

Aim:

To determine the slope of a beach.

Materials required:

Two wooden poles

Line

Measuring tape

Leveler

Procedure:

The slope of a beach and the shape of its dunes are heavily influenced by tides, wind patterns, storm events and the movement of sand that takes place during these events.

To study the changes in the slope of beach, I carried out this experiment. I took two wooden poles and fixed the first one at the end of the beach (near to the land). Then I fixed the second pole to the outer beach (near to the water) and measured the distance between the two wooden poles with the help of a measuring tape and noted it as hypotenuse.

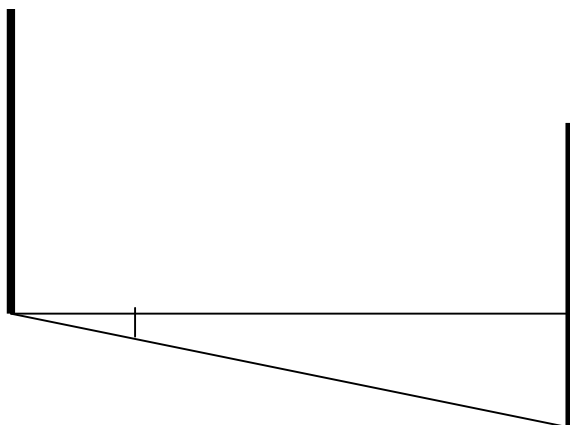
I tied a line to the bottom end of the pole that is fixed on the outer beach and tied the other end to the vertical pole in such a way that the line makes 90° with the vertical pole. I determined this with the help of a leveler. I measured the length of the line with the help of measuring tape and recorded the value in the tabular column as adjacent.

I repeated the procedure on the different places and recorded the values. From the values I calculated the slope.

A graph is then drawn to compare the values of the slope at different places.

Tabular column:

Position	Hypotenuse(m)	Adjacent(m)
1		
2		
3		
4		
5		
6		



From the values, I calculated the slope of the beach using the formula,

$$\text{Slope} = \cos^{-1}(\text{adjacent}/\text{hypotenuse})$$