

## 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>
56.20	5,648	\$5,270,300	\$933

### Level K - 6

Grade	North Colonie % at Level 3 and 4	New York State % at Level 3 and 4
3	98%	*
4	92%	*
5	95%	*
6	93%	*

\*As of the printing of this Annual Evaluation Report, this data was not yet available.

The 2008-09 school year marked some outstanding performances by our district elementary students on the state assessments in mathematics. Starting with third grade we showed improvement over an existing strong performance as 98% of our third graders achieved level 3 or 4 compared to 96% in the prior two years. We remained relatively constant with the number of students scoring at level 4, with 36% in 2009 compared to 37% in 2008. Fourth grade achievement also remained strong with 92% of our students achieving at level 3 and 4 compared to 94% in 2008. Fourth grade saw 40% of our student achieve at level 4 compared to 44 the previous year and 39% during the 2006-07 school year. In fifth grade, we saw a bump in the number of our students achieving at competency level or better, 95 % in 2009 compared to 90% in 2008. We also saw a substantial bump in students achieving at level 4 with an increase from 32% in 2007-08 to an outstanding 44% in 2008-09. This represents the highest percentage of students achieving at level 4 in the last three years. Our sixth graders also did quite well as 93% of them achieved competency compared to 89% in the previous year. There was also a slight increase in the number of students achieving at level 4, 43% vs. 41% and this also represents the highest number of students achieving at level 4 over the last three years. In all instances, our students outperformed their grade level cohorts throughout New York State.

This represented the second full year of the implementation of the new math textbooks series. Coupled with our internal staff development and application of technology to math instruction and the textbook's On-Line Resource Center, teachers are utilizing new ways to provide instruction that is engaging, hands-on, and visual. Our steady increase in student performance on this test represents the results of their good efforts and their supportive families.

**MATHEMATICS** (cont.)

**2009 Third Grade Mathematics Assessment Total Population\***

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008
District	387	344	701	700	36%	37%	62%	59%	2%	3%	0%	1%
Blue Creek	70	49	695	692	31	24	66	69	1	4	1	2
Boght Hills	67	68	714	716	54	57	45	41	1	0	0	1
Forts Ferry	60	70	691	688	23	17	70	77	7	6	0	0
Latham Ridge	67	57	700	696	36	35	63	61	1	4	0	0
Loudonville	54	41	711	716	48	61	52	39	0	0	0	0
Maplewood	10	13	694	693	10	31	90	69	0	0	0	0
Southgate	59	59	698	694	27	31	73	61	0	7	0	2

**2009 Fourth Grade Mathematics Assessment Total Population\***

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008
District	368	401	696	698	40%	44%	52%	50%	5%	4%	2%	1%
Blue Creek	55	77	694	704	33	55	62	39	4	5	2	1
Boght Hills	72	79	703	707	47	56	49	43	4	1	0	0
Forts Ferry	74	78	683	688	30	33	57	55	11	10	3	1
Latham Ridge	57	56	688	690	30	39	58	54	9	5	4	2
Loudonville	38	44	709	703	63	48	34	50	3	2	0	0
Maplewood	11	18	704	681	45	22	55	67	0	11	0	0
Southgate	61	67	706	696	46	34	48	63	2	1	5	1

**2009 Fifth Grade Mathematics Assessment Total Population\***

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008
District	418	426	693	687	44%	32%	51%	58%	4%	8%	0%	2%
Blue Creek	77	63	686	680	35	25	56	62	9	8	0	5
Boght Hills	80	81	699	693	53	43	45	46	3	11	0	0
Forts Ferry	77	79	684	684	29	25	64	62	8	11	0	1
Latham Ridge	61	84	702	680	56	21	39	69	3	7	2	2
Loudonville	44	51	693	690	43	37	55	53	2	10	0	0
Maplewood	12	16	695	680	50	19	50	62	2	19	0	0
Southgate	66	68	698	695	52	41	47	56	0	1	2	1

## MATHEMATICS (cont.)

### 2009 Sixth Grade Mathematics Assessment

#### Total Population\*

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008
District	435	428	694	686	43%	41%	50%	48%	6%	8%	1%	3%
Blue Creek	59	71	688	686	37	41	58	49	2	3	3	7
Boght Hills	81	88	716	701	75	65	25	32	0	2	0	1
Forts Ferry	78	79	686	676	32	33	56	43	12	20	0	4
Latham Ridge	85	69	681	682	22	29	64	64	12	7	2	0
Loudonville	47	54	698	692	51	43	47	52	2	2	0	4
Maplewood	11	22	682	672	27	23	55	54	18	23	0	0
Southgate	74	67	698	676	47	30	50	54	1	15	1	1

