

Approved: November 12, 2008

HOLLIS SCHOOL BOARD

OCTOBER 8, 2008

MEETING MINUTES

A regular meeting of the Hollis School Board was held on Wednesday, October 8, 2008 at 5:07 p.m. in the Community Room of Hollis Town Hall.

Chairman Bill Beauregard presided:

Members of the Board Present: Jim McCann, Vice Chairman  
Alison Haytayan, Board Secretary  
Susan Benz  
Maura Loftus

Members of the Board Absent:

Also in Attendance: Susan Hodgdon, SAU41 Superintendent  
Elizabeth Allen, Principal, HPS  
Deb Trottier, Assistant Principal, HPS  
Candice Fowler, Principal, HUES  
Kathy McBride, Assistant Principal, HUES  
Dawna Duhamel, Business Administrator  
Carol Mace, Dir. of Curriculum  
Bob Kelly, Dir. of Special Education  
Robert Blais, Dir. of Maintenance

AGENDA ADDITIONS AND DELETIONS

Superintendent Hodgdon informed the board of an addition to the agenda being the nomination of a staff member at the upper elementary school. This item will be covered under the Superintendent's Report.

Chairman Beauregard stated it could be necessary to revise the order of business to ensure the start of the public hearing at the posted time.

PUBLIC INPUT

Dave Oshefsky, President, Teachers' Union

Questioned the meeting start time of 5:00 p.m. Chairman Beauregard responded the meeting start time has been changed to best accommodate board and staff members.

APPROVAL OF SCHOOL BOARD MINUTES

Hollis School Board . . . . . September 10, 2008

Chairman Beauregard provided the board with proposed amendments for their review and consideration.

Approved: November 12, 2008

**MOTION BY BOARD MEMBER MCCANN TO TABLE THE MINUTES OF SEPTEMBER 10, 2008  
UNTIL THE NOVEMBER MEETING  
MOTION SECONDED BY BOARD MEMBER HAYTAYAN  
MOTION CARRIED**

CORRESPONDENCE

Superintendent Hodgdon is in receipt of two communications; one from a resident who is relocating and wishes to keep her two children in the district until the end of the year. After discussing the request with Principal Fowler, and as one of the children has emotional needs, the determination was made to entertain a transition period until the Thanksgiving timeframe.

Chairman Beauregard questioned whether the family would be charged tuition after relocating. Superintendent Hodgdon suggested that could be looked at after the relocation takes place. Policy is board has final approval, and tuition be charged for out-of-district.

*The board was in agreement with the decision to entertain a transitional period.*

Second communication was from a family relocating into district. The family has been paying tuition (since September), as they believed they would be in district by October 1st. It is currently believed the relocation will occur by the end of the school year. The family has owned property (empty lot) in town for 5 years, and would like the board to consider a reduction in tuition.

Superintendent Hodgdon cited the policy as having no visible flexibility. Chairman Beauregard remarked about the possibility of inequity for other families if the board were to decide to grant the request. Superintendent Hodgdon provided her opinion the policy has worked well and should remain in effect.

*The overall consensus of the board was to adhere to the current policy.*

ADMINISTRATION REPORTS & DISCUSSION

Hutter Checklist Status Report/ Water System Report

Chairman Beauregard stated, as the merits of the request will be compared with those of other potential expenditures, what is needed is a report that contains a complete description and status of the system. That report should include a list of all components in the water system, i.e., Rocky Pond Station, Hughes, HPS, the lines between Rocky Pond and the Middle School, those between the Middle School and the Farley building, etc., as well as a status for each component, i.e. age, condition.

Mr. Blais remarked what he provided the board was an explanation of the system and how it runs. He stated the unknown components to be the dirt lines that run along Rocky Pond Road to the middle school. They are estimated to be approximately 17+ years in age. Therefore, pressure testing is not recommended due to the stress that could cause the lines. At present, there is no evidence of major leaks or ruptures.

Ms. Benz stated she had not received the information being discussed. Mr. Blais offered to expand upon what has been done, and provide a revised report to all members of the Board by the end of the following day.

Chris Hyde, Chairman Budget Committee

Stated the need for the report to include a risk and cost assessment. As the system services several parts of the district, perhaps the costs can be distributed outside of the Hollis School District.

Mr. Blais informed the board the T-111 replacement, ductwork cleaning and pavement replacement have begun. He will be providing a list of items completed and awaiting completion. The two large ticket items remaining on the report are the HVAC system at the Primary School and the bathroom partition replacement. He will be waiting for the end of the heating season to see where they stand financially.

Chairman Beauregard requested updated checklists be provided with each report until all work is complete, and the final checklist can be attached to the report. Ms. Benz requested the board be provided with reports the Friday prior to the scheduled meeting date.

Mr. Blais informed the board of energy saving techniques that have begun, i.e., turning off equipment, lights, etc.

#### FY09 Expenditures/Revenue, Heating Oil Contract

Ms. Duhamel informed the board aside from \$9,000 unanticipated maintenance expenditures, there are no alarming issues to report. Once the tax rate is set the final revenue amount will be included allowing for comparison between budgeted and actual.

Although the oil contract with Lorden has yet to be signed, they have tied in at a price of \$3.49. Has been inquiring about price reductions, but is unsure that can be accomplished as futures have been bought, therefore, the price is locked in. Has seen a \$14,000 difference as a whole for the district.

Chairman Beauregard asked for clarification of the vendor buying future contracts on the districts' behalf and what restrictions that may place on the district. Remarked the Chair of the Board of Selectmen has spoken on the possibility for schools to renegotiate. Ms. Duhamel responded she has not had that conversation with the vendor, but has not signed the contracts either. She went on to state if the vendor is unable to re-negotiate, she has given a verbal commitment that needs to be honored.

Mr. McCann cited the feeling at the time the price was locked in as being an opportunity to take advantage of a drop in the market along with the concern if other groups in town were not locking into a rate then they would all be in the same position should the market double for example. The hope is if the town is able to take advantage of a lower rate the average will work out better.

Ms. Duhamel suggested if the market continues to be speculative, it might be worthwhile to reconsider how to purchase oil. Chairman Beauregard asked if there was an alternative contract that would contain downside protection. Ms. Duhamel stated there is a cost to that as well (\$.20 at the time), however, that was not offered.

Chris Hyde - encouraged attempts to re-negotiate given the contract has yet to be signed. He would be surprised if the full contract had been let as of yet.

Chairman Beauregard remarked the Budget Committee had questioned whether short-term credit had been utilized for any purpose to which Ms. Duhamel responded it had not.

With regard to the potential supplier of bio-diesel fuel, Ms. Duhamel stated the project is going out to bid shortly. The current cost of bio-diesel is approximately \$.25 more a gallon. However, the grant agreement has a subsidy of approximately \$12,500 to offset the cost between the two fuels for a period of one year. The agreement does not require continued use of bio-diesel after the initial year.

Currently working with consultant M.J. Bradley and have put out bids for equipment. Expect decision to be made within week.

Grant agreement suggests the purchase of certain types of filters, some of which use platinum. As the cost of platinum has doubled since grant receipt, the intent is to outfit a total of 26 buses; 10 utilizing the platinum filter and 16 of a less expensive filter, which will still produce a reduction in harmful emissions.

### PUBLIC HEARING

Pursuant to RSA 198:20-c II, a Public Hearing was conducted at 6:06 p.m. on Expendable Trust Fund Expenditure Requests:

Ms. Duhamel informed the board of a request to expend \$12,500 for window replacement at the SAU administration building. In question is the replacement of the remaining single pane windows (30) with double pane to meet code requirement. A brief discussion ensued with regard to the proximity of the building to the historic district and the price of traditional mullins (\$25) versus utilizing snap-ons. The general consensus was that of utilizing snap-on mullins on the windows visible from the road (14).

Chris Hyde - stated his opposition to the cost of in-glass grids as quoted.

**MOTION BY BOARD MEMBER MCCANN TO ACCEPT THE RECOMMENDATION TO REPLACE THE WINDOWS, TO UTILIZE SNAP-ON MULLINS, AND APPROVE THE EXPENDITURE OF AN AMOUNT NOT TO EXCEED \$12,500**  
**MOTION SECONDED BY BOARD MEMBER BENZ**  
**MOTION CARRIED**

Three projects are being considered for the Hollis School building; ductwork cleaning at a cost of \$28,100, TI-11 siding replacement at a cost of \$11,000, and tile work at a cost of \$8,975 for a total anticipated expenditure of \$48,075. The original Hutter quote of \$60,000 had included sheet metal, and has been revised resulted in the new quoted pricing. The price includes the cleaning of the ductwork at both buildings. Vendor recommends 5-6 years between cleanings. This is an expenditure that can be included in future budgets.

Chris Hyde - suggested the price might be able to be re-negotiated given the current economic difficulties.

In response to the question of whether or not multiple bids had been sought, Ms. Duhamel stated multiple bids would be solicited prior to a contract being signed. The timing of the project coming before the board for a vote was predicated by the desire to be able to have the work done on a schedule that best fits the school.

Robin Bitten – questioned whether the cleaning of the ductwork would address the mold issue.

Ms. Duhamel's response was there is "no factual mold issue". Inspections have been done and resulted in no verifiable mold problems. The ductwork will be cleaned and any necessary repairs will be made resulting in increased airflow. Working with the Local Government Center (insurer) who is providing testing to ensure air quality. Will follow best management practices (BMPs), i.e., routine duct cleaning, filter replacement, etc.

Ellen Lensak - asked for clarification of the maintenance practices to be followed once the work is complete. Mr. Blais reiterated the BMPs that would be followed.

Chris Hyde - questioned whether the cleaning would be dry vacuuming or steam. He believed the price to be high for dry vacuuming. Mr. Blais responded the price also includes the cleaning of classroom equipment (univents).

Chairman Beauregard reiterated the requested expenditure is an amount not to exceed, and competitive bidding has yet to occur.

Mr. Blais informed the board of three remaining classrooms on the bottom floor of the Upper Elementary School where carpeting needs to be replaced with tile. A cleaning attempt last year stirred up an odor. That along with the wet season over the summer months has resulted in the need for removal of the carpets. Ms. Fowler stated her opinion if the carpet issue were to arise again, they would not be able to have children in the affected rooms. This is an item that was cut from the budget last year. Ms. Fowler stated her opinion this is an item that needs to be addressed sooner rather than later.

**MOTION BY BOARD MEMBER MCCANN TO APPROVE THE THREE PROJECTS AT AN AMOUNT NOT TO EXCEED \$48,075**  
**MOTION SECONDED BY MEMBER BENZ**  
**MOTION CARRIED**

*The public hearing was declared closed at 6:32 p.m.*

Chairman Beauregard informed the board of a question posed by the Budget Review Committee concerning whether the Board and Superintendent would consider a Saturday annual meeting, in the hopes of increasing attendance, as well as the idea of placing the school annual meetings after the town meeting so that the larger school budgets could be considered in the context of the town budget.

Chris Hyde - stated the suggestions as being conduct the Co-op meeting at the end of the town meeting, hold the Hollis School Board annual meeting on a Saturday, or start the school district meeting at 6:30 p.m.

