

Don't let the ladder slip (PRIMARY)

Read it -- Try it safely -- Explore it further

Don't climb a ladder until you learn how it might slip.

Test if a ladder made of wood will slip on a tiled floor.

Surfaces that are smooth slip easily because they have a low value of friction.

Learn how to measure friction with a ruler.

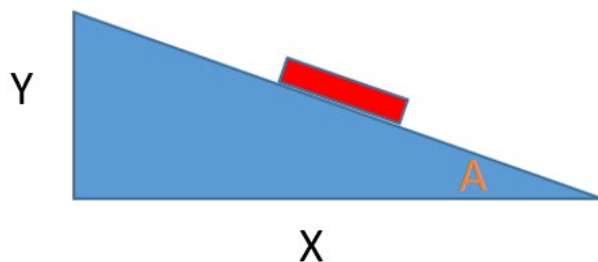
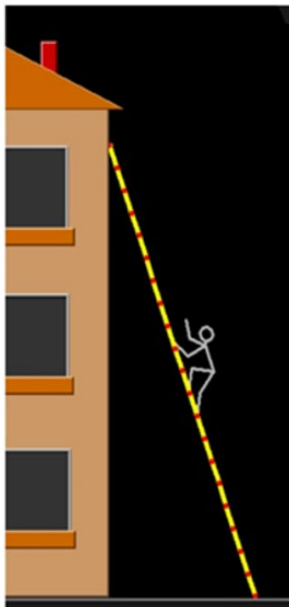
Place a wooden block on a tile.

Tilt the tile until the block of wood just begins to slip.

The steeper the tilt before slipping occurs the safer.

Use a ruler to measure the distances shown.

[If a tile is not available any hard flat surface will do]



Increase the angle A of the ramp until the red block just begins to slip.

Measure X and Y.

$$\text{Then Friction} = \frac{Y}{X}$$

For greater accuracy, repeat many times and find the average.

Extension activity:

Test if polishing the ramp changes the result.