of Math 9R students earned grades of 90 or above.

- Analyze results of initial administration of Integrated Algebra Regents exam.

Evaluation: Were curriculum/instruction revision reviewed?

The test will be given for the first time in June 2008.

- Continue to facilitate technology integration into math instruction.

Evaluation: Did more teachers avail themselves of current technologies?

Technology integration is increasing. Five (of nine) math teachers have their own web sites, three post grades online. Smartboards are being used by a majority of the math teachers; online resources are being integrated regularly.

Level 9 – 12

NY REGENTS MATH

Integrated Algebra, SHS - 476 tested - (98% of those enrolled) % passing = 97%

Test A, SHS - 25 tested - (99% of those enrolled) % passing = 97%

*Total including Grade 8 students (539 tested) % passing = 98%

Test B, SHS - 366 tested - (99% of those enrolled) % passing = 93%

*This figure includes junior high student results

Percent of students scoring 85, or higher, on June Regents examinations:

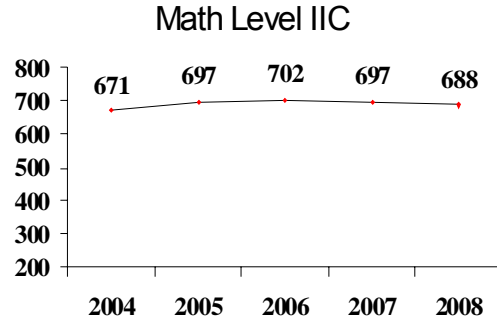
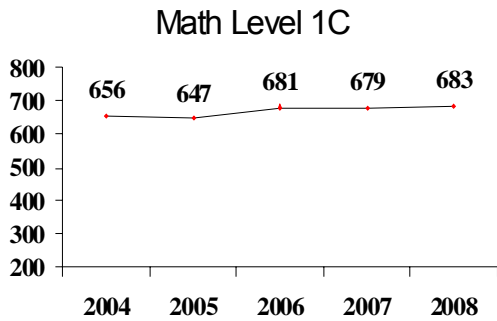
Test A/Integrated Algebra	63%
Test B	49%

CEEB Math Achievement Tests -

	Math Level 1C	Difference over/under Performance Standard - 669	Math Level IIC	Difference over/under Performance Standard - 699
	683	+16	688	+11
Number Tested	58		41	

MATHEMATICS (cont.)

(2004-2008 Results - CEEB Math Achievement Tests)



CEEB Advanced Placement Math AB and BC - Performance standard = 90% will score "3" or higher

	Math AB	Difference over 90%
SHS Percent scoring "3" or Higher	96%	+6
Number tested	51	
NYS Percent scoring "3" or higher	66	
US Percent scoring "3" or higher	61	

	Math BC	Difference over 90%
SHS Percent scoring "3" or Higher	98%	+8
Number tested	50	
NYS Percent scoring "3" or higher	80	
US Percent scoring "3" or higher	80	

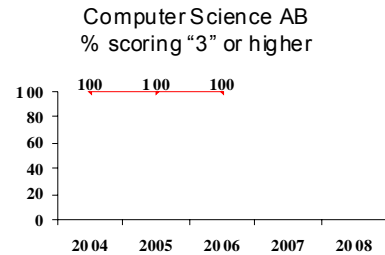
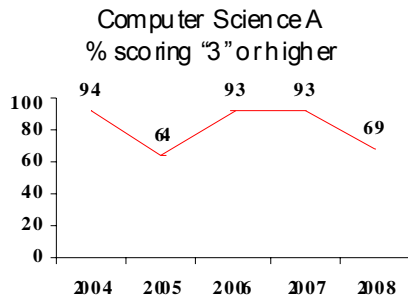
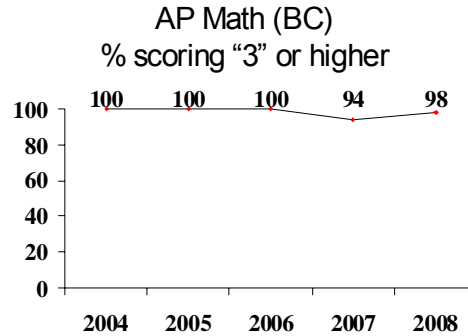
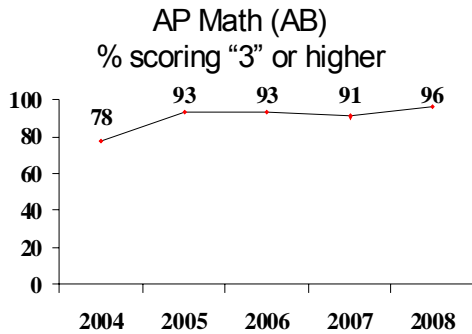
	Computer Science A	Difference over 90%
SHS Percent scoring "3" or Higher	69%	-21
Number tested	12	
NYS Percent scoring "3" or higher	54	
US Percent scoring "3" or higher	57	

	Computer Science AB	Difference over 90%
SHS Percent scoring "3" or Higher	0%	
Number tested	0	
NYS Percent scoring "3" or higher	76	
US Percent scoring "3" or higher	73	

(NY and US data are from 2008.)