Superintendent Hodgdon has not yet had conversations with school administrators to look at a Saturday meeting from a personnel perspective, but is agreeable to a 6:30 p.m. meeting start time. Several members of the board expressed their belief a Saturday meeting would not necessarily increase participation. However, they were agreeable to a 6:30 p.m. start time.

They would like to see the town agenda include discussion of the other budget meetings, and perhaps a summary of the budgets being considered.

Ms. Duhamel informed the board she has a draft of the FTE report, which will be forwarded once proofed. Could have as many as four years of history to review for the coming budget cycle.

#### Math Plan Research Projects Report, 2007 NECAP Open Items

Chairman Beauregard informed the board and the public a review of the math program has been underway since January 2007. The administration convened a committee that worked from January 2007 to January 2008. Resulting from those meetings were two reports the superintendent was asked to review and forward with recommendations. A committee was convened to address that request.

The final plan, which consists of three phases. Phase I having been implemented in the last weeks of the prior school year, and Phase II, which consists of a series of research projects, was before the board for discussion.

Members of the summer research committee were before the board seeking feedback. Committee members present included; Dorothy Ball, Math Department Chair, Hollis Brookline High School, Betsy Keegan, Hollis Upper Elementary School, Caryn Miller, Hollis Upper Elementary School, and Karen Pillion, Brookline Math Coordinator.

The following feedback was provided with regard to the introduction:

- The word "objectives" on the bottom half of page 2 should be changed, as the items appear more task related.
- Lack of reference to evaluation on GLEs.
- Third paragraph on page 3, related to distribution, can be removed as public dissemination has occurred.

In review of the seventy recommendations contained within the report, the following feedback was provided:

**Recommendation #8** – Ms. Hatayan asked if the recommendation was to place emphasis on the use of traditional algorithms. What was being suggested was the introduction of all information in grades 3 and 4 (frontloading) and maintenance in grades 5 and 6.

**Recommendation #9** – Should rephrase the last sentence regarding the end result. When asked if students would be affected this year, Ms. Ball remarked the effort would have to be a collaborative one between all grade levels, and would take time. One of the things implemented at the beginning of this school year was the suspension of non-traditional algorithms (for the year).

Chairman Beauregard expressed a concern teachers had perceived that as being dictated by the board and precluded those who saw the alternative method as a necessary tool from being able to utilize that tool.

Principal Fowler responded she and Principal Allen met with the teachers prior to the start of the school year and discussed the math report. One recommendation that resulted from that was to stick with the use of traditional algorithms. No teachers expressed concern over using a traditional method. Although a concern was raised that some students may struggle with the concept, it is felt that all students can learn it may simply take more practice and time for some students. Ms. Ball stated the need might exist to provide additional assistance for those who take longer to adjust.

When asked how success would be measured, Chairman Beauregard remarked that question was raised at a previous meeting wherein it was stated when the NECAPs are reported next year; there would be an effort to also include local assessment data. The combination of the two would provide the sense of how we are progressing.

Ms. Ball remarked on the accomplishments of a group of students who had 2 years of 7<sup>th</sup> grade algebra (40-50 kids); presently 31 of those students are sitting in AP statistics in the 12<sup>th</sup> grade. These students learned skills on a different non-traditional continuum than had ever been seen as they were introduced to it at a younger age, and learned and processed it in a different way.

**Recommendation #11** – Ms. Loftus questioned the amount of current students not meeting the goal. The response was 30-40 out of a graduating class of 200.

**Recommendation #14** - When asked what technology was being requested; Ms. Keagan responded a variety of tools to assist with automaticity/actual hardware items.

**Administration** - SERESC should be spelled out the first time it appears in the text.

Chairman Beauregard asked for the sentence that reads “In response to poorly defined job descriptions, board members, administrators, and community members were forced to take on responsibilities that were clearly beyond the scope of their position” to be qualified specifically with respect to board members.

Principal Fowler responded several different interpretations of what is being recommended and what is being required have existed specifically on the issue of math. She remarked about a previous board meeting wherein it was stated you will have parents on the math report committees. One parent was included and then the board, at the time, came back and said all three who expressed an interest should be included.

Chairman Beauregard remarked the issue came up before the board in January of 2007. During the September presentation on the math curriculum, the administration made the decision to accelerate the review by going from individual review to that of a committee. The board was told they would typically have 2 members of the public on such a committee. At the time, the board questioned why all three parents who had expressed an interest could not sit on the committee. Principal Fowler stated there existed uncertainty as to whether the comment was meant as a question or direction.

Mr. McCann stated, from the perspective of the board, it should be expected to have as much or more community involvement as there has been in the past, and that expectation should be accepted. He believes the existence of parental involvement on the committee assisted in the implementation of recommendations 1-4 last spring. Stated he would not want teachers to believe if a parent were on the committee, the board or the parents were over-stepping their bounds. Ms. Fowler did not believe that was the case.

Chairman Beauregard remarked the board is very sensitive about that issue. Their role is not to tell anyone what to do. They are agents of the Department of Education. From the statutes, the Department of Education created administrative rules. One of the administrative rules (303 (g)) details the role of the school board, and states they are to establish goals with the superintendent and ensure those are embedded in the curriculum, perform program reviews, and make results known to the public.

**Recommendation #20** – When asked about the math coordinator position, Ms. Ball informed the board this recommendation resulted from a faculty meeting. Teachers felt the role was vital. Ms. Benz questioned whether the need was per district or building, Ms. Ball provided the unanimous opinion of the teachers as one per building.

Chairman Beauregard remarked the board has heard from administration concerning the coaching position, and is now hearing concerns about coordination effort. Ms. Haytayan stated the coaching was a temporary solution until a decision could be made on a coordinator. Ms. Ball added the proposal for the coaching position was to put in place one crucial component of what the math coordinator would be tasked to do.

Chairman Beauregard stated the board will have to prepare a budget for presentation and approval of the residents, and would like to see if some of the identified tasks can be accomplished with existing resources understanding another task would likely not be accomplished. They need a clear understanding of the implications while preparing a budget.

Principal Fowler remarked their proposals were that of coaching and task teams at the building level. As the school year has just begun teachers have not had a chance to participate in task teams, however, the recommendation has been well received. She feels strongly about approaching this from a building level.

Superintendent Hodgdon cited the need to see some of these things in play for a period of time prior to meeting with the four administrators to begin conceptual budget conversations.

**Recommendation #20** – Asked if the statement related specifically to the teachers' report, Ms. Allen stated it was the result of a faculty gathering. Ms. Keagan used the example of the assistance received during NECAP testing, which was phenomenal as it was the sole focus. She stated her concern of whether the kind of energy needed would be sustainable. Chairman Beauregard questioned whether the support of an administrative function position would be needed. Superintendent Hodgdon remarked the next step is to break out the key tasks that need to be done and look at the whole picture.

**Recommendation #25** – Mr. McCann questioned whether the reference was in addition to the individual currently being interviewed, Ms. Ball's response was that is the individual being referred to, but they believe there should be more positions. Chairman Beauregard reminded the board, when the position was approved last year, data indicating the position had an impact was requested, and would be required for justification of other position(s).

**Mathematically Promising** – In explanation of the third bulleted item, Ms. Ball stated this as a recommendation that a combination of exhibited traits and test results be utilized to make the determination rather than one or the other.

**Recommendation #47** – Chairman Beauregard questioned whether student performance data was used as a means of providing feedback to professional development. Ms. Ball suggested a professional development model, which encourages review of data to indicate strong and weak points could be useful if more than one year's worth of data is utilized.

**Recommendation #48** – Chairman Beauregard stated his belief the board has supported development budgets proposed by administration each year. The need for additional funding needs to be made clear during the budget cycle.

Principal Fowler informed the board of discussions surrounding whether professional development should be done while school is in session or during the summer months.

**Recommendation #53** – Mr. McCann asked if comprehensive reporting (de carte menu) would be made available to parents. Principal Fowler suggested that issue could be raised internally.

**Recommendation #54** – It was suggested not all students understand the difference between proficiency and ability when being grouped. Principal Fowler believes providing that understanding to the students furthers their success.

**Recommendation #55** – When asked if the NWEA data was considered, Ms. Keagan responded; until three years' of data exists a local norm cannot be determined. Superintendent Hodgdon added NWEA aligns their testing with state standards. We would have to be in sync with other states' standards for a fair comparison. Can compare nationally, but cannot trend.

It was suggested the words “for local trending purposes” be added to the first bullet.

**Recommendation #64** – Ms. Ball stated the need for guidelines to be in place in order to work as an SAU.

**Recommendation #69** – When asked what was meant by “unique demographics”, Ms. Ball responded a lot of the research is conducted on inner-city schools whose community demographics are different from those of the Hollis School District.

Ms. Mace stated the need to find a process for curriculum review and material selection. She believes part of the process to be hiring an individual to work with (train) the committee the first time through evaluating the mathematics program. There are certifications to be program evaluators so there is a certain expertise/skill set there that we do not have. She also feels bringing in an outside consultant avoids an inherent conflict of interest.

**Next Steps** - Chairman Beauregard stated the need to prioritize the recommendations. He felt the recommendations of materials and curriculum were higher priority items than the program evaluation. Mr. McCann stated the need to have the proper evaluation tool in place so that they can go back to the original goal of evaluating the math program. He questioned the timeline.

Ms. Mace remarked the original timeline called for the formation of a new committee in the fall to begin to evaluate the math program. Based on the recommendation of the board (related to the purchase of a new textbook series taking place in the 2010/2011 budget cycle), the committee is recommending deferring that piece for the year. What needs to be looked at for the upcoming year is convening the SAU math test committee to look at the recommendations, prioritize them, and look at and discuss the curriculum. Ms. Ball suggested looking at more material that came out of the national math panel.

Ms. Mace stated the desire to spend the upcoming year keeping the existing everyday math program in place, implementing some of the recommendations that address the deficiencies, and looking at the GLEs and the curriculum and what changes are desired there. Need to have the curriculum in place before they can choose materials to match the curriculum.

She would like to identify the curriculum review and textbook evaluation process that will be used, find someone to provide training, and, by next summer or fall, form a committee that would work with the consultant to go through the process and evaluate everyday math along with other selected math programs/textbooks.

Mc. McCann asked for an executive summary to be placed at the front of the report identifying the timeline and recommendations being implemented.

Chairman Beauregard summarized by stating the board is in support of the process being taken, the priorities that have been established, and the inclusion of a cover page in the report.

### Public Comment

Chris Hyde – touched on the amount of non-supportive information on the Internet with regard to the everyday math program. Stated his disappointment in the timeline being moved out. Commented on the benefits of parental involvement.

Ms. Ball remarked the existing data from the Department of Education, after researching 5 major math programs, determined the only effective one to be everyday math.

Steve Burns – Stated he is encouraged by the report, but feels the process is painfully slow.

Janet Merithrew - stated her belief traditional algorithms were to be introduced in April and had yet to be done. Ms. Keagan explained some children are continuing to utilize non-traditional until they gain a stronger understanding of the traditional.

