



EMTP 7 - Support Productive Struggle in Learning Mathematics

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2 Struggle in mathematics isn't a sign of failure—it's an essential part of learning. Effective teaching of
3 mathematics consistently provides students, individually and collectively, with opportunities and
4 supports to engage in productive struggle as they grapple with mathematical ideas and
5 relationships.

6 Researcher Manu Kapur writes, 'teaching that embraces and uses productive struggle leads to
7 long-term benefits, with students more able to apply their learning to new problem situations.'

8 Productive struggle happens when students engage deeply with a problem, exploring solutions and
9 learning through the process. Teachers play a key role in supporting this journey.

10 In order to ensure that the struggle is productive and not overwhelming, teachers must anticipate
11 potential struggles, plan strategic questions, and scaffold the process to keep students engaged
12 without letting frustration take over. In classrooms that value productive struggle, students
13 understand that learning happens in the process. Mistakes and misconceptions become
14 opportunities for growth, not setbacks.

15 When students persevere through challenges, ask for guidance when needed, and refuse to give
16 up, they are demonstrating the power of productive struggle. . These students will cheer one
17 another on, guide their peers, and celebrate progress without simply giving answers. Teachers can
18 foster this mindset by praising effort and facilitating discussions that help students discover their
19 own mathematical direction. This balance of support and independence builds confidence and

20 resilience. By embracing struggle, students not only master mathematical concepts but also
21 develop problem-solving skills they can apply to new challenges. Productive struggle transforms
22 how students learn math. With the right balance of support, encouragement, and perseverance,
23 students gain a deeper understanding of mathematics and the confidence to tackle any problem.