



HANLONMATH

MATHEMATICAL SYSTEMS, INC.

Math Content Based Professional Development



The Daily QCPR: The Lynchpin That Sets Students Up for Success

Many of our students are living in less than ideal conditions. Those conditions might negatively impact their ability to study effectively and efficiently. To address these conditions, placing a greater emphasis on in-class learning is essential. A daily Quick Crisp Purposeful Review (QCPR) of important information, in conjunction with the Check For Proficiency(CFP), provides greater opportunities for struggling students, students living in poverty, to be successful by stressing important material daily.

No matter what we do in life, repetition is important, whether learning to dance, memorizing a speech, shooting baskets, or hitting golf shots. Knowing the importance of practice, it would be wise to build that into our daily instruction. That's where the daily QCPR comes into play with math instruction.

The daily QCPR is a brief, ten to twelve minute, daily review that focuses on essential knowledge—what we call “3-star questions.” These questions contain no math computation or manipulation but is math students need to know to be successful. They are definitions, identifications, theorems, formulas, procedures, strategies, etc. These questions should also help students do problems on the rest of the test. These 3-star questions are the only questions placed on the first page of chapter tests. The daily QCPR is followed by a CFP, called 2-star questions, which are problems associated with the 3-star questions. This pairing

ensures that students are not only remembering information, but also using it effectively.

For example, a 3-star question might ask students to write the midpoint formula. While that question itself requires recall, it directly supports their ability to solve problems later. An associated 2-star question might be: Find the midpoint of the line segment connecting (2,3) to (12,9). These 3-star questions are intentionally embedded throughout instruction, student notes, homework assignments, and assessments. The 2 and 3-star questions should have the same weight on tests.

Through the daily QCPR and CFP, students revisit key ideas daily. This repetition increases familiarity, student comfort levels and confidence, and promotes automaticity—allowing students to recall and apply concepts more quickly and accurately. Over time, students also begin to notice patterns and develop stronger decision-making skills when approaching different types of problems.

As examples, when solving quadratic equations, students must decide whether to use factoring, the x^2 method, completing the square, or the quadratic formula. When adding fractions; do they find the common denominator by multiplying, writing multiples, finding the LCM or using the reducing method? Regular exposure through the daily QCPR helps them pick up on nuances by comparing and contrasting to recognize which method is most efficient in a given situation.

The daily QCPR also has a lot of other benefits. It addresses absenteeism, since material will be reviewed every day, students won't have to keep interrupting teachers indicating they were not in school that day to learn that information.

While the QCPR, 3-star questions, are on the first page of unit/chapter tests, they are also in the instruction, marked as 3-star in the notes, and should be on homework assignments. If they can answer those 3-star questions because they are in the notes, chances are greater they can complete the homework assignment.

Implementing the daily QCPR is also a classroom management strategy. The daily QCPR requires teachers to begin class immediately. That is, if the period begins at 9:14, then the teachers leave their door at 9:13 and immediately begin reviewing the 3-star questions at 9:14. According to research, when teachers begin class immediately, students view them as better prepared, more organized and systematic in instruction, and better able to explain the material. Students also see these teachers as better classroom managers, friendlier, less punitive, more consistent and predictable, and as one who values student learning.

Using the Marketing Plan, the daily QCPR also promotes accountability. When parents see the parallel constructed practice test and actual assessment being placed side-by-side, parents readily see the value of the daily QCPR's, the 3-star questions that were reviewed daily in the beginning of each class with the QCPR questions on the first page of those tests. Parents are supportive when they see us helping their child succeed and are more willing to hold their student accountable. Missing 3-star questions is not acceptable. It takes the "I don't have the math gene" off the table as an excuse for not doing well in math.

Importantly, students receive credit for what they know, not just what they can calculate. For example, knowing the quadratic formula is recognized and rewarded as a 3-star question used in the daily QCPR. In addition, knowing that makes solving the quadratic equation a piece of cake. This approach often leads to improved performance and higher grades on tests.

Beyond grades, the QCPR builds confidence. Students are better prepared, less anxious, and more capable of tackling assessments. During tests, they can rely on the foundational knowledge reinforced through daily review, seeing questions on the first page, and using it as a guide to solve problems.

In terms of error analysis, we know that if a student does not know the formula, the probability of them successfully solving the equation is pretty close to zero.

Another benefit of the QCPR is its role in long-term preparation. The 3-star questions are on the first page of each unit test. Over time, these pages become valuable study guides for semester exams, standardized tests, and national exams such as the ACT, SAT, PARCC and SBAC as well as increasing proficiency rates.

In short, the daily QCPR is more than a routine. It is a powerful instructional tool that supports learning. It results in familiarity, increases student comfort levels, builds confidence, improves automaticity and enables students to pick up on nuances on how to approach problems by comparing and contrasting problems. Research in cognitive science is unequivocal: repetition strengthens memory through purposeful repetition and varied practice, we are not simply reviewing content. We are solidifying it, ensuring students retain, understand, and can confidently apply what they have learned.

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