### School Reports – Attached

#### Consultant's Management Report, Parent Advisory Council Proposal

Mr. Kelley informed the board the Consultant's Management Report has been completed. It was shared with the SAU on September 15<sup>th</sup>. It was then disseminated to the Hollis School administration for review. The next step is a series of meetings to review evaluations and come to conclusions and recommendations.

Chairman Beauregard expressed his concern with the apparent direction, and whether adding another position would simply be a stopgap measure? In response, Superintendent Hodgdon shared her early thinking that there is a position needed SAU wide. She sees the position to need a strong curriculum perspective with a special education background.

She remarked part of what Mr. Kelley experiences every day are the legal and complaint aspects, which take away from time for the curriculum side of the program. She also mentioned a new requirement of response to intervention, a curriculum based requirement.

Another key component for the position would be the ability to work with and provide support for principals and coordinators. Out-of-district placement could also be addressed. She believes such a position could go a long way to addressing needs and deficits in the system. Part of the issue in special education is a regular education issue. Can be more strategic with this position and eliminate some of system bog down. Could provide early service to kids to avoid ending up in the system, and possibly help with out-of-district placement.

Chairman Beauregard asked how much of a position Hollis needs and whether the position could be a shared one.

Superintendent Hodgdon responded there are shortcomings to the position being district-based as opposed to SAU wide - in any given month/year the needs will change and you might have a time where you don't need a full-time position. In that instance, what tends to happen is additional work

is planned for the individual. Thinking about what would serve all districts well, her initial thoughts are there is more promise in having the position SAU wide rather than having a district base. Another consideration for a district base position is the level of expertise you will need to have and pay for. She believes it to be a good idea to have the position district based, but is not sure it would be sustainable. She reiterated her comments are her initial thoughts, as she has not had the opportunity to speak with the administrators around the system.

Chairman Beauregard stated concerns expressed by the Budget Committee over the accountability of the SAU budget, as it does not go through the same review process as the other budgets, and how to account for the amount of time the position is dedicated to Hollis. Superintendent Hodgdon suggested creating a schedule for the person filling the position to account for the amount of service you are receiving. She believes the accountability factor is looking at special education numbers.

Mr. McCann mentioned the apportionment that would occur if the position were SAU wide. Chairman Beauregard suggested the amount of time required of this individual could be ascertained by determining the amount of time assistant principals are spending addressing special education responsibilities rather than other duties. A job description inclusive of time requirements is needed prior to the SAU budget meeting. Superintendent Hodgdon informed the board the administrators read the report, endorsed the report, and endorsed the recommendations.

Mr. Kelley informed the board, the state, under the United States Department of Education, has 20 indicators on which they are evaluated. This data is based on evaluation of local districts in New Hampshire. Just received all three districts - very admirable ratings. State report cards will be published by the Department of Education on November 4<sup>th</sup>.

Mr. Kelley described for the board the amount of time spent on and types of calls he receives on a daily basis. He spoke of the volume of work, and explained the workload would continue to be great even with the addition of a full-time position. He cited the need for personal contact with the special education coordinator and staff.

Superintendent Hodgdon touched on the need for cross training in this area. She reiterated the need for an additional position with a job description geared towards getting Mr. Kelley to an acceptable workweek.

Chairman Beauregard questioned whether there was a driving force behind the number of urgent requests being received. Ms. Haytayan inquired whether there was anyone between Mr. Kelley and the Vice Principals at the district level. Mr. Kelley explained there is not. He went on to state the district has grown 70% in special education and 68.9% in regular education since 1995.

Chairman Beauregard questioned whether some of the workload could be outsourced? Mr. Kelley responded there are some early retirees who work in a consulting capacity. However, in '95 he witnessed a multitude of contractual hiring, and when the needs grew it became economically inefficient to do things contractually. Believes it more cost effective to have a position in-house, as the need is that great.

Mr. McCann suggested the issue is more than that of additional bodies, but rather ensuring the proper configuration of individuals. He feels this subject needs to be addressed at the SAU meeting.

Chairman Beauregard asked if a parent advisory counsel could provide insight into the issue, from their perspective. Superintendent Hodgdon responded she was considering that and has spoken briefly with Mr. Kelly and the administrators about the proposed idea. Principals Fowler and Allen have some immediate steps they are taking to answer some of the need that was expressed in the proposal.

Mr. Kelley summarized the two communications stating the first related to types of programs, training, procedures, and information to parents. The second concerned screenings and evaluations, backgrounds and utility of staff, what tests the school psychologists give and their certification to administer those tests. He stated those are all things that are very quickly answered in an information sharing system. He remarked on the number of parental discussions that took place during the course of last year. Similar meetings have been scheduled for this year on a monthly basis. Input is being sought from the public as to what format would be most helpful for the dissemination of information.

Janet Merithrew suggested the creation of a “Most Frequently Asked Questions” area on the web site.

Curriculum Management Report, Policies, Year Three Objectives for 3-Year District Goals

After a brief discussion, the determination was made to address the policies in blocks of 5 per meeting. Superintendent Hodgdon will set up a calendar for addressing these.

#### FY10 BUDGET CONCEPTUAL OVERVIEW

Superintendent Hodgdon informed the board the administration will be looking at a conceptual overview and preparing a raw budget for submittal to the SAU office by the end of the month. She requested the board’s conceptual overview to factor into the internal discussions.

Some of the items suggested were; addressing the issue of additional manpower in the area of special education, math curriculum coordinator, data analyst position, increase in the number of substitutes to free up teachers for additional development, development funds for teacher training, consideration of an administrative level position to assist with the teaming efforts of the schools, and adding to the early intervening services position.

Chairman Beauregard reminded the board of the recommendation of the Budget Committee to keep the budget flat.

#### BOARD DISCUSSION - Held

- A) Policy Issues
- B) Web Site

#### Superintendent’s Report

Superintendent Hodgdon brought to the board’s attention the need for a representative of the board to participate in the Superintendent Evaluation Committee.

**VICE CHAIRMAN MCCANN NOMINATED BOARD MEMBER HAYTAYAN  
BOARD MEMBER BENZ SECONDED THE NOMINATION  
MOTION CARRIED**

Superintendent Hodgdon nominated Traci Ekberg to the position of Reading Specialist (.3)

**MOTION BY BOARD MEMBER HAYTAYAN TO ACCEPT THE NOMINATION OF TRACI EKBERG TO THE POSITION OF READING SPECIALIST .3 AND RECOMMENDATION OF MASTERS, STEP 12 AT A SALARY OF \$16,946.40  
MOTION SECONDED BY BOARD MEMBER MCCANN  
MOTION CARRIED**

*Superintendent Hodgdon provided a brief overview of her report (copy attached).*

Superintendent Hodgdon informed the board of the successful resolution to the bus issue that was before them last month. There was determined to be fault on both sides of the situation. A reassignment was made.

COMMITTEE REPORTS – Held

NON-PUBLIC SESSION

**MOTION BY MEMBER BEAUREGARD THAT THE BOARD GO INTO NON-PUBLIC SESSION PURSUANT TO RSA 91-A:3 II(a) TO CONSIDER COMPENSATION OF A TOWN EMPLOYEE AND PURSUANT TO RSA 91-A:3 II (c) TO DISCUSS A MATTER, WHICH IF DISCUSSED IN PUBLIC, WOULD LIKELY AFFECT ADVERSELY THE REPUTATION OF A PERSON, OTHER THAN A MEMBER OF THE BODY OR AGENCY ITSELF**

**MOTION SECONDED BY MEMBER BEAUREGARD**

*A Viva Voce roll was conducted, which resulted as follows:*

Yea: Bill Beauregard, Jim McCann, Alison Haytayan, Susan Benz, Maura Loftus  
5  
Nay: 0

**MOTION CARRIED**

*The Board went into non-public session at 10:55 p.m.*

**MOTION BY MEMBER BENZ TO COME OUT OF NON-PUBLIC SESSION AND RETURN TO THE REGULAR MEETING OF THE HOLLIS SCHOOL BOARD  
MOTION SECONDED BY MEMBER MCCANN  
MOTION CARRIED**

*The Board came out of non-public session at 11:15 p.m.*

ADJOURNMENT

**MOTION BY MEMBER BENZ TO ADJOURN  
MOTION CARRIED**

The Hollis School Board meeting of October 8, 2008 was adjourned at \_\_\_\_\_ p.m.

**Date** \_\_\_\_\_ **Signed** \_\_\_\_\_

Report  
of  
Mathematics Summer  
Research Committee

October 8, 2008

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# Introduction

## Background

- January 2007 – In accordance with the Best Schools Leadership Institute process used at HES for program evaluation, a committee forms to evaluate the mathematics program. The committee, comprised of parents, administrators and teachers, meets monthly through May. Report to be issued in May 2007.
- May 2007 – Review committee decides to continue process in the fall in order to reach consensus among committee members.
- Fall 2007 – Review committee continues to meet monthly through December.
- Winter 2008 – Evaluation Committee Report and a Minority Report are presented to the School Board.
- March 2008 – National Mathematics Advisory Panel makes final report after 2-year study.
- April 2008 – Curriculum Director prepares plan to address differences between the Evaluation Committee Report and the Minority Report.
- May 2008 – School Board endorses the Curriculum Director’s plan which includes the formation of a Summer Research Committee comprised of teachers from SAU #41.

## Objectives of the Summer Research Committee

- Compare SAU#41 Math Curriculum to other math curriculums from around the country
- Review National Math Advisory Panel Final Report
- Identify instructional accommodations for teaching computational skills with traditional algorithms
- Research best practices and enrichment opportunities
- Study data from NECAP and NWEA assessments
- Identify professional development opportunities
- Identify a program evaluation model that can be used by the Hollis Elementary Schools to evaluate all instructional programs

## Time Line of Summer Research Committee

The committee met 12 times between June 23, 2008 and August 18, 2008. On August 19, 2008 committee members met with Carol Mace and the principals of HUES and HPS to review the first draft of the Summary Report. The report was revised and a second draft was presented to SAU Leadership on September 11, 2008. On September 17, 2008, the committee met with the Hollis Elementary Schools faculty to review the third draft. Follow-up focus meetings were held for grade levels 4, 5, and 6 at HUES on September 22, 2008. HPS and HUES faculty were invited to meet with committee members after school on September 22, 2008. The final report was presented to the Hollis School Board on October 8, 2008.

### **Using National Mathematics Advisory Panel Final Report**

At the start of the Hollis Summer Research Project, it was noted that there are dissenting opinions by leading experts with some findings contained in the National Mathematics Advisory Panel (NMAP) Final Report. The committee made the decision to accept all recommendations as best practices in mathematics education. This decision was based on the two facts: (1) members of the National Mathematics Advisory Panel represent the leading United States experts in mathematics education and (2) the Panel established rigorous criteria for “acceptable” research upon which to make their recommendations.

### **Distribution of Summer Research Report**

The committee strongly believes that this report should be shared with all stake-holders including administrators, faculty, parents and board members. It is hoped that this document will serve to create “conversation” about the current delivery of mathematics instruction and implications for the future of the math program at Hollis elementary schools and SAU #41. Open discussion and disagreement is encouraged so as to develop a math program that best fits the needs of Hollis elementary schools.

