School: Cascade Ridge Elementary School **Grade/Department:** Elementary **Content Area:** Math

CIP Goal: In 2009, at least 95% of fifth grade students will meet or exceed the standard on the math section of the WASL.

What are the Research-Identified Strategies?	**What are the Desired Student Products and Behaviors?**	**How Will You Accomplish This?** • Steps to implementing this strategy • Professions development • Visits • Additional research	**How Often?** • Frequency • Timeline	**What Evidence Will You Be Gathering Relative to the Desired Student Products and Behaviors?** • Formative • Summative
1. Using a strong research-based curriculum is critical. *A viable and guaranteed curriculum has the greatest impact on student achievement.* ~Marzano: *What Works in Schools* *A curriculum is more than a collection of activities; it must be coherent, focused on important mathematics, and well-articulated across the grades.* ~NCTM	Students will be actively engaged in the learning processes of math using *Everyday Math*. • Student discourse • Homework completion • Students analysis of errors • Self-monitoring progress • Self-reflection Students will be immersed in mathematical learning through every aspect and component of the *Everyday Math* curriculum.	All teachers will use all components of *Everyday Math* as their primary resource for math instruction. Teachers will meet in grade level and building teams to develop a shared vision and understanding of math instruction using *Everyday Math*. They will also review the curriculum, discuss pacing and challenges and will plan for upcoming units.	Beginning in August 2007, teachers will attend district training for *Everyday Math.* They will learn about the various components, recommended instructional strategies, organization and pacing. The curriculum will then be used starting the first few days of school and throughout the coming school years. Monthly	Baseline data will be collected regarding students' knowledge using the EDM beginning of year pre-test. Individual student performance and class-wide progress will be measured throughout the year using common grade level EDM unit assessments. Class data will be collected for grade level, building, and district analysis twice a year using the mid- year and end-of-year EDM assessments. Teachers will collaboratively analyze selected student work samples each trimester to determine building needs, classroom needs and individual students' math abilities.

2. Students need multiple and varied learning opportunities. *Opportunities to learn have the strongest relationship to student achievement.* ~Marzano: *What Works In Schools* ~Grouws & Cabella: *Improving Student Achievement in Mathematics*	Students will learn math for at least 70-90 minutes daily. Half day kindergarten will follow EDM standards.	Teachers will schedule math instruction daily for 70-90 minutes (not necessarily a "block"). Connections to other content areas will deepen and extend mathematical understanding. For example: • Math in PE –math relevant to fitness goals • Math in music – fractions relevant to calculating beats per measure of music • Math in library – books purchased with district money to support EDM. Specialists will be given a month-by-month calendar with grade level *Everday Math* unit overviews for easier integration of math.	September 2007- June 2009	A sampling of pacing will be collected over the course each school year.

3. Quality classroom instruction has a significant impact on student learning and understanding. The strongest possibility of improving student learning emerges where schools implement multiple changes based on research-supported practice implemented by skilled teachers **~Grouws & Cebulla** The individual classroom teacher could have the greatest impact on student achievement than any other school-level factor. The teacher factors are in the areas of instructional strategies and classroom management. ~Marzano: *What Works in Schools* ~Linda Darling Hammond: *Right to Learn*	Students will demonstrate increased use of mathematical vocabulary, understanding of math strands, problem solving strategies (both invented and conventional) and ability to communicate mathematically. Students will build on their foundation of existing knowledge of mathematics and apply this knowledge to gain understanding of new tasks and concepts. Students will solve math problems that are drawn from authentic scenarios and situations. These will be provided by *Everyday Math*.	Teachers will expand instructional strategies to promote active engagement, increase learning, discourse and inquiry among students. Differentiated strategies will be developed to support the needs of all learners • Provide staff support to differentiate math instruction using the *Everyday Math* materials. The EDM math trainers will meet with staff. Staff will be provided with training and modeling of effective math instructional strategies.	September 2007-June 2009 September 2007-June 2009 August, October, January and May 2007-2008 (2008-09 activities to be determined)	Teachers will informally observe student math behavior and dialogue. They will note the following : • Use of math vocabulary • Explanation of problem solving strategies used • Articulation of math strands • Math "look "fors" o Boys and girls contributing equally? o Students talking as often as the teacher? o Are lessons related to GLEs? o Are multiple strategies and approaches modeled? o Are real world connections made? o Are students using mental math? o Which grouping of students is most effective?

Effective learning focuses on student understanding and application of knowledge. *~UbD Research Summary* *~Improving Student Achievement in Mathematic Grouws & Cabella*		Strand studies around *Everyday Math* using research on best practices and *Everyday Math* resources including the Teacher's Reference Manual Other Staff development opportunities to be determined based on need.	Monthly Monthly	Teachers will gather data on students understanding of learning goals using: • Informal *Everyday Math* assessments • Unit Progress Checks. • Informal conversations with students • Homework and daily assignments Teachers will measure student performance on common grade level formative assessments administered Fall, Winter, and Spring during a pre-determined window of time.

4. Fluency in mathematical literacy- being able to read mathematically, writing mathematically and communicate mathematically- is a fundamental component of mathematics. Mathematical text may require a more specialized type of reader in order to gain necessary information. *~Barton et. al.* Writing is a powerful means to help students communicate their thinking and solidify their conceptual understanding. *~Pugalee et.al.* If students are to share their mathematical arguments & support them with evidence, then communication/language needs to be taught – ~Lampbert, et.al.	Students will communicate their mathematical understanding in multiple ways • Pictures • Words • Charts • Tables • Sentences • Equations and Numbers Students will use and articulate problem solving and thinking strategies Students will understand and employ different reading strategies to understand mathematics text.	Teachers will facilitate math communication as outlined in *Everyday Math*. Teachers will post mathematical vocabulary found in *Everyday Math* and on the WASL in their classroom for immediate student access. Teachers will provide reading strategies for reading mathematical texts- i.e. use of key words in problem that indicate the operation required.	September 2007- June 2009	Teachers will gather data on students mathematical communication skills by using: • Informal *Everyday Math* assessments • Unit Progress Checks. • Informal conversations with students • Homework and daily assignments Teachers will measure student performance on common EDM unit assessments and mid-year and end-of-year summative assessments..