\* includes students with disabilities

As in English/language arts, the main purpose of the IOWA Test of Basic Skills, in addition to measuring our students achievement, is to identify students in need for services. This year, we are pleased to note that on the total math section all grade levels achieved beyond the district standard of over 70% of our students at or above the 50<sup>th</sup>ile nationally. Last year, we were concerned with our first graders who appeared to have difficulty with the format and structure of this test. This year, we are pleased to report that the number of first graders scoring at or above the national 50<sup>th</sup>ile jumped from 61% to 70%. The IOWA Test of Basic Skills is divided into three sub sections; math concepts, math problems, and math computation. In math concepts, all grade levels with the exception of first grade exceeded this district objective. Our first graders fell 3 percentage points short with 67% of them achieving at or above the 50<sup>th</sup>ile nationally. All grade levels exceeded the district performance standard on the math problem section. The math computation section of this test continues to pose a challenge for our students. Last year, this was most evident with our students in grades 1, 3, and 4 who did not obtain the district standard. This year we had to add our students in grade 2 to that list as well. Mrs. Greiner and Mr. Martin continue to work with our faculty on this section and together our elementary teachers work on strategies to improve the use of math facts.

We continue to feel the IOWA tests serves us well as we begin in grade 1 to gather data so that we can immediately offer remedial services to our second grade students. The fact that we continually substantially exceed national norms on this test is a testimony to our ability to provide intervention early and often for our students.

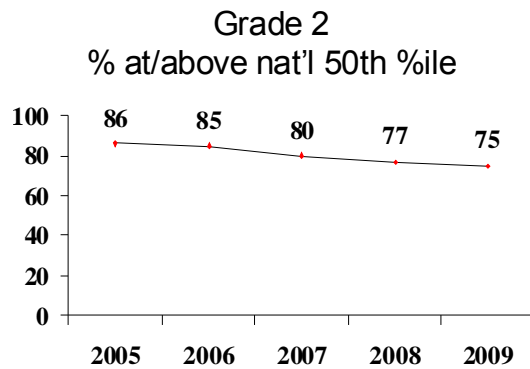
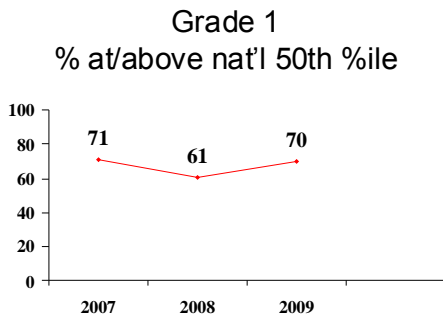
**MATHEMATICS** (cont.)

**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	67	-3	72	+2
2	80	+10	75	+5
3	83	+13	80	+10
4	74	+4	78	+8
5	83	+13	84	+14
6	78	+8	76	+6

Grade	Math Computation	Difference over 70%	Total Math	Difference over 70%
1	63	-7	70	-
2	65	-5	75	+5
3	69	-1	79	+9
4	55	-15	74	+4
5	70	+/-	80	+10
6	70	+/-	76	+6

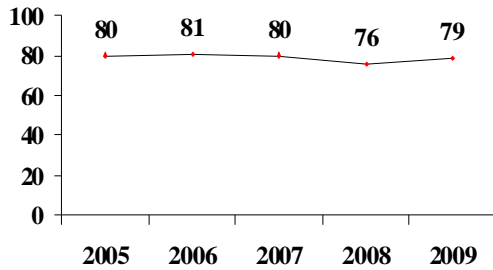
**(2005-2009 Results - ITBS Total Math)**