### **Note Regarding Report References to “Teachers”**

Throughout the report, the phrase “teachers report” is often used. Please note that this phrase refers only to the teachers on the Summer Research Committee.

# Curriculum

- The Advisory Panel identified “Critical Foundations of Algebra”. These benchmarks identify the skills learned in elementary school mathematics that lead to success in algebra. In order to achieve successful mastery of these skills, the Panel recommended the typical elementary school mathematics curriculum be streamlined as follows:

**Table 2: Benchmarks for the Critical Foundations**

**Fluency With Whole Numbers**

1) By the end of Grade 3, students should be proficient with the addition and subtraction of whole numbers.

2) By the end of Grade 5, students should be proficient with multiplication and division of whole numbers.

**Fluency With Fractions**

1) By the end of Grade 4, students should be able to identify and represent fractions and decimals, and compare them on a number line or with other common representations of fractions and decimals.

2) By the end of Grade 5, students should be proficient with comparing fractions and decimals and common percent, and with the addition and subtraction of fractions and decimals.

3) By the end of Grade 6, students should be proficient with multiplication and division of fractions and decimals.

4) By the end of Grade 6, students should be proficient with all operations involving positive and negative integers.

5) By the end of Grade 7, students should be proficient with all operations involving positive and negative fractions.

6) By the end of Grade 7, students should be able to solve problems involving percent, ratio, and rate and extend this work to proportionality.

**Geometry and Measurement**

1) By the end of Grade 5, students should be able to solve problems involving perimeter and area of triangles and all quadrilaterals having at least one pair of parallel sides (i.e., trapezoids).

2) By the end of Grade 6, students should be able to analyze the properties of two-dimensional shapes and solve problems involving perimeter and area, and analyze the properties of three-dimensional shapes and solve problems involving surface area and volume.

- The National Advisory Panel also recommended that “Critical Foundations of Algebra” should guide classroom curricula. The most important of these are:
  - Automaticity of math facts
  - Use of standard algorithms
  - Proficiency with positive and negative integers by the end of 6<sup>th</sup> grade
  - Proficiency with positive and negative fractions by the end of 7<sup>th</sup> grade

**Recommendation #1:** SAU #41 elementary schools should increase emphasis on the automaticity (as defined in the “Grade Level Benchmarks (for Automaticity )” document developed in May 2008).

**Recommendation #2:** Mastery and automaticity of basic facts should be assessed using more than one measure.

**Recommendation #3:** SAU #41 elementary schools should use traditional algorithms.

**Recommendation #4:** SAU #41 elementary schools should define “mastery” at each grade level and develop strategies to move from “mastery” to “skill maintenance” at each grade level.

**Recommendation #5:** SAU #41 elementary schools should develop goals requiring each student to meet grade-level benchmarks on a yearly basis leading to complete mastery of arithmetic by the end of 6<sup>th</sup> grade.

- National Math Advisory Panel Report indicates that many students do not understand the concept of equality, that is, they do not understand that equality means “the same as”. Teachers report this is also an issue for Hollis

students. Teachers also report that there should be more emphasis on the basic properties (Distributive, Commutative and Associative).

**Recommendation #6:** *Hollis educators should use data from the NWEA and NECAP tests to validate whether this is a concern for the Hollis school district.*

**Recommendation #7:** *If the data supports the concern, it is recommended that teachers research and develop strategies to help students better understand these concepts.*

- The committee acknowledged that the Hollis Elementary School faculty has completed the work to ensure that the SAU #41 math curriculum is aligned with New Hampshire Grade Level Expectations (GLEs). Therefore, the committee compared the New Hampshire Grade Level Expectations with those from: California, Connecticut, Massachusetts, and Missouri, standards from the National Council of Teachers of Mathematics (NCTM) as well as Achieve Inc.
- The findings of this comparison indicated that all students end sixth grade with the same level of competency in all strands of the math curriculum. However, significant differences begin to appear in 2<sup>nd</sup> grade and became more apparent in 3<sup>rd</sup> and 4<sup>th</sup> grade. In curriculums outside of New Hampshire, skills are presented in earlier grades and reinforced in 5<sup>th</sup> and 6<sup>th</sup> grade. New Hampshire GLEs present new skills 2<sup>nd</sup> through 6<sup>th</sup> grade with increasing levels of complexity. The NMAP recommended that skill maintenance be emphasized in any curriculum. The Panel further recommended that any approach that continually revisited the same topic year after year should be avoided.
- The NMAP found no research to support the use of “real world” problems. It has not been shown to help with the key elements of conceptual ability, problem solving or automaticity. Working with real world problems has been shown only to help students complete problems exactly like what they were given as “real world” problems. No transference to other settings has been shown.

**Recommendation #8:** *The SAU #41 mathematics curriculum should be completely re-written with more emphasis on ARITHMETIC skills. This is not to suggest that SAU #41 curriculum should abandon NCTM standards or New Hampshire GLEs, but rather, the SAU #41 curriculum should de-emphasize such topics as data analysis, real world problems and estimation to provide the focus on the mastery and automaticity of basic facts. (Warning: This is not to imply that these topics should not be thoroughly covered, but rather they should hold less importance in the overall math curriculum.)*

**Recommendation #9:** *If curriculum recommendations are implemented, there is a possibility that NECAP scores may decline for selected grade levels. Teachers and administrators must be supported by the School Board if this occurs. The focus of the SAU #41 math program must remain on the end result -- the math achievement at the end of 12<sup>th</sup> grade -- not test results.*

- Research cited in the NMAP Report shows that students who complete Algebra 2 (including topics of HBHS Precalculus or Algebra 3/Trigonometry courses) are more than twice as likely to graduate from college compared to students with less mathematical preparation.
- The committee recognizes that all career paths require at least an Associate’s Degree. Therefore, all students must be prepared to successfully complete college math courses.
- The National Math Advisory Panel reports that:  
*“Claims based on Piaget’s highly influential theory, and related theories of ‘developmental appropriateness’ that children of particular ages cannot learn certain content because they are ‘too young,’ ‘not in the appropriate stage,’ or ‘not ready’ have consistently been shown to be wrong.”*

Research indicates that students are ready to acquire new knowledge based on their prior knowledge. The Panel reported that research indicates that if a student possesses the prerequisite knowledge, s/he will be able to learn any mathematical idea. The notion of insufficient brain development is incorrect.

**Recommendation #10:** SAU #41 should develop a long-term goal that all students will complete Algebra 1 or Introduction to Algebra 1 in 8<sup>th</sup> grade.

**Recommendation #11:** SAU #41 should develop a long-term goal that all college-bound students will take Algebra 3/Trigonometry or Precalculus in High School.

**Recommendation #12:** SAU #41 should continue to coordinate elementary school mathematics so that both Brookline School District and Hollis School District require the same level of mastery at the end of 6<sup>th</sup> grade. This will allow all students entering HBMS to have exactly the same preparation for success.

- The National Advisory Math Panel cited research indicating that practice is vital to achieving automaticity of basic facts. Automaticity is vital to success in mathematics as it frees the working memory for more complex aspects of problem solving.

**Recommendation #13:** Hollis elementary schools develop multiple strategies for practice. This would include better use of technology including the use of PDAs, Smartboards, computer programs and web-based practice.

**Recommendation #14:** The Hollis School Board consider providing budget funds to provide appropriate technology (in addition to computers) to provide teachers and students with the most effective means for practicing memorization and automaticity of basic facts.

**Recommendation #15:** The ICT Coordinator(s) for the Hollis elementary schools should help teachers better identify appropriate technology tools to develop mastery and automaticity of basic facts.

## Administration

- The SERESC Report (July 2008) recommended that administrative roles be better defined in Hollis elementary schools. This committee not only concurs with this recommendation but also encourages the Superintendent to provide oversight to ensure that individuals do not step outside the scope of their responsibility. In response to poorly defined job descriptions, board members, administrators, and community members were forced to take on responsibilities that were clearly beyond the scope of their position. Teachers in both HUES and HPS interpreted this as disrespect for their roles as educators. This resulted in a certain level of discontent. While our committee recognizes there were clear flaws in the math program that were not being addressed, we believe the problem was only exacerbated because there did not exist clearly defined procedures for remediation on the part of each stakeholder.

**Recommendation #16:** *The Superintendent should move forward with the SERESC recommendation that job responsibilities be clearly defined.*

**Recommendation #17:** *The Superintendent provide oversight of these job responsibilities ensuring that no administrator, educator, community member or board member move beyond the scope of their position.*

**Recommendation #18:** *Data analysis in Hollis School District should always include teacher input. Release of data analysis to the public without consultation with teachers can lead to misinterpretation of the data on the part of community members.*

- Everyday Math (EDM) is comprised of several auxiliary components in addition to the core content. Some of these are Math Message, Exit Slips, and games. Each of these components has been designed by EDM to provide the students with an essential piece of their overall mathematics education. (For instance, the purpose of the games is to provide mastery of basic math facts.) Currently, teachers select the auxiliary components they wish to use in their classrooms.
- Teachers report a lack of communication not only between buildings, but also between grade levels in regards to the math program, i.e. grade 5 is not aware of the work of grade 4 and vice versa. Teachers also report that within a grade level there is inconsistency in the pacing of the course.
- Teachers report inconsistency in the amount of math homework. Concern has been expressed about the amount of extended homework given to students.

**Recommendation #19:** *Administration provide increased oversight of the math program to ensure that all components of EDM be used in the classroom in the manner prescribed by EDM.*

**Recommendation #20:** *A math coordinator position should exist on some level (District or Building) with the clear responsibility of providing support for the mathematics program. In addition, the coordinator should ensure that EDM is delivered in a consistent manner by all teachers. The responsibilities of this position should include collaboration with the Brookline School District to ensure that SAU #41 grade level expectations are being achieved by both school districts on the same timeline. This coordination would ensure that all students entering HBMS do so with the same focus of instruction. During meetings with the faculty of HUES and HPS, it was evident that teachers believe strongly that the position of “Math Coordinator” should be reinstated. They expressed that they felt the role of “Math Coordinator” was a vital element of the success of EDM.*

**Recommendation #21:** *Administrators provide opportunities for faculty of different grade levels and different buildings to discuss the math program from their particular vantage point.*

**Recommendation #22:** *As soon as possible, pacing guides should be developed for each grade level. This will ensure that students will enter each grade level with the same amount of content instruction from the previous year.*

*The administration (either a math coordinator or building administrator) should ensure that all teachers within a grade level are following these pacing guides. Scheduled Pacing Audits are recommended. This is*

not to imply that every teacher should be doing the same thing each day. However, processes should be developed which would ensure that all teachers are within a week of each other's lessons.

**Recommendation #23:** Educators within the Hollis School District should develop guidelines pertaining to the use of a 4-function calculator. Because there are no clearly defined guidelines, each teacher determines an individual rule for their class. This provides mixed messages for both students and parents in regards to the appropriate use of the calculator. Although the committee advocates a 4-function calculator be available to all students within all contexts of learning, this must be a decision made by the Hollis elementary school community.