MATHEMATICS (cont.)

(2004-2008 Results - AP Math)



CEEB Math Aptitude and Math Achievement Tests

- On the CEEB Scholastic Aptitude Test (SAT Math,) Shaker High School students performed well and the mean score exceeded that of the Suburban Council, New York State, and the nation. We also saw an increase in students achieving over 600, 43% versus 38% in 2007.
- At Shaker High School, students take two math achievement tests, Math Level 1C and Math Level 2C. On the Math Level 1C, the mean score of 683 is the highest in the past five years. On the Math 2C exam, the score of 688 is down from last year's result of 697, but still exceeds New York State national norms. It is near the Suburban Council norm of 692 and nonetheless, represents strong achievement for our most advanced math students.

MATHEMATICS (cont.)

CEEB Scholastic Aptitude Test (SAT Math)

	2008	2007	2006	2005	2004
SHS Mean Score	570	567	578	569	575
NYS Mean Score	504	505	510	511	510
National Mean Score	515	515	518	520	518
Suburban Council	556	556	560	560	561
Percent of 12 th graders taking exam	78%	84%	87%	81%	80%
SHS Percent over 600	43%	38%	44%	38%	41%

HVCC COLLEGE IN THE HIGH SCHOOL PROGRAM

	2007-08	2006-07	2005-06
No. of IRP 4 Students Enrolled in HVCC	35	36	36
Percent of Total Senior Class Enrolled	7.0	8.3	7.7
No. of Students who Received College Credit	35	36	35

UNIVERSITY IN THE HIGH SCHOOL PROGRAM

	2007-08	2006-07	2005-06
No. of Students Enrolled (Statistics, Topics, 12R)	184	203	176
Percent of Total Senior Class Enrolled	36.8	46.8	39.6
No. of Students who Received College Credit	184	199	176

Regents Competency Tests (RCT)

Grade 9

Subject	Number Failing RCT		Percent of Class	
	2007-08	2006-07	2007-08	2006-07
	20	15	4%	3%

MATHEMATICS (cont.)

Grade 10

Subject	Number Failing RCT		Percent of Class	
	2007-08	2006-07	2007-08	2006-07
	4	7	1 %	1%

Grade 11

Subject	Number Failing		Percent of Class	
	2007-08	2006-07	2007-08	2006-07
	5	0	1%	0%

Grade 12

Subject	Number Failing		Percent of Class	
	2007-08	2006-07	2007-08	2006-07
	0	0	0%	0%

HIGHLIGHTS

Math A Regents Results

- All students enrolled in Unified 3 sat for this Regents exam. Of these 23 students, 83% passed either in January or in June. There are only four students who still need to pass the exam in order to earn a Regents diploma. Three of these four students are Special Education students and have passed either the RCT in math or earned at least a 55 on Math A, fulfilling the math requirement for a local diploma.
- Two students new to the state took this Regents exam and passed, both with high 90's.

Integrated Algebra Regents Results

- 95% (high school only) passing rate, includes 99% 9R, 97% IRP 2, and 53% Unified 2.
- Seven students who had failed the exam in June passed the August Regents. In addition, twenty-four students who had failed either 9R or IRP 2 in June passed the course in summer school. This AIS service continues to be very effective.
- Eight departmental review classes were held in the weeks prior to the Regents. Each class was led by two Algebra teachers. Topical departmental written packets were used. Information about these classes, including specific dates and times, was conveyed to parents and students via letters and district website.
- All students taking this Regents exam must now have "exclusive use" of a graphing calculator. With the additional calculators purchased by the district this spring, administration of the exam ran smoothly. The Math Department is appreciative of the strong administrative support extended to us.

MATHEMATICS (cont.)

