

Investigating the Height of a Stack of Cookies

Is there a relationship between the height of a stack of sandwich cookies, such as regular Oreo™ cookies, and the number of cookies?

Using sandwich cookies and a centimeter ruler, measure, to the nearest 0.1 centimeter, the height of a variety of stacks, such as 0, 2, 3, 5, 7, and 10 cookies. Record your data.

number of cookies	height of stack
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

The collected data can be entered into the accompanying "Just Add Data" Excel spreadsheet (http://academic.pgcc.edu/~ssinex/cookies_stack.xls), which will determine the line of best fit by a linear regression performed on the data. A measure of the goodness of fit for the regression is given by r^2 . A perfect fit of the model to the data would yield at $r^2 = 1$. Record your equation in terms of the variable studies (not x and y) and the value of r^2 . This is your mathematical model!

What does the slope represent in terms of the variables investigated?

What are the units of the slope?

