

1125-Q5-1532 **James C Taylor*** (jtaylor@sfprep.org), 81 Calle Gurule, Santa Fe, NM 87505, and **Nicholas Bennett** (nick@nickbenn.com), NM. *The Missing ‘M’ in STEM: A Math Circles & Modeling Approach.*

Experiencing STEM programs over the past couple of decades, it is clear that there is very little M in STEM, with that morsel of math being used in the service of science or computer science. In most cases, somebody just tells the students the math they should use, perhaps with some hand-waving, and that is incorporated into their project. Some people put the M under the STE, showing that math is actually the basis of it all, but that just promotes the notion that math is a utilitarian subject, a tool for solving other types of problems. There is none of the sort of creative and often deep mathematical thinking we promote and teach in mathematical circles, just more blind implementation of techniques and algorithms. Standard approaches don’t encourage—and sometimes actually discourage—mathematical thinking. This session takes the mathematical discoveries arrived at in a familiar math circle and demonstrates how they can be explored and visualized using computer modeling tools (and programming). This approach could just as well be used to investigate mathematics that leads into scientific experimentation in other areas—the key point here being that we start with the mathematical exploration that will lead to a deeper understanding of the physical or computational systems. (Received September 17, 2016)