- The conversion scale (30/87 or 34% converted to a 65%) for the Algebra Regents exam is a serious concern to us. Students are given a false sense of “success,” particularly in Math 9R, and are proceeding on to Math 10R, a much more rigorous course. Since the State has informed us that the conversion chart will remain fairly constant in upcoming years, serious discussion is needed to investigate the feasibility of administering a school 9R exam (in addition to the Regents) that will average into a student’s final mark, rather than using the Regents exam grade.

Math B Regents Results

- 93% passing rate in June
- Twelve students who were unsuccessful on the June exam passed in August, raising the passing rate to 96%
- Eight departmental review classes were held in the weeks prior to the Regents. Each class was led by two Math B teachers. Topical departmental written packets were used. Information about these classes was disseminated in the same manner as that of the Algebra review classes.
- The two-year extended Math 11 program, 11A and 11B, continues to serve the weaker Math B students who, prior to the implementation of this program, found the traditional 11R course too fast paced. These students require additional practice and individual help. Although, as in past years, the 11B teachers, assisted by some of their 11R colleagues, held extensive after school review sessions, this year’s results were weaker than those of prior years with 59% passing in January. Only five of the fourteen students who failed the exam in January chose to re-take it in June. One of the five passed in June. I

recommend that the second semester 11B curriculum be revised to include more Math B Regents review on a regular basis and that Regents review classes be held specifically for 11B students in the spring.

Unified Math

- Although this year’s group of Unified 1 students was very weak academically, they were more focused and motivated than last year’s very difficult group. Class size was limited to 10 or fewer students (one extra section). Since these students take the Algebra Regents at the end of Unified 2, it is imperative that small class size be maintained.
- The Unified 2 curriculum was completely revamped this year. The pace was faster and the amount of material covered greater than in prior years when students were not preparing for a Regents exam until the completion of Unified 3. The curriculum included many rigorous math topics and skills. As one of the Unified 2 teachers, I worked closely with my colleagues in this program to develop guided note packets and accompanying resources to support students in this course. All three teachers were pleased with the 53% passing rate. Due

MATHEMATICS (cont.)

to the rigor of the work completed in class, some of the students who were unsuccessful on the Algebra Regents easily passed the RCT.

- Next year's revised Unified 3 course will focus on strengthening students' algebra skills, sharpening students' consumer skills, and preparing those who failed the June Regents to re-take the January 2009 Algebra Regents exam.
- The new Unified 4 course (two sections) will target students who anticipate attending a two-year college. This group of students, similar to the general population, needs the continuity of math courses prior to taking on the challenge of college level math. One of our strongest teachers, Mrs. Dertadian, has taken on this new assignment.
- The Unified program continues to be a very effective AIS service.

Advanced Placement Program

- All AP teachers have submitted their curriculum for the AP audit.
- Calculus and Computer Science students continue to perform very well in these college level programs.
- 96% of AB and 98% of BC Calculus students earned a grade of 3 or better. 72% of BC students scored at level 5.
- The number of students scoring a 3 or better in AP Computer Science fell to 69% from 83% last year. Enrollment in this class remains around 15.

Additional College Programs

- This year's enrollment in the UHS program was 184, down slightly from last year's number of 203. Students in Math 12R, Statistics, and Topics in
- Advanced Math all have the option of enrolling in a UAlbany math course. This year, all 184 students earned credit for the college class.
- HVCC courses continue to be offered to the IRP 4 students. This year, 35 out of the 45 IRP 4 students enrolled in the college course with all of the enrolled students earning college credit.
- Forty-four percent of the senior class enrolled in one of the programs above. An additional 115 students or 23% of the class took AP calculus or computer science. Overall this year, two-thirds of grade 12 students successfully completed a college level math class.

Math Labs

- First semester Regents labs were very effective with 15 out of 18 students passing the January 2008 Math A exam. Many of these lab students were new to the district or to the state and needed to pass the Regents in order to fulfill the graduation requirement. Two of the three students who failed in January passed the Integrated Algebra Regents in June. The third student, unsuccessful on both the spring Component Retest and the June Regents. passed the Regents in August.

MATHEMATICS (cont.)

- Seventy-seven percent of the 44 students enrolled in the Math 10 lab passed their midterm exam, 42% above 80. Math 10 teachers meet on a regular basis with lab teachers to discuss progress of these students.
- Proactive labs (both first and second semester) serve those students who scored below a 3 on the grade 8 assessment, who were receiving AIS in math at the junior high level, or who were experiencing difficulties in their daily math 8 work. The lab supports students as they begin the ninth grade Algebra curriculum, offering additional opportunities to ask questions, learn math strategies, and complete additional math practice. Math 9R teachers meet regularly with lab teachers to discuss student progress and address specific individual needs.