## **MATHEMATICS** (cont.)

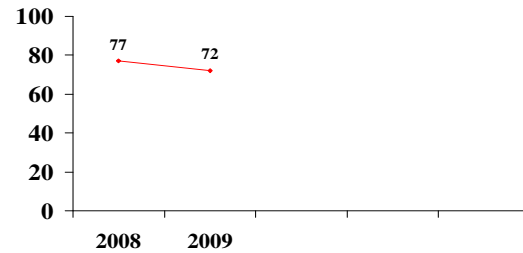
### Grade 3

% at/above nat'l 50th %ile



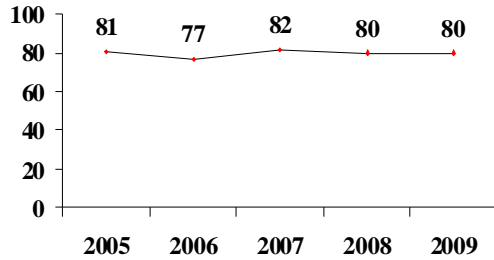
### Grade 4

% at/above nat'l 50th %ile



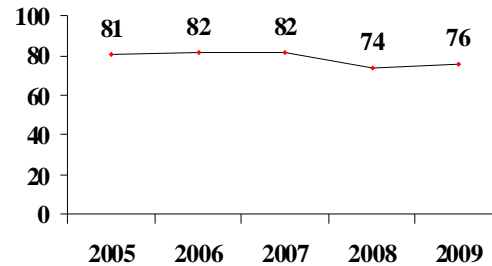
### Grade 5

% at/above nat'l 50th %ile



### Grade 6

% at/above nat'l 50th %ile



## **HIGHLIGHTS**

- This year marked the second year of implementation of the Houghton-Mifflin math series in grades K through 6. It was the first year of implementation for Maplewood staff.
- All Maplewood classroom teachers and new elementary teachers in the other schools participated in a half-day of staff development to become familiar with the program.
- Teachers throughout the district were introduced to new manipulatives and math websites at their annual grade level meetings.
- 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 textbook is in its second year of implementation. Teachers have been pleased with the new program and have refined the instructional sequence at each grade level.

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

An orientation workshop was offered to all new teachers and Maplewood staff members in October. An academic consultant from Houghton-Mifflin presented the workshop. A section of the December grade level meeting for both first and second grade teachers was devoted to math demonstrations and updates.

- Examine the results at all elementary grades of the results of the revised ITBS instrument. Were the results consistent with last year in the identification of AIS candidates? How did the results correlate with those from NYS Assessments?

Evaluation: Were the results examined and what conclusions were reached?

The Math Steering Committee examined the results in February. An analysis indicated that the results are comparable to past years. The only grade level failing to achieve the district performance standard in total math was grade one. First graders are still getting comfortable with the math subtests, which were not previously administered at their grade level. Students appear to be more successful on NYS assessments than the ITBS. There is not a strong correlation, making the ITBS a better tool for identification of AIS candidates. Sixty-eight teachers from all seven elementary schools came together over four days in March to scores the 2009 NYS Mathematics Assessment.

### **Students Served - Remedial Math**

	<b>2008-09</b>	<b>2007-08</b>	<b>2006-07</b>
Elementary Grades 1-6	168	112	129

## **MATHEMATICS** (cont.)

Remedial students who tested out of math remediation based on IOWA Tests of Basic Skills results: 79 students, 56% 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 2008-2009 there were 112 students enrolled in the program, 13% of the total population, 47 at grade 5 (11% of class) and 65 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 – 11.6  
Grade 6 – Average grade level – 13

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 2009, parents responded:

Child challenged sufficiently – 95%  
Child seems excited about math – 93.5%  
Has some math been too easy – 28% We have added more challenge again this year.  
Has some math been too difficult – 53% This is down from 66% last year even though we raised the challenge level.  
Question: My son/daughter expresses enthusiasm about “discovering” math concepts. 91%  
Question: I find it helpful to receive the 5-week Interim Progress reports. 97.5%

### **HIGHLIGHTS**

- Student results on both the N.Y.S. Assessments and ITBS were excellent as reported in the chart format. The department end-of-the-year exams may be a more rigorous assessment of their problem-solving skills. These math problems required students to utilize all of the concepts learned throughout the year. We always anticipate that the grade 5 students, while evidencing good achievement, will have more difficulty since the discovery-learning instructional method and the complex novel problems developed for a final

## **MATHEMATICS** (cont.)

exam are all first-time experiences for them. We were very pleased that the average test grade was 88%. The highest grade of 99% was achieved by two students; two students scored 98% and several others achieved grades in the 90's. The lowest-grade of 74% was recorded for one student. Average grade among the 6<sup>th</sup> graders was 87%. The highest grade was 99%; several were in the 90's; one student scored 70%.

- In May, 2009 the Maplewood Pupil Service Team placed three students in the Alternate Math program and 10 students in remedial math. A schedule was developed and a mentor designated for the teacher who will provide the instruction. Parents have expressed their gratitude.
- One of our objectives for this year is to initiate regular use of math journals to allow students to reflect on and write about mathematics. Journals were designed and produced. A packet of materials including a rationale, teacher guidelines and list of optional topics was developed. Students will be given 10-15 minutes twice each month for this activity and their reactions surveyed in May 2010.
- The annual parent information meeting in early fall was attended by well over 100 parents. We always do a rehearsal so the presentation is delivered smoothly. The teachers did a slide presentation and demonstration lesson. Except for a few questions of clarification about the junior high program, the parents seemed to feel well informed and they indicated that on the annual surveys.
- The annual 6<sup>th</sup> grade math competition was successful. We had two Siena math instructors presenting the problem and Gary Cimorelli displaying cumulative team totals as the competition progressed. Our math teachers served as time keeper, two judges and a score keeper. Students were organized by multi-school teams, problems were very challenging and enthusiasm was high.
- These math students thrive on competition. Again in 2008-2009, we participated in the National Olympiad contests and the N.Y.S. Math League contests. We sponsor and administer the contests, but we do not restrict participation. Teachers are invited to add other talented math students to the rosters.