**Recommendation #24:** Educators in the Hollis School District should review the guidelines regarding the amount of math homework that is appropriate for each grade level. Once these guidelines are established, administrators should ensure that all teachers are abiding by these guidelines and should respond to parental concerns by referring to the Homework Guidelines.

**Recommendation #25:** Hollis School District provide more resources to further develop early intervening services under the RTI program in mathematics. Response to Intervention refers to a provision in IDEIA 2004 requiring that early intervening services be provided to students not identified as needing special education but who need additional academic support to be successful in mathematics.

- Teachers report that the 6<sup>th</sup> grade math curriculum is adjusted on a yearly basis to meet the demands of HBMS placement assessment given in March.

**Recommendation #26:** Administrators need to ensure that the 6<sup>th</sup> grade curriculum is followed by all teachers in the same manner. If the educators decide that classroom instruction should be adjusted to meet the needs of the test given by HBMS, the curriculum should be changed to reflect this need.

- Teachers report that there is insufficient communication between the buildings within the SAU. Communication usually occurs when there is an "issue" that needs to be addressed between educators from different buildings with differing viewpoints; there are distinct attitudes about EDM from all buildings in the SAU.

**Recommendation #27:** When a decision is made as to the "best math program for the Hollis School District," it is imperative that it be supported by all math teachers in the district and the SAU. Certainly, teachers may express their professional opinion of the program but it should never be carried to an extent that a teacher would refuse to support students in a style learned in elementary school. When teachers from any building in the SAU express their lack of support for math programs in another building, parents and students are given the subtle message that there is a "right" way and a "wrong" way to teach/learn math. This message does not work in the best interest of maximum student achievement in mathematics.

**Recommendation #28:** Any curriculum changes should be determined by a committee with at least one representative from each of the six buildings as well as district-level and central office administrators.

- The SAU Math Task Force provides each teacher with a "Checklist of Skills". There is no uniform use of this checklist throughout the SAU. The committee strongly believes this is an important resource that all teachers should use to focus their instruction.

**Recommendation #29:** Administrators ensure that all teachers are using the checklist effectively.

**Recommendation #30:** SAU #41 Math Task Force should consider rewriting the "Checklist of Skills" in terms of a "Sequence of Skills."

- The Math Advisory Panel stressed the need for additional high quality research in math education.

**Recommendation #31:** Administrators create structures by which educators in their buildings keep abreast of developments in math curriculum and make changes to the curriculum as well as the delivery of the curriculum accordingly.

## Student Attitudes about Mathematics

- NMAP research indicates that a student's belief about learning influences their goals. Achievement can be directly tied to effort.

**Recommendation #32:** *Educators need to determine what strategies can be used to encourage children to put forth more effort. Answers to the following questions might aid in this goal: How do we change the perception that ability to do mathematics is tied to innate ability? How do we change the perception that "being smart" is related to mathematics ability? How do we change the perception that achieving without effort is an indication of a "smarter" student?*

- 6th grade teachers have observed increased math phobia in 6<sup>th</sup> grade students.

**Recommendation #33:** *Data should be gathered for further investigation of this observation.*

**Recommendation #34:** *If the data supports the observation, there should be further investigation to determine the cause of the phenomenon. Caution should be used at jumping to conclusions. For instance, research indicates that it is not unusual for girls in this age group to begin to lose interest in mathematics. We need to consider this and similar attitudes of middle school students when analyzing the collected data.*

## Students with Learning Disabilities

- Teachers and administrators in Hollis elementary schools should be commended on their focus of differentiation for all learners. The district recognizes the needs of special learners at both ends of the spectrum and tries to address the needs of these students.
- Student IEP goals do not necessarily align with classroom goals. Although they must be aligned with the GLE's, IEP goals may be one or two grade levels below classroom instruction. When students are assisted by a special educator in a setting outside of the classroom, the focus is on the goals of the IEP. This can sometimes cause the student to miss important activities occurring in the classroom that support the classroom math objectives.
- Research indicates that Special Education students learn best when explicit instruction is provided.

***Recommendation #35:** Special educators work more closely with the classroom schedules to ensure that learning is not compromised.*

***Recommendation #36:** When possible, special educators support the classroom math objectives by providing services in the classroom as opposed to a resource room.*

***Recommendation #37:** Special Education teachers and paraprofessionals receive the same professional development for EDM that is provided to classroom teachers.*

## “Mathematically Promising” Students

- Teachers report that the needs of the “mathematically promising” students are not being addressed in an adequate or consistent matter.
- Research indicates that “above average” students gain from both vertical acceleration and enrichment.
- Teachers report that parental pressure often forces teachers and administrators into an “all or nothing” policy that does not work in the best interest of individual learning styles and needs.

**Recommendation #38:** Any plan that is developed to identify “mathematically promising” students should use multiple measures and should be research-based.

**Recommendation #39:** Hollis school district should develop a more meaningful program for math enrichment. Once this program is developed, it should be followed by all teachers in a consistent manner.

**Recommendation #40:** If a decision is made to allow students to vertically accelerate, consideration must be made as to the impact on curriculums in HBMS and HBHS. The impact of providing Algebra to qualifying 6<sup>th</sup> graders must also be considered.

**Recommendation #41:** Each building should create a true math lab with resources, computers, robotics, etc. allowing students to creatively explore mathematics while becoming self-directed learners.

**Recommendation #42:** When enrichment is chosen for a student, the enrichment activity should be meaningful. It should be obvious how a student will increase their mathematical thinking processes and/or knowledge by completing the enrichment activity.

## Parents

- The committee recognizes that the parents of Hollis elementary school students consist of individuals who want to help their children be successful in school, and more specifically, in mathematics. The committee believes that some parents have difficulty with EDM because they are not familiar with the EDM processes for learning mathematics.

**Recommendation #43:** *Provide parent education to support the need for more information about the EDM program. Parents should be made aware of the NSF research that supports the effectiveness of the EDM programs.*

**Recommendation #44:** *Workshops should be held for parents emphasizing that all students need to be proficient in mathematics. Workshops will dispel the myth of the “math gene” and focus on the idea that all children can do math.*

- The committee acknowledges the strong parental help available to students when completing homework assignments. However, parents report a level of frustration in the use of multiple algorithms which often prevents them from supporting their child in homework completion.

**Recommendation #45:** *Develop ways that parents can support their child’s math education without learning non-traditional algorithms. The problem will be resolved for the current year (2008-2009) with the suspension of the teaching of non-traditional algorithms. However, if a decision is made in 2009-2010 to return to the use of non-traditional algorithms, this problem should be addressed.*

- Teachers report parents have expressed concern about assignments from the “Groundworks” and “Sunshine Math” supplements. Teachers believe this may be due to the fact that parents do not completely understand the nature of these assignments.

**Recommendations #46:** *Increased communication with parents in the pedagogy supporting the use of these supplements. Teachers and administrators should provide parents with clear expectations for the completion of assignments using “Groundworks” and/or “Sunshine Math.”*

## Teachers

- There is no research that clearly indicates the definition of a good math teacher. No correlation has been established between pre-requisites such as the Praxis, Certification, HQT and prior course work and the effectiveness of a mathematics teacher. However, research does indicate that there is a strong relationship between the effectiveness of the math teacher and student achievement. Additional research indicates that the effect on student achievement is compounded dramatically when a student has an ineffective teacher two years in a row. Some research indicates that the resulting losses are never made up.

**Recommendation #47:** *Teachers should be provided with ample opportunities to learn. This can be accomplished in a number of ways: (1) professional development should be brought to the building; (2) teachers attend out-of-district training; (3) teachers are provided stipends for attending mandatory summer workshops; (4) better use of professional learning communities to share knowledge.*

- Teachers report that there has been no focused professional development for EDM during the past seven years. It should be noted, however, that in-house programs have been provided by the Math Coordinator.

**Recommendation #48:** *Funding should be provided in each year's budget that addresses on-going professional development in the effective implementation of EDM.*

**Recommendation #49:** *Mentoring programs for new teachers should include ways to support teachers who have never used EDM.*

**Recommendation #50:** *As SAU #41 becomes more fully engaged in the use of the new Professional Growth Model, teachers should be encouraged to set their goals around increased proficiency in mathematics.*

**Recommendation #51:** *Professional development funds should be made available to newly hired teachers prior to the start of the school to attend EDM training workshops.*

- Teachers have received professional development in analyzing NWEA scores but have not received the same training for Performance Pathways.

**Recommendation #52:** *Professional Development should continue in analyzing NWEA scores and using results to create data-driven instruction.*

**Recommendation #53:** *Teacher accounts and passwords for Performance Pathways should be updated. Teachers should be given access to these accounts ASAP allowing them to use Performance Pathways to review data from NWEAs and NECAPs for their current students. Professional Development needs to be provided to help teachers use this data effectively to improve student achievement.*

The committee acknowledges that elementary school teachers have varying comfort levels with mathematics and that this level of comfort does impact student learning.

**Recommendation #54:** *Explore the implications of creating teams with similar proficiency levels in mathematics. This will allow teachers to focus more on math instruction and less on differentiation. This does NOT imply that students will be grouped by ability.*

## Effective Use of Data

- Teachers report inconsistency in the use of tools that adequately assess prior knowledge.  
*Recommendation #55: All teachers should be assessing prior knowledge before beginning a new topic.*  
*Recommendation #56: Teachers should implement strategies to adequately address the needs of students with (1) less than adequate prior knowledge and (2) complete mastery of the new topic.*
- Teachers report inconsistent use of formative assessments.  
*Recommendation #57: Administrators should review guidelines for the use of formative assessments and ensure that all teachers are effectively using them.*
- Teachers at HBHS report that students have little experience with open-ended response type questions. Analysis of the 2007 NECAP results for 11<sup>th</sup> graders supports this observation.  
*Recommendation #58: The SAU Math Task Force should complete an evaluation of the current materials used for problem solving at all levels. Questions to be investigated include: Do these materials adequately address open-ended response questions? What should be adjusted in the math program to increase student achievement in this area?*
- Teachers report little experience using Performance Pathways  
*Recommendation #59: All educators should learn to use Performance Pathways. Education is moving towards greater data-driven instruction. Performance Pathways provides the means by which teachers can accomplish this goal.*
- Teachers report that they need more information about professional development opportunities.  
*Recommendation #60: The Committee has developed a list of Professional Development Opportunities (see attached). This should serve as the beginning of a regularly updated list that is easily accessible to all teachers.*

## The Data\*

### NECAP

Currently, there are three data resources for the Hollis School District to use as tools for determining performance information. The first, the NECAP is a regional assessment administered in the fall of each year to measure the previous year's performance against the state's curriculum standards. (i.e. 5th graders this fall, 2008 will take the NECAP to assess their 4th grade performance). Those results will not be available until the first quarter of 2009.

#### Please note:

- There are only three years of data based upon this assessment.
- The assessments for the elementary and middle schools were changed from NHEIAP to NECAP in 2006. At the high school level, the change occurred in 2007.
- Yearly data does not exist after middle school; after 8<sup>th</sup> grade the NECAP is only administered in 11th Grade.
- This is a pencil/paper, bubble style assessment with some open -response questions.
- When comparing yearly performance, the number of questions given in each of the four strands (Numbers and Operations; Geometry and Measurement; Functions and Algebra; Data, Statistics and Probability) changes to mirror the Grade Level Expectations.
- The results of this fall assessment are not typically available until February of the following year.

