

1135-Q5-2115 **Mark C Hughes*** (hughes@mathematics.byu.edu). *Knotted mathematics for elementary-aged students.*

Understanding knots in 3-dimensional space has been a goal of topologists for over 100 years. Despite their complexity and the important mathematical concepts they lead to, knots can easily be introduced to elementary students, who are able to quickly begin studying and exploring concepts at a wide range of difficulty levels. In this talk I will discuss several ideas for Math Circle meetings based on concepts from knot theory. After tying their first knot with a piece of string or pipe-cleaner, students are ready to explore ideas such as algorithms and equivalence, all while twisting and bending the knots in their hands. Students learn about topological invariants while coloring diagrams and discussing analogies to popular board games. For older students more complicated concepts can be introduced – like Reidemeister moves and polynomial invariants – which still retain the same visual flavor that makes knot theory so appealing to younger children. (Received September 25, 2017)