## **OBJECTIVE**

- Review the newest standardized, validated tests for identification of gifted math students.

**MATHEMATICS** (cont.)

Evaluation: Did any recent tests reviewed in the research literature merit examination?

Although we are currently using a standardized, validated test for this purpose, Test of Mathematical Ability for Gifted (TOMAG), it is an ongoing process to review new tests as they are reviewed in the research literature. Three tests were located and reviewed. Two of these assess basic skills by grade level; we use the Iowa Test of Basic Skills in the district for that purpose. The third used to identify gifted students was tried by one of our psychologists for a year. It was cumbersome to administer and results were comparable to those from the Cognitive Abilities Test. Since the TOMAG focuses specifically on math aptitude and is easy to administer, we are continuing to use it.

**Level 7 – 8**

**2009 Seventh Grade Mathematics Assessment**  
**Total Population\***

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008
Grade 7	474	476	693	701	45%	55%	47%	37%	6 %	7%	1%	2%

**Shaker Junior High School Results on 2009 Grade 8 Math**  
**Total Population\***

	Number Tested		Mean Score		Level 4		Level 3		Level 2		Level 1	
	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008
Grade 8	487	450	700	698	47%	47%	47%	45%	3%	4%	2%	4%

\*includes students with disabilities

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

	2008-09	2007-08	2006-07	2005-06	2004-05
Percent Passing	100%	100%	100%	100%	100%
Number Enrolled	130	131	119	130	125
Percent of Grade 8 Enrolled	26%	29%	28%	29%	28%

## **MATHEMATICS** (cont.)

### **District Tests**

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

#### **Grade 7 Math**

<b>Grade</b>	<b>Number of Students/Percentage 2008-09</b>	<b>Number of Students/Percentage 2007-08</b>
A	127/30%	179/39%
B	128/30%	123/27%
C	120/27%	87/19%
D	34/8%	26/ 6%
F	31/7%	41/ 9%

#### **Grade 8 Math**

<b>Grade</b>	<b>Number of Students/Percentage 2008-09</b>	<b>Number of Students/Percentage 2007-08</b>
A	150/44%	119/40%
B	95/28%	83/28%
C	68/20%	65/22%
D	15/4%	9/ 3%
F	12/4%	19/ 6%

### **HIGHLIGHTS**

- Our results continue to be strong. On the NYS assessments, in grade 7, 93% of our students earned scores of Levels III and IV, an increase from the 92% in 2008. In grade 8, 95% of our students earned scores of Levels III and IV, also an increase from the 93% in 2008.
- Our final exam results were also again strong. In grade 7, 87% of our students earned grades of C or above, meeting our objective of having no more than 15% of our students earn grades of D or F. In grade 8, 92% of our regular math 8 students earned grades of C or above. When the Integrated Algebra Regents exam is included, that number increases to 94%.
- On the Integrated Algebra Regents exam, 95 of the 130 students (73%) earned grades of 90 or above, while 127 of the 130 (98%) earned grades at the Mastery Level, i.e. 85% or higher.

## **MATHEMATICS** (cont.)

### **OBJECTIVES**

- Analyze results of 2008 NYS math 7/8 assessments.

Evaluation: Were revisions needed? Were results analyzed of special education students and were options suggested to address deficiencies?

92% of Shaker Junior High 7<sup>th</sup> graders earned scores at Level III/IV, an increase from the 87% in 2007.

93% of SJHS 8<sup>th</sup> grade students earned scores at Levels III/IV, an increase over the 88% earning these scores in 2007. We continue to be concerned about the results of our students with disabilities. We have instituted the 7<sup>th</sup> and 8<sup>th</sup> grade Math G program to address this need and will monitor it closely.

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

Were curriculum/instruction revisions needed?

Integrated Algebra Regents results were strong; 84% of Math 9R students earned grades of 90 or above, 99% earned scores of 85 or above.

- Continue to facilitate technology integration into math instruction.

Evaluation: Did more teachers avail themselves of current technologies?

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

- Explore via the District Steering Committee the feasibility of implementing math final exams in grades 3-6.

Evaluation: Was this topic discussed? Were decisions made?

This has not yet been addressed. However, it is a major objective for next year.

