

1162-97-98

**Jennifer Elyse Clinkenbeard\*** (jclinkenbeard@csumb.edu), 100 Campus Center, Seaside, CA 93955. *Food For Thought: Exploring Euclidean and non-Euclidean Geometries*. Preliminary report.

We present a series of inquiry-oriented tasks to visualize and model different geometries using common food items. We explore: (1) Euclid's parallel postulate and its consequences in the first book of Elements with spaghetti; (2) spherical geometry on the surface of an orange; and (3) hyperbolic geometry on Pringles chips. This activity series has been implemented in an inquiry-oriented, upper-division geometry course at CSU Monterey Bay. We discuss samples of the tasks above that have been implemented in the course, as well as samples of student models and responses to metacognitive writing prompts. We discuss the strengths and limitations of this approach with respect to heuristic reasoning. As Pólya observed in *How to Solve It*, heuristic reasoning supports the development of provisional reasoning. This does not constitute formal proof, nor should it be presented as such. We conclude with a discussion of these considerations in the context of Euclidean and non-Euclidean geometries, and how students' exploration with the models may contribute to readiness for more formal argument. (Received August 26, 2020)