

Paper Cup Mathematics Worksheet 1

Imagine a discarded paper cup rolling on its side on a flat surface. What geometric shape does the path of the cup form?

1. In your group, choose a cup and trace its path as it rolls along on a sheet of chart paper. Describe both your procedure and the resulting path.
2. Make and record all cup measurements that are needed to find the area of the path of the rolling cup. Find the area of the path formed.
3. Carefully cut along the seam of your cup, remove the bottom, and flatten the rest of the cup. Using your path drawing to explore how the flattened part of the cup is related to the path. How many times would you have to trace the flattened cup to make a complete path?
4. Suppose that a new cup has the same top circumference, as your original cup but the bottom circumference, height, and slant height are different. Will the same number of "new" flattened cups fit in this cup's path, as was the case for the original? Explain your reasoning.