### **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%

**MATHEMATICS** (cont.)

**Test B**, SHS - 366 tested - (99% of those enrolled)

% passing = 93%

\*This figure includes junior high student results

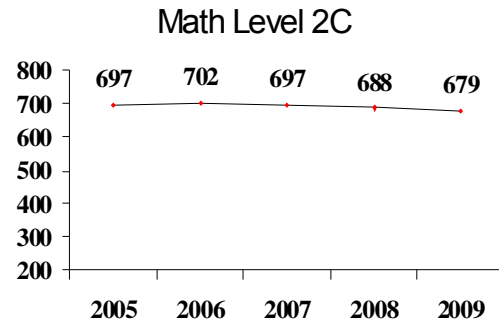
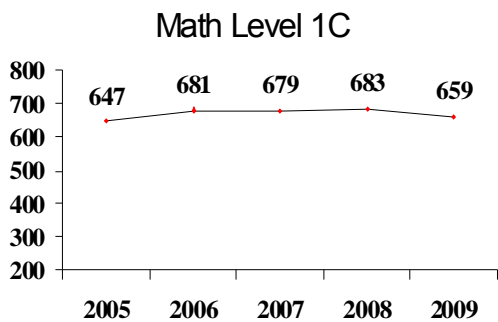
Percent of students scoring 85, or higher, on June Regents examinations:

Test A/Integrated Algebra	42%
Test B	44%

**CEEB Math Achievement Tests** -

	Math Level 1C	Difference over/under Performance Standard - 681	Math Level 2C	Difference over/under Performance Standard - 696
	659	-22	679	-17
<b>Number Tested</b>	54		38	

**(2005-2009 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	91%	+1
Number tested	56	
NYS Percent scoring "3" or higher	64	
US Percent scoring "3" or higher	59	

**MATHEMATICS** (cont.)

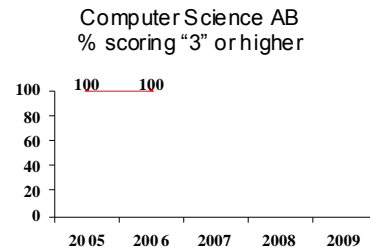
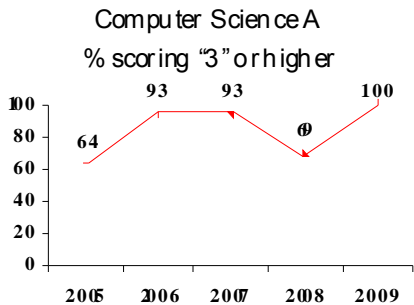
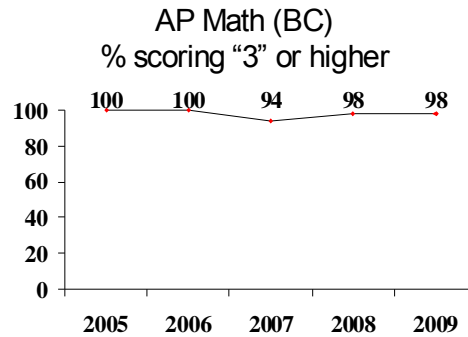
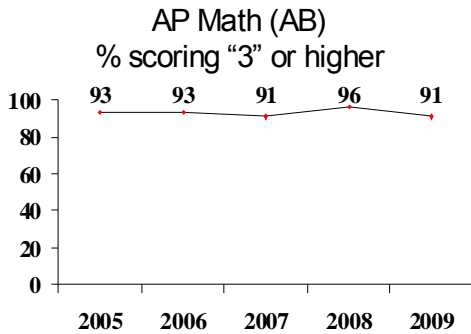
	<b>Math BC</b>	<b>Difference over 90%</b>
SHS Percent scoring "3" or Higher	98%	+8
Number tested	41	
NYS Percent scoring "3" or higher	80	
US Percent scoring "3" or higher	80	

	<b>Computer Science A</b>	<b>Difference over 90%</b>
SHS Percent scoring "3" or Higher	100%	+10
Number tested	8	
NYS Percent scoring "3" or higher	59	
US Percent scoring "3" or higher	62	

	<b>Computer Science AB</b>	<b>Difference over 90%</b>
SHS Percent scoring "3" or Higher	NA	
Number tested	NA	
NYS Percent scoring "3" or higher	78	
US Percent scoring "3" or higher	76	

(NY and US data are from 2009.)

**(2005-2009 Results - AP Math)**



## **MATHEMATICS** (cont.)

### **CEEB Math Aptitude and Math Achievement Tests**

On the CEEB Scholastic Aptitude Test, SAT math, Shaker High School students achieved a mean score of 573, three points higher than the previous year. This score exceeded Suburban Council, New York State and national means by a substantial margin. In addition, the percentage of students scoring over 600 increased from 43% to 45%, the highest result in the last five administrations at Shaker High School.

Two math achievement tests are offered at Shaker High School: Math Level 1C and Math Level 2C. With Math Level 1C, 54 students took the test and our mean score declined from 683 the previous year to 659 in 2009. The score of 659 while significantly lower than the previous years five year high, represents the second lowest mean score during the period 2005-09. The Math Level 2C examination, students scored a mean of 679, also lower than 688 the previous year. For the Math Level 2C exam the score of 679 exceeds national norms but is below Suburban Council and New York State mean scores.

