|  |  |
| --- | --- |
| **Support Productive Struggle In Learning Mathematics:**  **Teacher and Student Actions** | |
| **What are teachers doing?** | **What are students doing?** |
| * Anticipating what students might struggle with during a lesson and being prepared to support them productively through the struggle. * Giving students time to struggle with tasks, and asking questions that scaffold students’ thinking without stepping in to do the work for them. * Helping students realize that confusion and errors are a natural part of learning, by facilitating discussions on mistakes, misconceptions, and struggles. * Praising students for their efforts in making sense of mathematical ideas and perseverance in reasoning through problems. | * Struggling at times with mathematics tasks but knowing that breakthroughs often emerge from confusion and struggle. * Asking questions that are related to the sources of their struggles and will help them make progress in understanding and solving tasks. * Persevering in solving problems and realizing that is acceptable to say, “I don’t know how to proceed here,” but it is not acceptable to give up. * Helping one another without telling their classmates what the answer is or how to solve the problem. |

National Council of Teachers of Mathematics. (2014). *Principles to actions: Ensuring mathematical success for all*. Reston, VA: Author.

Writing Team: Steve Leinwand, Daniel J. Brahier, DeAnn Huinker, Robert Q. Berry III, Frederick L. Dillon, Matthew R. Larson, Miriam A. Leiva, W. Gary Martin, and Margaret S. Smith.

http://www.nctm.org/principlestoactions

NCTM_R_LogoandName4C_L.eps