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\*See Appendix A for Data Analysis

#### **NWEA**

NWEA is a computer-based assessment for math and reading. It is administered in the fall and spring.

Please note:

- There is only one full year of data to be considered at this time.
- District norms will be developed after three years of testing.
- The strength of this assessment is that results are timely and highly individualized.

#### **Local Assessment**

Each student is given a local assessment at the beginning, middle and end of the year to assess:

(1) prior knowledge and (2) measure the acquired knowledge over the course of the year. The assessment is a pencil/paper test, administered and graded by the classroom teacher.

- ***Recommendation #61:*** *Test results should be compiled and reported by individual strands to maximize its benefit to the teacher and the students.*
- ***Recommendation #62:*** *The administration of local assessments should be re-evaluated in light of the data provided by NWEAs.*

#### **Analysis of Data and Recommendations**

The committee carefully reviewed the available data. Some trends were noted. However, without representation from all buildings in the SAU, no meaningful conclusions can be made. The math curriculum should be dynamic, addressing the unique needs of the students of the Hollis and Brookline communities. Regular analysis of the data on the SAU level will ensure that changes to the curriculum are data-driven.

- ***Recommendation #63:*** *Only the SAU Math Task Force (comprised of representatives from each SAU building) should make recommendations based on the data.*
- ***Recommendation #64:*** *All three districts should work collaboratively. The committee recognizes that data should be the foundation for collaborative discussions between the three school districts. Data analysis should include the consideration of the many variables influencing student achievement. Guidelines should be developed on the SAU level addressing the appropriate access each district should have to the data of another district. Guidelines should also be developed indicating the appropriate use, reporting and storage of any data analysis showing comparison between the three school districts.*

## Program Evaluation Model Selection

- After several weeks of working on this project, the committee members concluded that selecting a program evaluation model would not be an appropriate charge for this committee.
- The National Mathematics Advisory Panel criticized most American mathematics textbooks because (for economic reasons) they attempt to meet the needs established by *all* state standards, resulting in large textbooks overloaded with more material than can be covered effectively in one school year. They also criticized texts for being overloaded with pictures. The Panel supported the concept of “Depth” over “Breadth” commonly used in other countries such as India and China.

**Recommendation #66:** *The committee charged with this task should have members representing all grade levels in all schools of SAU #41.*

**Recommendation #67:** *The program evaluation model should be selected independently from any work which focuses on a particular content area. It is believed this will prevent any bias (or perception of bias) in the selection of the most appropriate program evaluation model.*

**Recommendation #68:** *Provide professional development in the area of program evaluation.*

## Considerations When Selecting a Textbook Series

- Research indicates that the textbook series used has less impact on student learning than does the choice of instructional strategies.
- Of the five major elementary school mathematics series surveyed by the United States Department of Education, only EDM was shown to be “effective.”
- The committee believes that considering the purchase of a new math textbook series for the 2009-2010 is premature. The recommendations in this report should be considered and/or implemented first.

**Recommendation #69:** *It is important to acknowledge that Hollis, like all school districts, has unique demographics. Any process for textbook selection must include consideration of these demographics.*

**Recommendation #70:** *Purchasing a new textbook series is an expensive budget item and should not be considered prior to the 2010-2011 budget cycle.*

## Next Steps for the Math Task Force

<b>October 2008</b>	Convene SAU Math Task Force. Task Force will consist of one teacher representative from each SAU building as well as the Brookline math coordinator and building-level and SAU administrators.
<b>October 2008 – March 2008</b>	Determination of process by which results of Math Task Force might be initiated SAU-wide.  Determination of deliverables.  Determination of timeline for deliverables.  Determination of which report recommendations should be implemented immediately.  Determination of which report recommendations need more supporting evidence and/or research.  Evaluation of potential impact of curriculum revisions on NECAP scores.  Survey of teacher opinions including, but not limited to, Summer Math Research Committee Report recommendations, current math practices (especially those revised in 2008-09), effectiveness of current textbooks, effectiveness of professional development, effectiveness of new position of “math coach” in meeting curricular needs.
<b>December 2008</b>	Progress Report to school board
<b>April 2009</b>	Preparation of report to school board (including review by building administrators, SAU leadership, teachers).
<b>May 2009</b>	Report to school board.

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\*Resources to be used when reviewing Report Recommendations should include, but not be limited to, the National Math Advisory Panel Subreports, further analysis of district NWEA and NECAP data, dissenting opinions of National Math Advisory Panel Report

## Appendix A

### NECAP/NWEA Analysis and Observations

Observations were made by compiling reports that followed the cohorts by the year of anticipated graduation.

Please note the following designations used for both NECAP and NWEA, **based on a four point scale.**

L1 = substantially below proficient  
L2 = partially proficient  
L3 = proficient  
L4 = proficient with distinction

- When cohort size is included, it is to show that each year has changes in the makeup of the group, and with the size of the overall class, seemingly small changes could have the potential to impact percentage statements and skew analysis, therefore actual numbers and percentages are included to assist in validating any statements.
- All students are included in these numbers, including those that may have an Individualized Education Plan (IEP).
- Even with the IEP students included, there is not one cohort in any area for any year that is not on average in the proficient range (L3) for the Hollis School District in Math.

#### Class of 2009 (Seniors fall of 2008)

There is insufficient data available to make any significant observation or analysis. There is only one year of data (fall 2007 NECAP). Future consideration of this information would compare different cohorts of students versus the same group of students year over year. Although a cohort will eventually be available to review, Co-op performance may be best assessed by reviewing PSAT results which are now taken by all 11th graders. For Hollis to use this data, it would have to be separated out by elementary school district.

#### Class of 2010 (Juniors fall of 2008)

There is insufficient data available to make any significant observation or analysis. Co-op district performance may be best assessed by reviewing PSAT results which are now taken by all 11th graders. For Hollis district to use this data, it would have to be separated out by elementary school district. This cohort has NECAP results for their grade 7 performance available.

#### Class of 2011 (Sophomores fall of 2008)

This cohort has NECAP results for Grade 6 and Grade 7. Their performance at the end of Grade 8 is not tested as NECAP is not given in the fall to 9th Graders. Two years of data is not sufficient to establish a trend and this report is limited to performance in the Hollis District only, at this time.

#### Class of 2012 (Freshmen fall of 2008)

Cohort size: **Grade 6**– 126 students, **Grade 7** – 123 students, **Grade 8** – 118 students  
(Assessment results reflect grades 5, 6 and 7)

#### Math overall NECAP results for Grade 5:

- 12 Students or 9.52% were in the L1 (2) and L2 (10) range.
- 114 or 90.47% were in the L3 (63) and L4 (51) range.

#### Math overall NECAP results for Grade 6

- 11 students or 8.94 % were in the L1 (3) and L2 (8) range.
- 112 students or 91.05% were into the L3 (58) and L4 (54) range.

**Numbers and Operations:**

- Grade 5 average performance was 2.984 and grade 6 was 3.122. This indicates positive movement during the 6<sup>th</sup> grade year.
- Numbers and operations grade 5 results compared to grade 6, there is little change overall from L1 to L2 or L2 to L3.
- There is a positive shift between L3 moving into L4.

**Geometry and Measurement:**

- Grade 5 average proficiency is 3.103 and grade 6 is 2.878; both results are in the L3 range; however there is a slight drop. Contrary to the results in Numbers and Operations this was a shift down from each level into the next lower level.

**Functions and Algebra:**

The grade 5 average proficiency is 3.135 and grade 6 is 3.138

- 26.98% (34) were in the L1 and L2 in grade 5 compared to 21.96% (27) in grade 6, a positive move. 73.02% (92) fell into the L3 and L4 range for grade 5 compared to 78.05% (96) in grade 6. Again, a positive move in this area, moving students up between levels and higher within levels.

**Data, Statistics and Probability:**

The grade 5 average proficiency is 3.206 compared to grade 6 proficiency average of 3.114.

- This is a very slight drop year over year. The shift was mostly from L3 to L2, both L1 and L4 were relatively stable.

**Class of 2013 - 8<sup>th</sup> graders in fall 2008**

Cohort size: **Grade 5** -127 students, **Grade 6**-128 students and **Grade 7**-125 students

(Assessment reflects grades 4, 5 and 6)

**Numbers and Operations:**

- The average proficiency improves year over year from 2.874 (gr. 4) to 3.102 (gr. 5) to 3.2 (gr. 6).
- There is an observable movement of the students shifting up in levels. Grade 4 L3 and L4's is approximately 70%, grade 5 about 79% and grade 6 about 81% with a continued shift between levels and upward within levels. This positive indicator needs to be closely observed as more data comes available.

**Geometry and Measurement**

- The average proficiency continues to improve year over year from 3.078 (gr. 4) to 3.164 (gr. 5) to 3.184 (gr. 6). Grade 5 to Grade 6 there was a notable positive shift from L3 into L4. The L1 and L2 remained about the same.

**Functions and Algebra:**

- The average proficiency continues to improve year over year from 2.929 (gr. 4) to 3.125 (gr. 5) to 3.168 (gr. 6).
- There is again a positive shift between L1 and L2 moving from 4<sup>th</sup> grade to 5<sup>th</sup> grade, with 5<sup>th</sup> grade showing strong movement to L4. Grade 6 continues the positive move, with small improvements for each level (meaning the percentage of students in L1 and L2 decrease, while L3 and L4 increase).

**Data, Statistics and Probability:**

- The average proficiency continues to improve year over year from 3.079 (gr. 4) to 3.438 (gr. 5) with a decrease to 3.112 (gr. 6).

- Again, grade 5 performance shows a noteworthy movement up each level to the next. The decrease in grade 6 is a drop of about 20 students from L4 to L3 and L3 to L2.

**Class of 2014 - 7<sup>th</sup> graders in fall 2008**

Cohort size: **Grade 4** -147 students, **Grade 5**-145 students and **Grade 6**-146 students  
(assessment results reflect grade 3, 4 and 5)

**Numbers and Operations:**

- The average proficiency improves year over year from 2.694 (gr. 3) to 2.897 (gr. 4) to 3.02 (gr. 5).
- Numbers and operations end of grade 3 results compared to end of grade 5, there is a great positive shift in students from L1 to L2, even more so from L2 to L3. Grade 3 ended with about 38% (56 students) in L1 and L2, while grade 4 ended with about 35% (51 students) in L1 and L2. By the end of grade 5 L1 and L2's were only about 21% (33 students) with students floating between L1 and L2.
- There is an observable movement of the students shifting up in levels. Grade 3 L3 and L4's is approximately 62% (91), grade 4 about 65% (94) and grade 5 about 77% (114) with a continued shift between levels and upward within levels. This movement needs to be closely observed as more data becomes available to ensure continued positive growth.