### **CEEB Scholastic Aptitude Test (SAT Math)**

	<b>2009</b>	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>
SHS Mean Score	573	570	567	578	569
NYS Mean Score	502	504	505	510	511
National Mean Score	515	515	515	518	520
Suburban Council	558	556	556	560	560
Percent of 12 <sup>th</sup> graders taking exam	72%	78%	84%	87%	81%
SHS Percent over 600	45%	43%	38%	44%	38%

### **HVCC COLLEGE IN THE HIGH SCHOOL PROGRAM**

	<b>2008-09</b>	<b>2007-08</b>	<b>2006-07</b>
No. of IRP 4 Students Enrolled in HVCC	29	35	36
Percent of Total Senior Class Enrolled	5.8	7.0	8.3
No. of Students who Received College Credit	29	35	36

## **MATHEMATICS** (cont.)

### **UNIVERSITY IN THE HIGH SCHOOL PROGRAM**

	<b>2008-09</b>	<b>2007-08</b>	<b>2006-07</b>
No. of Students Enrolled (Statistics, Topics, 12R)	203	184	203
Percent of Total Senior Class Enrolled	40.6	36.8	46.8
No. of Students who Received College Credit	201	184	199

### **Regents Competency Tests (RCT)**

#### **Grade 9**

<b>Subject</b>	<b>Number Failing RCT</b>		<b>Percent of Class</b>	
	<b>2008-09</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2007-08</b>
	9	20	2%	4%

#### **Grade 10**

<b>Subject</b>	<b>Number Failing RCT</b>		<b>Percent of Class</b>	
	<b>2008-09</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2007-08</b>
	9	4	2%	1%

#### **Grade 11**

<b>Subject</b>	<b>Number Failing</b>		<b>Percent of Class</b>	
	<b>2008-09</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2007-08</b>
	0	5	0 %	1%

#### **Grade 12**

<b>Subject</b>	<b>Number Failing</b>		<b>Percent of Class</b>	
	<b>2008-09</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2007-08</b>
	0	0	0%	0%

## **HIGHLIGHTS**

### **Integrated Algebra Regents Results**

- 91% (high school only) passing rate, includes 99% 9R, 90% IRP 2, and 38% Unified 2.
- In addition, sixteen students who had failed 9R, IRP 2, or Unified 2 in June passed the course and Regents exam in summer school. This AIS service continues to be very effective.

## **MATHEMATICS** (cont.)

- 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.
- Teachers in our Unified program are evaluating their instructional practices to improve assessment results for our Unified 2 program.
- Students in our Unified program who were not successful in passing the Integrated Algebra Regents exam are enrolled in our Math 9 AIS lab to support them in passing the exam in January of this school year.

### **Geometry Regents Results**

- 96% passing rate in June for the first administration of the Geometry Regents exam.
- Twenty students who were unsuccessful on the June exam passed in August, raising the passing rate to 98%.
- Eight departmental review classes were held in the weeks prior to the Regents. Each class was led by two Geometry teachers. Topical departmental written packets were used. Information about these classes was disseminated in the same manner as that of the Algebra review classes.
- A summer curriculum workshop was held during the summer to examine the Regents exam results and to make necessary curriculum changes. Teachers in this program instructed a rigorous program that provided students with a strong understanding of geometrical concepts.

### **Math B Regents Results**

- 87% passing rate in June
- Thirty-one students who were unsuccessful on the June exam passed in August raising the passing rate to 92%.
- Math 11 course meetings have taken place and will continue to take place this year to discuss curriculum and instruction aimed at improving assessment results. This year, the Algebra 2/Trigonometry curriculum will be instructed in our Math 11 program.
- 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. Eighty-three percent of the students in our Math 11B program passed the Regents exam in January fulfilling their Advanced Regents diploma requirement. Three out of the seven students who were not successful passed in June.

## **MATHEMATICS** (cont.)

- Mrs. Buck, Ms. Gabriel, and Mr. McDonald instructed extra review classes for students to prepare them for the Math B regents. I commend them for their efforts.

### **Unified Math**

- Although this year's group of Unified 1 students was very weak academically, they were focused and motivated to improve their mathematical skills. 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 continued to be revised this year. The curriculum included many rigorous math topics and skills. Teachers in our Unified 2 math program were not pleased with the 38% percent passing rate on the Integrated Algebra exam and we will continue to evaluate our instructional practices to improve student achievement. Due to the rigor of the work completed in class, some of the students who were unsuccessful on the Algebra Regents easily passed the RCT.
- The 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 2010 Algebra Regents exam.
- The new Unified 4 Math course (two sections) was very successful. Twenty students who typically do not take math in their senior year were afforded the opportunity to further their mathematical knowledge by taking this course. The course was geared to prepare students to be successful in a mathematical course at the two-year college level. 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. Dirdadian, took on this new assignment and reported a number of success stories.
- 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.
- 91% of AB and 98% of BC Calculus students earned a grade of 3 or better. 49% of BC students scored at level 5 and 39% of AB students scored at level 5.
- 100% of AP Computer Science students scored a 3 or better. Enrollment in this class dropped to 8 students, but this year 22 students are in the program.

