Daniel D. Waterman School
NUMERACY/PROBLEM SOLVING ACTION PLAN

Targets:	**Result Statement:** *All students will be actively engaged in Grades K-6 and demonstrate proficiency in number and operation concepts (functions & algebra, geometry and measurement, data, statistics, probability in accordance with grade level expectations) using various strategies to arrive at their solutions both orally and in writing.*
NECAP scores for number and operation, functions and algebra, geometry and measurement, data, statistics and probability will continue to increase by five percent for all grades.	*NECAP RESULTS 2010: Grade 3: 59%; Grade 4: 60%; Grade 5: 56 %; Grade 6: 80 %*

Changes in student learning behavior: What will students do to reach the identified results? What new things will they do to learn? What things will students do more frequently?	**Changing Instructional Practices:** What will teachers do to ensure students develop the learning behaviors identified in the first column? Be sure that the instructional practices address every student learning behavior.	**Monitoring Progress with Timelines and Adjustments**: How will we measure progress towards the changes in learning behavior and teaching that we want? How often will this occur? How will we keep the principal, parents, and SIT informed and involved?	**Professional Development**: What professional development will the school and central office provide to support the changes in instructional practice that we plan to bring about?	**Collaboration and Support:** When will we use the information we get from Professional Development sessions and monitoring to improve learning and teaching?	**School and District Support and Resources:** Beyond Professional development, what support and resources will the school and district provide in order to achieve the results of this action plan?	**Family/Community Communication and Training**: How will families and the community learn about this action plan? In what ways can they support their students' learning at home? What supports will they receive in learning how to support their students' learning at home?	**Evaluating Results:** How will the school evaluate the changes created by this plan? **Reporting to families and the Community:** How will the school communicate the results of this plan?

Students will:	**Teachers will:**	**What teachers will do to measure changes in student learning behavior:**	**Teachers will engage in the following professional development:**		**When and how will teachers collaborate and how will they report their work:**	**The school will supply the following support and resources:**	**The school community will communicate these action steps to parents/community by:**	**Who will be responsible for evaluating which information?**
Make connections between numeracy/problem solving skills and real life applications in order to develop a sense of purpose.	*Identify/develop activities and problems that reflect real life applications of numeracy concepts.* *Teach students to make connections between problems they have solved previously, and the current problem.*	**Utilize pretests and post-tests to compare student progress over time** **Compare attitudinal scales twice per school year –"How do you feel about math?"** **Analyze data from initial and mid-year math assessment s to focus instruction** **Progress monitor students at risk**	*Planning for Student Success* **Building Wide P D at the beginning of the school year** **Momentum Math (special educators, used with RTI)** **Envision Math (5th grade math resource) to bridge between 5th and 6th grade math** **Thinking Math (primary grades)** **Professional Development Progress Monitoring** **Differentiation of math instruction pd using tiered math problems**		**Quarterly meetings where a variety of grade levels present Information on instructional practices and classroom progress** **Monthly faculty meetings where teachers share best practices and will report classroom progress according to the *Planning for Student Success* P D at the beginning of the school year**	**Access to school for homework clubs, etc. through parent volunteers** **Provide parents with samples of exemplary student work as a reference**	**Develop a list serve of all parents to communicate news and up dates** **Update the Waterman school website to reflect these action plan changes** **Provide links from Waterman website to teacher cps e-mail accounts**	**Students will be responsible for reporting their progress and attitude in math** **Teachers will be responsible for evaluating the progress of their students and the effectiveness of classroom practices**
Solve meaningful, real-life problems. *Become actively engaged in solving real-life problems*	*Provide opportunities for students to reflect on the meaning and significance of the problems they are solving in the real world*							
Use and explain alternative ways to solve a problem by making connections between the various meanings of a number.	*Identify/create meaningful problems that require students to use their numeracy skills in authentic ways.* *Provide problems that can be solved multiple ways*							
Work on tiered/ differentiated assignments tailored to their individual needs.	*Develop differentiated assignments tailored to students' needs.* *Provide differentiated math homework three to four nights a week.* *Collect/create binders of problems of increasing difficulty for each grade level*	**What Teacher Leaders will do to measure changes in student learning behavior:** **Provide Fast Math reports to teachers to send home at least quarterly** **Complete data analysis including item analysis of state, standardized**	**What Teacher Leaders will do to measure changes in instructional practices:** **Conduct pre and post surveys with teachers**	**Teacher Leaders will engage in the following professional development:** ***Planning for Student Success***	**When and how will Teacher Leaders collaborate and how will they report their work?** **Monthly faculty and quarterly meetings where teacher leaders will report grade level and school progress according to the**	**The central office will supply the following support and resources:** **Weekly math coaches** **i-parent training for parents and teachers by grade level** **Training in the use of Fast Math management and progress monitoring systems**	**The school will help parents/community members learn to support their child's learning at home by:** **Providing quarterly Fast Math reports** **Conducting a parent workshop regarding the math program twice a year**	**Who will report to: The central office,** **Principal** **Reading Consultant** **Math Coaches** The school, **Teachers** **Teacher Assistants** **Math Strategic Committee** **Principal** **Reading Consultant** **Math Coaches**
Conference one on one or in small groups with their teacher about numeracy/ problem solving at least once a week	*Understand students and their interests, and incorporate those interests into numeracy problems, including student choice*							

Maintain a math portfolio to use as a resource and conference artifact *Talking about math with peers and working on problems in collaborative groups* *Explain and justify the answers they derive orally and in writing.* *Work on problems of increasing levels of challenge as they become ready*	*Find ways to structure class time to facilitate weekly conferencing with each student and review of portfolio entries* *Structure collaborative groups with clearly defined roles that require full engagement of every student* *Group students based on strengths and needs* *Model the process of explaining and using alternative ways to solve a problem.* *Require students to explain the answers they derive orally and in writing on a regular basis daily* *Listen carefully to what students are saying and the work they are doing to understand their abilities and needs.* *Develop problems at different levels of challenge based on students' needs and strengths and interests.* *Make increasingly challenging problems available.* *Create incentives for students to take on problems of increasing challenge.*	**,and district assessments** **Assist teachers with data analysis of state, standardized, and district assessments to focus instruction** **Mentor and/or informally coach teachers as necessary in appropriate math instruction** What Administrators will do to measure changes in student learning behavior: Monitor Fast Math usage and progress Analyze all assessments including, but not limited to; investigations unit tests, beginning, mid-year, and end of the year tests Observation of lessons Conferencing with students	**Compare pre and post attitudinal scales completed by students** Review longitudinal data of students to monitor progress What Administrators will do to measure changes in instructional practices: Pre and post survey of teacher's understanding of student engagement	**Building Wide P D at the beginning of the school year** **Using tiered problems in the classroom** **Looking at student work as a way to focus instruction** Administrators will engage in the following professional development:	***Planning for Student Success* P D at the beginning of the school year** When and how will Administrators collaborate and how will they report their work? Joint Principals' Meeting Elementary Principals' Meeting	Parents and the community will support this action plan by: Providing the school with an e-mail address which can be put on the list serve supporting ongoing improvements projects	**Conducting a parent workshop on using study island to support those classrooms which use it** **Sending home the family letter for each investigations unit** **Providing a math dictionary** **Providing a list of web sites to parents which have on-line math games** **Explore ways to combine student presentations with monthly parent group meetings**	The families, Teachers School Improvement Team Math Strategic Committee Principal The community? **Principal** **School Improvement Team** **The District** **RIDE**

Work on numeracy problems that incorporate areas of the student's personal interest	*Learn the individual strengths and needs of all students in the class.*							