**Geometry and Measurement**

- The average proficiency continues to improve year over year from 2.959 (gr. 3) to 2.986 (gr. 4) to 3.163 (gr. 5). Grade 4 to Grade 5 there was a notable positive shift from L3 into L4. The L1 and L2 remained about the same.

**Functions and Algebra:**

- The average proficiency remains in the L3 range, improving year over year from 2.912 (gr. 3) to 3.11 (gr. 4) with a small drop to 3.048 (gr. 6).
- There is again a positive shift between L1 and L2 moving from 3rd grade to 4<sup>th</sup> grade, with 4<sup>th</sup> grade showing strong movement to L4. Grade 5 maintains the positive move, with small improvements for each level (meaning the percentage of students in L1 and L2 decrease, while L3 and L4 increase).

**Data, Statistics and Probability:**

- The average proficiency continues to remain stable year over year from 3.184 (gr. 3) to 3.11 (gr. 4) to 3.136 (gr. 5).
- Each grade level performance shows a noteworthy movement up each level to the next. .

**Class of 2015 – 6<sup>th</sup> graders in fall 2008**

Cohort size: **Grade 3** -143 students, **Grade 4**-147 students and **Grade 5**-151 students  
(Assessment results reflect Grade 2, 3, and 4)

- There was a significant shift backwards or down in levels, comparing grade 2 to grade 3. This cohort went from only 15% in L1 and L2, to 23% at the end of grade 3.
- The same is true for L3 and L4, heading down from 85% in grade 2, to 77 % in grade 3.
- The cohort recovers some in grade 4, with 20% L1 and L2, and 80% L3 and L4.

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### **Numbers and Operations:**

- The average proficiency in each strand reflects the overall results stated above. Year over year from 2.986 (gr. 2) to 2.707 (gr. 3) to 2.762 (gr. 4).

### **Geometry and Measurement**

- The average proficiency in each strand reflects the overall results stated above. Year over year from 3.189 (gr. 2) to 2.912 (gr. 3) to 2.762 (grade 4).

### **Functions and Algebra:**

- The average proficiency in each strand reflects the overall results stated above. Year over year from 3.231 (gr. 2) to 3.088 (gr. 3) to 3.093 (grade 4).
- There is a shift down from L4 to L3 that was not demonstrated as noticeably in the previous cohorts.

### **Data, Statistics and Probability:**

- The average proficiency remains relatively stable year over year from 3.357 (gr.2) to 2.905 (gr. 3) and 3.093 (gr. 4).

### **Class of 2016 – 5<sup>th</sup> graders in fall 2008**

Cohort size: Grade 3 -110 students, Grade 4-115 students

(Assessment reflects grade 2 and 3)

There is currently only 2 years of NECAP data available for this cohort.

### **Numbers and Operations:**

- From grade 2 to grade 3 a negative move appears with 5 to 10 students dropping into each successive lower level. Overall the cohort goes from 30% L1 and L2 to 37% L1 and L2. For L3 and L4, it moves from 70% to approximately 63.5% with about 15 students dropping from L4 to L3.

### **Geometry and Measurement**

- In this strand the percentages for L1 & L2 from grade 2 to grade 3 and L3 & L4 over the same grades remain the same. The greatest movement here is again between the levels in the levels. There is a consistent movement downward for this cohort in this strand.

### **Functions and Algebra**

- In this strand the opposite appears to be the result for grade 2 and grade 3 for this cohort. There is a decrease from 33% L1 & L2 to 28%. There is the corresponding increase in from 67% to 72% with a general upward movement between L2 and L3 and L3 and L4.

### **Data, Statistics and Probability:**

- In this strand the percentages for L1 & L2 from grade 2, 23%, to grade 3 at 40% is again a negative movement. L3 and L4 go from 77% down to 60%. Again the overall move is downward between levels.

## Appendix B

### Identification of Professional Development Opportunities

Throughout the school year teachers are given opportunities to take math workshops which will benefit the students in the classroom. In the Hollis Upper Elementary building there is a communication bulletin board (centrally located by our mailboxes in the front office) which allows teachers and staff to give feedback on courses, or workshops that they have taken. Here are some examples of the many opportunities that teachers have to enhance their math instruction.

The position of our Math/Science Curriculum Administrator made staff aware of workshops that were coming to the area, and would make suggestions for us to attend. During choice meetings we were given the opportunity to look at data found and analyzed by this administrator to see the areas that we need to focus on. This gives us the time to target the areas that need to be strengthened, which allows us to choose and prioritize the workshops or courses that need to be taken.

1. **Teaching Math: A Video Library K-4, 5-8** - [www.learner.org](http://www.learner.org)
  - The package consists of 52 video programs (from 15-30 minutes in length) and guide.
  - Developed by the National Council of Teachers of Mathematics with use of the math standards
  - This could be used during choice meetings, team meetings, professional days, teacher workshop days
2. **Staff Development for Educators** – [www.ed2go.com](http://www.ed2go.com)  
**Everyday Math Course, Teaching Math: Grades 4-6**
  - These courses take 24 hours which are taken in a 6 weeks time span twice a week.
  - It is an online course which provides flexibility for teachers.
  - This accredited website also offers continuing education credits.
3. **Plymouth State University**
  - This university has a masters program with a concentration in mathematics.
  - Teachers would have the opportunity to strengthen their own math knowledge and discover new teaching strategies and techniques.
  - Since the travel is less convenient than other opportunities, there could be a possibility that the school would work with the staff to teach a cohort or teachers to earn a degree.
4. **Math Solutions** – [courseinfo@mathsolutions.com](mailto:courseinfo@mathsolutions.com)  
**Building a Foundation for Algebra (Grades 3-8)**
  - This course, along with others isn't offered in the New England area, but it would be a great opportunity to invite and host this company to work with our staff and staff with neighboring districts.
5. **University of New England – Math: Teaching for Understanding**
  - Offers graduate courses in the area of math.
  - These are video courses that can be taken individually, before or after school, and during team meetings.
6. **Greater Manchester Professional Development Center – Contact : Lori Collins**
  - There is a math coach available through this company that can come a couple times a year or each month depending on the need and the areas that need to be focused on.
  - There are follow up sessions that are offered after workshops to see what is working or not.
  - This would be a great opportunity to have someone in the math field be a consultant like we have for language arts.

## APPENDIX C

### GRADE LEVEL BENCHMARKS

The following were reviewed to identify appropriate benchmarks for Math Fact Fluency. A variety of sources were purposely selected. Benchmarks for Math Fact Fluency remained fairly consistent across these different curriculums and were comparable to the curriculum currently used in Hollis Elementary Schools.

*Connecticut PreK-8 Mathematics Curriculum Standards. October 2007.*

*Elementary Mathematics Benchmarks Grades K-6, Achieve, Inc., December 2007.*

*Mathematics Grade-Level Expectations, Missouri Department of Elementary and Secondary Education, March 2004.*

*Mathematics Content Domains – Fourth Grade, Trends in International Mathematics and Science Study (TIMSS), 2007 Assessment.*

*The California Mathematics Content Standards*

*Vermont Mathematics Grade Expectations*

**Automaticity** will be defined as the direct retrieval of a math fact without following a procedure. Students may be able to find the answer to a math fact by counting on their fingers, but this would be considered procedural and not considered mastery.

#### **Importance of Math Facts**

“Cognitive psychologists have discovered that humans have fixed limits on the attention and memory that can be used to solve problems. One way around these limits is to have certain components of a task become so routine and over-learned that they become automatic.” (Whitehurst 2003).

Without fluent retrieval of math facts, the development of higher order math skills – multi-digit addition, fractions and problem solving – is severely impacted. If a child does not have automatic recall, s/he must shift cognitive attention from the arithmetic task to using strategies to determine the correct answer to a math fact.

It is important to remember that young children have limited short term memory abilities.

We should not return to old instructional strategies where mastering the basic facts was the first thing students were asked to do. To develop *long-term memory* of math facts, students must (1) understand the meaning of the particular arithmetic operation (e.g., multiplication is repeated addition), and (2) Do simple problems involving that operation using alternate methods (such as counting) to get the answer. This provides the student with the framework for memorization.

#### **Four criteria should be used in any method used for mastering basic facts:**

- (1) Response time should be under 3 seconds for any fact.
- (2) Questions should be presented randomly because this is how they must be recalled when applying to more complex arithmetic problems
- (3) Immediate feedback should be provided so that incorrect answers can be identified and attention can be paid to learning the correct answer.
- (4) When learning the fact, the question and answer must appear together in some way for optimum learning.

Another note: Students with many different types of learning disabilities have considerable difficulty in developing automaticity with number facts. These students can achieve automaticity through increased practice; however, this may take up to an additional year over the non-LD student.

**Some Instructional Strategies**

Educational Memory Aides: Flashcards, posters and worksheets.

Use of rhymes and associations

Math facts are introduced one family at a time – just like word families.

Timed tests will be administered at least three times per week.

After the timed tests are graded, they will be returned to the student who will study missed problems for homework.

A letter will be sent to parents outlining the initiative.

Maintenance of math facts is necessary after mastery has been demonstrated.

**An Important Consideration**

Some students will find the timed tests stressful. Appropriate strategies need to be addressed to reduce the level of anxiety for these students.

**Curricular Implications**

As we further define mastery in the Number and Operations strand of the mathematics curriculum, it is important to remember that this is one performance indicator of one strand of the mathematics curriculum. We must not reduce the amount of time committed to the other strands: Algebra and Functions, Measurement and Geometry, Data Analysis, Statistics and Probability and Mathematical Reasoning. As indicated by the NECAP scores, Hollis Elementary Schools have shown the efficacy of the current curriculum in helping students to achieve a full spectrum of mathematical knowledge.

**BENCHMARKS:**

All students should be able to demonstrate proficiency in all number facts by the end of fourth grade. Benchmarks should be as follows:

Grade 1: Develop Addition and Subtraction Facts. (Students will not be tested at this level because mastery is not yet required.)

Grade 2: Students will demonstrate mastery of addition and subtraction facts through 20 by the end of grade 2.

Grade 3: Students will maintain mastery of addition and subtraction facts through 20. Students will begin to develop mastery of multiplication and division facts. Students will demonstrate mastery of multiplication and division facts with 2, 5, and 10 by the end of grade 3.

Grade 4: Students will maintain mastery of addition and subtraction facts through 20. Students will demonstrate mastery of all multiplication and division facts through 12 x 12 by the end of grade 4.

Grade 5: Students will maintain mastery of all math facts.

Grade 6: Students will maintain mastery of all math facts.