New State Curriculum

- As of this year, the Math A program has been phased out and replaced with the Integrated Algebra curriculum. The only students who prepared for Math A were our twenty-four Unified 3 students and two upperclassmen new to the district.
- All Math 9R, IRP 2, and Unified 2 students took the Algebra Regents. This was a significant change for the Unified 2 students who had not previously sat for the Math A Regents until the end of Unified 3. Of the thirty Unified 2 students, 17 (57%) passed the Algebra Regents. An integral part of next year's Unified 3 course will be review and preparation for the January 2009 exam. This class will serve as the Academic Intervention Service for those Unified students who have not yet met this graduation requirement.
- During this summer 2008, a group of Math 11R/H teachers participated in a curriculum workshop to begin preparing for the 2009-2010 Algebra 2/Trig. Course and new Regents exam.
- In addition, a curriculum workshop was also held for all Math 10R/H teachers to make final preparations for the implementation of the new Geometry course in September. New textbooks with extensive technology resources were purchased for this course. Teachers look forward to this new one year course culminating in the Geometry Regents. As with the Algebra Regents, the state grade conversion table will need to be closely monitored in Geometry.

Instructional Technology

- The momentum of interest and enthusiasm for Instructional Technology among math teachers continued to grow once again this year. Two Smartboards, several Mimios, and an Elmo, along with permanently mounted projectors, were shared among twelve teachers in a total of 6 "technology ready" classrooms. Others in the department observed their colleagues and have requested to utilize the technology for the upcoming year.
- Teachers participated in a variety of Staff Development courses focusing on Instructional Technology. Mrs. Battaglia and Mr. Kaercher taught some of these classes. In addition, Mrs. Battaglia worked closely with a 10H student as he led an in-service course on Microsoft Word. Three math teachers completed a district-wide summer workshop on technology.

MATHEMATICS (cont.)

- Teachers' knowledge of technology and IT served them well in their search for new Math 10 textbooks. Teachers were well prepared as they attended publishers' presentations and asked outstanding questions. Their knowledge and experience with Instructional Technology enabled the department to make a well informed decision on the best available Geometry text.

Math Club/Peer Tutoring

- Three teachers shared the responsibilities of Peer Tutoring, Math Club, and monthly NYS Math League contests. All of these areas grew in numbers and in interest during the past year. Peer tutoring continued to draw a great deal of student participation. The fact that the tutoring applications were available online greatly facilitated the sign-up process. As part of the renovation of the former Computer Science room, there will be an area (M216) earmarked specifically for Peer Tutoring. This will provide a quiet place for students to work while also having access to math resources.
- This was our most successful year for Math Club. Mrs. Quinn did an outstanding job of leading the group of high achieving, exceptionally self-motivated math students. Highlights of the year were a Siena College guest speaker, Dr. Jim Matthews, and his group of Math Education students. High school and college students worked in groups to solve challenging math problems. Math Club also sponsored The Pi Day Pie Eating Contest which was an overwhelming school-wide success. Second year Shaker teacher, Mrs. Gibson, will be stepping in to take charge of Math Club for 2008-2009.

OBJECTIVES

- Implement new SED algebra curriculum in Unified Math 2, IRP 2, and Math 9R. Revise curriculum, timeframe, and assessments to reflect these changes. Prepare students for first implementation of the new Algebra 1 Regents examination.

Evaluation: Was a Summer 2007 workshop held to revise curriculum? Were new topics assigned to specific years of each extended program? Did teachers revise timeframe and assessments?

A three-day summer workshop was held and included all 9R, IRP 2, and Unified 2 teachers. Specific course curriculum outlines were written, timeframe of topics was discussed and incorporated into outlines, and departmental assessments were created. Assignment sheets were written to correlate with the newly adopted textbook. Warm-ups and lessons were also created for use with the Mimio and Smartboard technology. Hands-on activities were developed for IRP and Unified lessons. A great deal of articulation took place among IRP and

MATHEMATICS (cont.)

Unified teachers to determine the assignment of topics to each of the two years of the programs. Throughout the year, course meetings were held both after school and during the two workshop days to review timeframes and make necessary revisions. The SED sampler of Algebra 1 test questions was published in late October and teachers used this information to prepare topical packets for May/June departmental review classes. At the regional AMTNYS math conference in March, several algebra teachers attended sessions specifically related to the new Integrated Algebra curriculum and associated Regents.

- Begin to plan for 2008-2009 implementation of the new state Geometry course. Revise current Math 10R, 10H syllabi to reflect the significant changes in topics and timeframe.