### **Additional College Programs**

- This year's enrollment in the UHS program was 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 203 students earned credit for the college class.

## **MATHEMATICS** (cont.)

- HVCC courses continue to be offered to the IRP 4 students. This year, 29 out of the 45 IRP 4 students enrolled in the college course with all of the enrolled students earning college credit.
- Forty-six percent of the senior class enrolled in one of the programs above. An additional 105 students or 21% 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 23 out of 26 students passing the January Integrated Algebra 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.
- Sixty-seven percent of the 44 students enrolled in the Math 10 lab passed their midterm exam. 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 B program will be phased out and replaced with the Algebra 2/Trigonometry curriculum. The only students who will be preparing for the Math B exam in 2009-2010 will be students in our Math 11B program. Students in our Math 11R and 11H programs will be preparing for the new Algebra 2/Trigonometry Regents exam in the 2009-2010 school year.
- Students in our Math 10R and 10H programs performed well on the first administration of the Geometry Regents exam with 96% of the students passing and 53% above an 85.
- During this summer 2009, a group of Math 11R/H teachers participated in a curriculum workshop to make final preparations for the implementation of the new Algebra 2/Trigonometry 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 Algebra 2/Trigonometry Regents. As with the Algebra and Geometry Regents, the state grade conversion table will need to be closely monitored in our Math 11 program.

## **MATHEMATICS** (cont.)

### **Instructional Technology**

- The momentum of interest and enthusiasm for Instructional Technology among math teachers continued to grow once again this year. Three Smartboards, several Mimios, and an Elmo, along with permanently mounted projectors, were shared among fifteen teachers in a total of 9 “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. Several Math teachers attended staff development courses on integrating the Smartboard software into their class activities. Mrs. O’Donnell instructed two Smartboard staff development courses for her colleagues.
- Teachers’ knowledge of technology and IT served them well in their search for new Math 11 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 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. Under Mr. Kaercher’s leadership the peer-tutoring program served approximately 100 students. Over 40 students from our higher level math courses donated their time to assist their peers in achieving success in their math course.
- This was our most successful year for Math Club. Mrs. Gibson did an outstanding job of leading the group of high achieving, exceptionally self-motivated math students. Mrs. Gibson creatively developed an agenda for student’s that included monthly fun math learning activities. One highlight was a Math scavenger hunt, in which students had to solve math problems and obtain clues around the high school to complete a puzzle. Math Club also sponsored The Pi Day Pie Eating Contest which was an overwhelming school-wide success.

## **MATHEMATICS** (cont.)

### **OBJECTIVES**

- Revise Unified 2, IRP 2, Math 9R curricula based on results of the first implementation of the Integrated Algebra Regents exam in June 2008.

Evaluation: Was a discussion held at the end of the 2007-2008 school year to analyze results of the Regents exam? Based on this information, were meetings held to discuss necessary curriculum and timeframe revisions?

A one-day summer workshop was held and included 9R, IRP 2, and Unified 2 teachers. Specific course curriculum outlines were revised, timeframe of topics were discussed and incorporated into lessons, and departmental assessments were changed. Lessons 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. Throughout the school year, course meetings were held both after school and during workshop days to review the results of the first implementation of the Integrated Algebra Regents exam. The exam was analyzed and instructional changes were made to units where areas of improvement could be achieved. A great deal of revisions were made to the IRP 2 program to provide continuity of curriculum with our IRP 1 program. Teachers in the Math 9 program continually collaborate to improve instruction in their classes and to enhance their lessons by using instructional technology resources.

- Implement new SED Geometry curriculum and textbook in Math 10R and 10H. Revise timeframe, class activities, and assessments to reflect these changes. Prepare students for first implementation of the new Geometry Regents examination in June 2009.

Evaluation: Was a Summer 2008 workshop held to revise curriculum? Did teachers revise lessons, timeframe, and assessments to correlate with the new text? Were enrichment topics/activities developed for the Honors curriculum?

A four-day summer workshop was held and included all Math 10R/10H 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 to enhance the visualization of mathematical geometric concepts. Throughout the school year, course meetings were held both after school and during the workshop days to review the proposed timeframes and make necessary revisions. The SED sampler of Geometry test questions was published in late

## **MATHEMATICS** (cont.)

October and teachers used this information to prepare topical packets for May/June departmental review classes. Math 10 teachers are consistently discussing their curriculum on a daily basis and they are making any necessary revisions to improve student success. The Math 10 Honors teachers created several enrichment activities and problem sets to engage our higher-level learners. Teachers met to analyze the results of the first mid-term administration and to make necessary revisions to the curriculum for next school year. A one day summer workshop is planned for this summer to analyze the results of the first administration of the Geometry Regents exam. During this workshop, teachers will engage in elaborate discussion and reflect on how to improve lesson activities to foster positive learning experiences for students.

