 Spider and the fly

The problem

A spider is sitting in the middle of one of the smallest walls in my living room and a fly is resting by the side of the window on the opposite wall.

The room is a rectangular prism which is 5m long, 4m wide and 2.5m high. The fly is 1.5m above the ground and 0.5m from the edge of the wall.

What is the shortest distance the spider would have to crawl to catch the fly?

The investigation

1. Draw a picture of the room and mark on all necessary measurements.
2. Draw at least 4 different possible nets for the room.
3. For each of your nets, mark in the position of the spider and the fly and draw in the shortest path between the two.
4. Mark in all appropriate measurements on your nets (eg room lengths and widths, distances to spider from wall)
5. Use Pythagoras’ Theorem to calculate the shortest distance between the spider and the fly for each of your nets
6. Write a statement to show which net and which path gives the shortest distance and how you calculated your answer.

Outcomes

* **MA4-1WM** communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols
* **MA4-2WM** applies appropriate mathematical techniques to solve problems
* **MA4-16MG** applies Pythagoras’ theorem to calculate side lengths in right-angled triangles, and solves related problems