Evaluation: Did a sample of Math 10 teachers participate in a curriculum workshop? Were course outlines and timeframe of topics revised and/or rewritten? Were currently used Math 10 textbooks, along with the new Geometry textbooks, reviewed?

During a two-day summer workshop, two 10R teachers and one 10H teacher organized the New York State Geometry guidelines and strands into Math 10 topics and assigned specific number of days per topic. Preliminary, detailed curriculum outlines were developed for both the Regents and Honors levels. Intranet and Internet resources were also examined and discussions focusing on the continued use of Instructional Technology in Geometry took place. A variety of available textbooks were examined and used as resources for the new topics in the curriculum. During the year, three publishing companies visited Shaker and presented their new Geometry texts and associated technology resources. All Math 10 teachers attended these presentations and a decision was made in April. One 10R teacher piloted the new texts with two 10R classes for selected units in the current course.

- Investigate a fourth year math course, Unified Math 4. Research the post-secondary plans for Unified 3 students to evaluate the need for a senior level Basic math course.

Evaluation: Was a workshop held to study the need for this course? Did teachers investigate possible math units and topics? Were resources, including types of instructional technology, investigated? Did articulation occur among math teachers and guidance counselors?

Although a specific workshop was not designated Unified 4, the two Unified 3 teachers spent their one day Unified 3 workshop discussing curriculum for both years of this program. Post Algebra 1 topics, along with several consumer math

MATHEMATICS (cont.)

topics, were organized along with an appropriate timeframe. The possible use of our former IRP 4 HVCC Intermediate Algebra text was investigated and found to align well with the Unified 4 curriculum. Resources from the Intranet and Internet were investigated, along with the use of the Smartboard, Mimio, and Elmo Instructional Technology tools. Throughout the year, there was ongoing articulation among Unified math teachers, the Math Supervisor, guidance counselors, and area college representatives about the need for this fourth year math course. As of May 1, thirteen students have requested the course, more than sufficient enrollment for one section. The Math Department, particularly Unified teachers, are very excited about this new course and the positive impact it will have on the post-high school success of our weakest math students.

- Continue to expand the use of Instructional Technology in math classrooms. Encourage articulation and sharing of resources among teachers of all course levels.

Evaluation: Did a math teacher participate in the District Instructional Technology workshop? Was additional equipment purchased for the department and set up in classrooms? Did teachers share ideas and materials informally and at department meetings? Did mentoring occur among teachers in the use of instructional technology? How did students benefit from this use of Instructional Technology?

Several math teachers participated in the district IT workshop and have continued to act as resources for teachers in other departments. One additional Smartboard, two Mimios, an Elmo presentation unit, and four LCD projectors were purchased for the Math Department. A total of six math classrooms are now equipped with one of these types of IT along with a projector. Utilization of these technology ready rooms has been maximized by the specific assignment of teachers to rooms. Teachers continually share, both formally and informally, information about equipment and software use. In meeting our department objective of at least one colleague observation during the year, many teachers have chosen to sit in a class specifically to observe the use of IT. Teachers who are just beginning to venture into the use of IT are enthusiastically encouraged and mentored by their colleagues. Excitement about IT and the use of IT has grown tremendously in the Math Dept. during the past two years. Teachers agree that students significantly benefit from the use of Instructional Technology because it encourages active participation, fosters student motivation and focus, and presents vivid visualization of mathematics. In April, seven math teachers attended a half-day of advanced training on the Mimio technology.

- Continue to formalize and organize the Peer Tutoring program.

MATHEMATICS (cont.)

Evaluation: Were additional math teachers involved in the program? Was the database system updated? Were students paired earlier in the school year? Was attendance at tutoring sessions monitored?

Although all teachers encourage students to participate in the tutoring program, Mrs. Wells continues to be the in-charge person for this program. She and Mr. Cimorelli updated the data system and transitioned the signup process from paper to electronic submission. Communication among Mrs. Wells and the students is accomplished primarily through e-mail. Throughout the year, approximately 60 tutors and 30+ students were involved in the program. In order to explain expectations and procedures of the program, tutors were asked to make an appointment with the Math Supervisor prior to beginning their tutoring. With the exception of groups meeting in the Supervisors' Office, attendance at tutoring sessions was not formally monitored, however students were asked to maintain a log of their sessions. Mr. Kaercher will be taking on the responsibilities of Math Peer Tutoring for 2008-2009. We plan to use a small room (part of the renovated M216) that will be devoted exclusively to our peer tutoring program.