- Begin to plan for 2009-2010 implementation of the new state Algebra 2/ Trigonometry course. Revise syllabi and local assessments to reflect these changes.

Evaluation: Did a sample of Math 11A, 11B, 11R, 11H teachers participate in a curriculum workshop? Were course outlines and timeframe of topics revised and/or rewritten? Were current Math 11 textbooks, along with newly published texts, reviewed?

During a two-day summer workshop, two 11R teachers, one 11H teacher, and one 11A teacher organized the New York State Algebra 2/ Trigonometry guidelines and strands into Math 11 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 Algebra 2/Trigonometry took place. A variety of available textbooks were examined and used as resources for the new topics in the curriculum. During the year, articulation occurred with textbook publishing companies to explore their Algebra 2/Trig texts and associated technology resources. All Math 11 teachers attended several meetings and have spent considerable time reviewing the resources provided. A decision will be made before the end of the school year. This summer a four-day curriculum workshop is planned involving all Math 11 teachers to finalize our Algebra 2/Trig curriculum and to create materials for the implementation of the new curriculum in the 2009-2010 school year.

- Implement the revised Unified 3 course to reflect a post-Algebra curriculum.

Evaluation: Was a workshop held to review topics, timeframe, and assessments? Were hands-on activities and technology related lessons created?

## **MATHEMATICS** (cont.)

During a three-day summer workshop, two Unified 3 teachers spent their time discussing curriculum for both our Unified 3 and 4 programs. In preparation for implementing a post Algebra 1 Regents curriculum, Intermediate Algebra topics, along with several consumer math topics, were organized along with appropriate timeframes. Resources from the Intranet and Internet were investigated, along with the use of the Smartboard, Mimio, and Elmo Instructional Technology tools. Throughout the school year, Unified 3 teachers worked hard with students who had not passed the Integrated Algebra Regents exam at the end of Unified 2. A high percentage of these students were successful in January on the exam. Throughout the school year, teachers in the Unified 3 program have collaborated developing hands-on lesson activities involving consumer mathematics. Teachers have created several projects to assist students with applying logical consumer math principles. A new mid-term exam and final exam have been developed. Feedback from students and teachers has been positive. The goal of the Unified 3 and 4 programs is to provide students with the mathematical skills to be successful in an introductory collegiate algebra course and to apply those skills to “real world” problem situations.

- Implement and monitor the achievement of students in the new Unified Math 4 course.

Evaluation: Was a workshop held to build on the curriculum outline developed during last summer’s workshop? Did articulation take place among Unified 3 and Unified 4 teachers and representatives from HVCC regarding the appropriateness of selected topics? Were textbooks reviewed? Did teachers integrate technology into lessons and class activities?

During a two-day summer workshop, one Unified 3 teacher and one Unified 4 teacher discussed curriculum for both years of this program. A course outline and syllabus were developed and lesson plans, assessments, and hands –on activities were created involving Intermediate Algebra topics. The possible use of our former IRP 4 HVCC Intermediate Algebra text was investigated and was 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. There has been ongoing articulation among Unified teachers and the Math Supervisor regarding the progress of this new fourth year math course. This course has allowed our most challenged math learners to earn four math credits. One of our teachers has done an exceptional job with providing students with a strong foundation with intermediate algebra skills in order for them to be successful at the collegiate level.

- Monitor the utilization and effectiveness of the new J-wing Computer Science lab and the renovated M-216 classroom area to be used for Peer Tutoring.

## **MATHEMATICS** (cont.)

Evaluation: Was the layout of the new Computer Room an improvement over the M216 lab? Was the teacher able to move around more efficiently and assist students more readily? Were programs, particularly in the Advanced Placement course, running better and faster? Were peer tutors meeting with assigned students regularly and utilizing the resources available?

Our computer science teachers are enjoying the new layout of the computer lab because it allows them to see almost every student's screen from one location. The space is more accessible and an easier one in which to maneuver. The teachers can demonstrate the programming language for the student's using the Smartboard, and there are no issues with students being able to physically see the material on the screen. The lab is equipped with a Smartboard and projector for the use of higher-level student engagement activities. Our peer-tutoring program has served over fifty students this school year as over 40 upper-level math students volunteered their time to assist their peers who were experiencing difficulties in their math classes. One of our teachers created a website for the peer-tutoring program that students can access to obtain math resources and to provide us feedback regarding their tutoring assignment. He held countless meetings with our students to make appropriate tutoring matches. These students have been meeting in room M216, which is our newly renovated Math resource center. This room is also being utilized by our Unified teachers because it is attached to the Unified classroom. This space is being used by our teacher aides to provide extra support for students that are experiencing difficulties and need extra practice.