**Some Resources that will be used:**

Greenwal, Susan R. *How to Teach Math Facts.*

Crawford, Donald B. *Mastering Math Facts: Blackline Masters.*

Stuart, Marion W. *10 Days to Multiplication Mastery.*

Christensen, Evelyn B. *Multiplication Mosaics.*

Hein, Marilyn B. *Math Phonics: Multiplication and Division: Quick Tips and Alternative Techniques for Math Mastery.*

Liautaud, Judy and Rodriguez, Dave. *Times Tables the Fun Way.*

## Appendix D

### Committee Members

Dot Ball  
Math Department Chair  
Hollis Brookline High School

Patti Flynn  
6<sup>th</sup> grade teacher  
Hollis Upper Elementary School

Betsy Keegan  
6<sup>th</sup> grade teacher  
Hollis Upper Elementary School

Caryn Miller  
4<sup>th</sup> grade teacher  
Hollis Upper Elementary School

Karin Pillion  
Math Coordinator  
Brookline School District

## Resources

Robert E. Slavin, Cynthia Laike  
*Effective Programs in Elementary Mathematics: A Best Evidence Synthesis*  
February 2007  
Available at [222.cdre.org/resources/effprogsinmath.doc](http://222.cdre.org/resources/effprogsinmath.doc)

Pearl Gold Solomon  
*The Math We Need to Know and Do In Grades 6-9*  
Corwin Press, 2007

Committee on Prospering in the Global Economy of the 21st Century: An Agenda for American Science and Technology, National Academy of Sciences, National Academy of Engineering, Institute of Medicine  
*Rising Above the Gathering Storm*  
National Academies Press, 2007

Kilpatrick, J, Swafford, J and Findell, B (Eds)  
*Adding It Up: Helping Children Learn Mathematics*  
Washington, DC: National Academy Press, 2001

Deborah Loewenberg Ball, Joan Ferrini-Mundy, Jeremy Kilpatrick, R. James Milgram, Wilfried Schmid, and Richard Schaar  
*Reaching for Common Ground in K-12 Mathematics Education*  
Notices of the AMS, Volume 52, Number 9, 2005

Deborah Loewenberg Ball, Heather C. Hill, and Hyman Bass  
*Knowing Mathematics for Teaching*  
American Educator, Fall 2005, p. 14-17, 20-22, 43-46

[www.hoagiesgifted.org/math\\_gifted.htm](http://www.hoagiesgifted.org/math_gifted.htm)  
Compilation of websites that provide enrichment activities for mathematically promising students/

[www.allkindsofminds.org/](http://www.allkindsofminds.org/)  
resources  
learning bases  
This website provides strategies for developing and strengthening: (1) Thinking about Numbers, (2) Learning and Recalling Math Facts and (3) Recalling Math Facts Rapidly

*Principles and Standards for School Mathematics* (Reston, Va.: National Council of Teachers of Mathematics, 2000).

Linda Jensen Sheffield  
*Extending the Challenge in Mathematics: Developing Mathematical Promise in K-8 Students*  
Corwin Press and Texas Association for the Gifted and Talented  
2003

M. Suzanne Donovan and John D. Bransford, Editors  
*How Students Learn: Mathematics in the Classroom*  
National Academies Press, Washington, D.C., 2005

Andrew Isaacs, William Carroll, Max Bell  
*The Research Basis of the UCSMP Everyday Mathematics Curriculum*  
UCSMP Elementary Component  
June 2001

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Curriculum Focal Points for PreKindergarten through Grade 8 Mathematics  
National Council of Teachers of Mathematics, 2006

National Mathematics Advisory Panel Final Report  
March 2008

What Works Clearinghouse  
US Department of Education  
Institute of Education Services

Curriculum Guides from  
Achieve Inc.  
State of Connecticut  
State of California  
State of Missouri  
State of Massachusetts

**Hollis Primary School Principal's Report**  
Elizabeth Allen, Principal  
**Deb Trotter, Asst. Principal/SPED Coordinator**  
**October 2008**

**Enrollment**

Grade	Recomm Class Size	# of classes	Full Enrollment	As of 10/1/2008	Change from last report	Ave. class size	Actual class enrollments
Pre-K: 3 year olds	12	1	12	10		10	10
Pre-K: 4 year olds	12	1	12	11		11	11
Kindergarten	18	4	72	58	(3)	18 AM 12 PM	18,17 AM Session 14,9 PM Session
Grade 1	18	5	90	83		17	16,17,17,17,16
Grade 2	20	5	100	94		19	20,19,19,18,18
Grade 3	20	6	120	92	(1)	16	17,16,15,15,14,15
<i>Total</i>		<b>22 classes</b>	<b>406</b>	<b>347</b>	(4)		

**Staffing**

- Our building is fully staffed at this time.
- We have been meeting with our Math and Literacy Coaches, and our new staff is very excited to have the support of the coaches.

**Curriculum & Instruction**

- NWEA testing for Second Grade should be completed by 10/08/08, and our Third Grade completed testing during the week of 9/22/08. We plan to send home third grade reports on October 10, and second grade reports should be ready the following week.
- NECAP Testing begins for Grade 3 on Monday, Oct 6, and will continue through Oct 17.
- Teachers are reviewing the NWEA data to assist them in driving their classroom instruction. In addition to the NWEA testing results from the fall 2008, teachers are also

reviewing local data in the areas of reading and math from spring 2008 assessments to meet the instructional needs of students.

Percentage of students scoring in the **Proficient or Above Range** (NECAP 2007 Results)

	Grade 3 Grade 2 teaching results	Grade 4 Grade 3 teaching results	Grade 5 Grade 4 teaching results	Grade 6 Grade 5 teaching results	Grade 7 Grade 6 teaching results
Reading	83.4%	79.8%	83.8%	86.2%	91.2%
Math	88.4%	78.9%	79.8%	88.3%	89.6%

Student **Proficiency percentages on NECAP as predicted** by NWEA 2008 scores

	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Reading	86.3%	88.4%	87.5%
Math	84.7%	85.6%	85.4%

Percentage of students achieving their **growth targets** NWEA Fall 2007 to Spring 2008

	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Reading	N/A	75.7%	60.2%	59.9%
Math	N/A	70.4%	59.3%	77.5%

- Administrators and teachers are embracing the new Professional Growth Model, and meetings are taking place with staff members to create new goals. Under our new model, all goals should have a direct impact on student achievement.

**Programs/Activities**

- Our open house was held on September 23, and was well attended by approximately 98% of all families.
- Scott Hunter from the Hollis Fire Department spent the week of Sept 29 at the HPS. The focus of the visit was on fire safety.
- On September 22, I was honored to accept the Gold Circle Partnership Awards for school. Our PTA sent in the nomination for the awards to the NH Partners in Education. Eight local businesses were recognized for their contributions to our school community. The local businesses included: The Nashua Bank; Arthur Lyford, DMD; Skillings & Sons; Piani Designs; Liz Barbour's Creative Feast; Illusionator, Inc.; Hollis Construction; and Everything Nice by Kerri.
- The Hollis Elementary Schools were represented in the parade for "Hollis Old Home Days", and it was certainly a community building event.
- On September 21, I had the pleasure of attending a community event with fellow educators and community members to participate in an author visit by Michael Palmer. The event was auctioned off at last year's fundraiser.
- On Monday, September 29, we hosted a "Milken Foundation Festival" to formally recognize the generous grant funding for our outdoor classroom. Our entire school community gathered outdoors at the site where the garden will be located. In

addition to recognizing the Milken Foundation, we also recognized the Hollis-Brookline Rotary Club, The NH Council on the Arts, and the Hollis PTA for their donations to our Outdoor Classroom.

### **Administrative Focus Areas - October**

- NECAP administration
- Analysis of NWEA testing
- Goal setting conferences with staff
- Preliminary work on the budget
- Establishing a positive culture for learning
- Establishing positive staff relationships with our math and literacy coaches

### **Looking Ahead**

- 10/20-11/06 Parent Conferences
- 10/24 – Coffee Hour with Hollis Admin Team HPS 9:30
- 11/04 - Teacher Workshop Day, Focus on NWEA Testing and Early Literacy Skills

**Hollis Upper Elementary School Principal's Report**  
Candice Fowler, Principal  
**Katherine McBride, Assistant Principal**  
**October 2008**

**Enrollment**

Grade	Ed. Spec.	# of classes	Full Enrollment	As of 10/1/08	Change from last report	Ave. class size	Actual class enrollments
Grade 4	23	6	138	131	0	21.8	21, 21, 22, 22, 22, 23
Grade 5	23	5	115	113	0	22.6	22, 22, 23, 23, 23
Grade 6	23	6	138	144	-1	24.3	21, 24, 24, 25, 25, 25
<i>Total</i>		<b>17 classes</b>	<b>391</b>	<b>388</b>			
Home Study: 3							

**Staffing**

- We have found a candidate for our .3 reading position.
- We have contracted with Pam Osgood and Shailagh Klicker as our Math and Literacy coaches. ☺ Pam has already started her work with teachers....Shailagh will continue the work started in Sept.

**Curriculum & Instruction**

NWEA testing is complete for HUES. As we complete NWEA assessments, teachers and administration are busy analyzing growth data and planning learning steps for all students. Included are some data points that will drive our focus this year. Although we have great percentages for proficiency at each grade level, not all students are growing academically as seen by NECAP and NWEA growth reports.

Percentage of students scoring in the **Proficient or Above Range** (NECAP 2007 Results)

	Grade 3 Grade 2 teaching results	Grade 4 Grade 3 teaching results	Grade 5 Grade 4 teaching results	Grade 6 Grade 5 teaching results	Grade 7 Grade 6 teaching results
Reading	83.4%	79.8%	83.8%	86.2%	91.2%
Math	88.4%	78.9%	79.8%	88.3%	89.6%

Student **Proficiency percentages on NECAP as predicted** by NWEA 2008 scores

	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Reading	86.3%	88.4%	87.5%
Math	84.7%	85.6%	85.4%

Percentage of students achieving their **growth targets** NWEA Fall 2007 to Spring 2008

	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Reading	N/A	75.7%	60.2%	59.9%
Math	N/A	70.4%	59.3%	77.5%

- NECAP Science Reports will be sent home on October 10<sup>th</sup>. We will soon begin analyzing results and looking at ways to use the data to inform our teaching.
- The new professional growth model for supervision and evaluation is in place. Staff members are writing SMART goals and as we begin our formal observations, Kathy and I will utilize the new system and provide feedback to the SAU committee on its implementation.

### Programs/Activities

- Open House was quite successful! Many parents participated and classrooms were busy places. Feedback from a few parents was very positive and we will continue to use this model next year.
- Mrs. Colthart has created a HUES news team that conducts the morning announcements. The energy and excitement from our student reporters starts that day off wonderfully!
- HPS and HUES had a very productive joint staff meeting last month. Liz and I will continue to hold more joint meetings this year as we focus on collaboration between our buildings.
- HUES is the proud recipient of the Gold Circle Award. We were nominated by the PTA for our work with Nancy Bell – quilter – last year.
- Picture Day was beautiful and we were once again able to have outside photos. ☺

### Administrative Focus Areas - October

- NECAP administration
- Conducting NWEA workshops for staff on data analysis
- Preparing for the Fun Fair and Haunted House
- Fire Safety Month – A HUGE thank you to the Hollis Fire Dept Staff for once again volunteering their time for the benefit of our students.
- Safety – practicing drills for emergency situations
- Budget - preliminary work

### Looking Ahead

- 10/10 – NECAP Science Results sent home along with NWEA Results in backpack mail
- 10/18 – Fun Fair and Haunted House ☺
- 10/24 – Coffee Hour with Hollis Admin team HPS 9:30
- 11/1 – Toy Yard Sale Weekend