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Teaching Problem-Solving Using a Systematic Framework

Problem-solving is a quintessential skill applicable to every sphere of our lives and is a foundation of teaching mathematics. In this talk we will discuss a pedagogical approach to teaching problem-solving using a problem-solving framework that is universal in nature. The discussion frames the problem-solving process with the focus on the problem's deliverable while addressing the inherent and specific conditions on the deliverable in a systematic way, using the dual principle of eyes-on-the-prize and just-in-time information. The framework proposed (and classroom-tested) acknowledges the importance of many skills in the problem-solving process, including but certainly not limited to literacy, recall, reflection, analysis, and focus. Teaching through this framework actively draws attention to, engages, and thus builds those skills. Mathematics, by its necessity in the art of living and its ubiquity in every education system, provides a perfect opportunity to grow these fundamental life skills through the application of the problem-solving framework we propose.