

Maths Circle Explorations: Session 1

October 2021

2. Take a sheet of paper, and draw a line passing through the center and parallel to one of the edges. This line divides the sheet into two equal halves. Mark a dot anywhere in one of the halves. Mark another dot anywhere in the other half. Now fold the sheet along the line, such that the dots are on the visible side of the sheet. If this line is made horizontal, stick the two edges that are vertical. The object you get has a cylindrical shape with two open faces. One face has a line along it. Hold the object with this face pointing up. Imagine you are holding a mug or a cup with its rim alongside the line (and the bottom covered). On the outside of this cup is a dot. Imagine that an ant is sitting at that dot. On the inside of the cup is another dot. Imagine that there is a grain of sugar stuck at this dot. So, our ant, call it lazy or efficient, wants to crawl to the grain of sugar with the shortest possible path. How should it proceed?

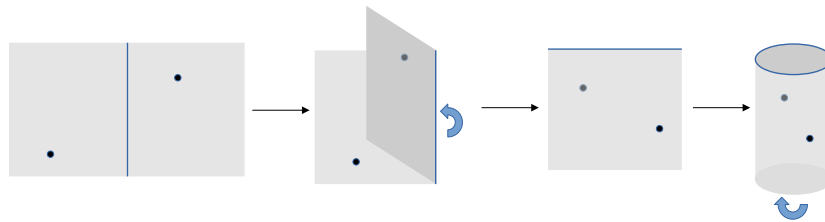


Figure 1: Activity 2