

## STEP INTO SIXTH FORM

# TASK 3: MATHEMATICS, ENGINEERING & COMPUTING

### INTRODUCTION VIDEO

Click [here](#) to view the task introduction video.

### TASK: Four Towns Problem

Four towns are located on the four corners of a square of side length 10km, as illustrated by the diagram.

The local council wants to connect them all using roads, so that it is possible to get from each town to each other town (but not necessarily directly). What are some possible ways it could do this? Calculate the length of road needed in each case.

They want to save on costs and use the minimum amount of road that they can. What road design would result in this and how much road does this require?



### EXTENSION:

Calculate the angles around this minimum connector.

What other questions can we ask about this problem? How could we extend it?

### WEBSITES AND ONLINE LEARNING MATERIALS

James Grime Video Solution: <https://www.youtube.com/watch?v=dAyDi1aa40E> (watch to 2:32)

Final proof run: <https://www.loom.com/share/3cf26681f629433dad136afa0f5c9aab>

### CONTACT

For any questions about your Step Into Sixth Form task, please select the STEM pathway via the chat function [vtour.stokesfc.ac.uk](https://vtour.stokesfc.ac.uk)