





DIG INTO LINEAR FUNCTIONS: THE ROPE PROBLEM

Presented by MathLinks Authors Mark Goldstein and Shelley Kriegler

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In this session, we will explore a context that helps students:

- Use mathematical representations to solve a problem.
- Interpret slope and y-intercept in a meaningful way.

The Rope Problem

Suppose a rope is "bent" back and forth. When cut, it may look something like this.





What relationships could we explore?

Exploring layers, cuts, and pieces

1.1

. .



Figure A





3 layers

7 pieces

2 cuts





Collect Data





Collect Data





Collect Data





Connect and Extend

Number of Layers (q)	Number of Pieces (p)	
I.	lc + 1	
2	2c + I	
3	3c + I	
4	4c + 1	



$$p = q \cdot c + 1$$

How are the expressions and graphs related?



In this session, students generalized relationships in the rope problem by:

- Using mathematical representations to solve the problem
- Interpreting slope and y-intercept in a meaningful way



Handout



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THANK YOU!

Shelley Kriegler (shelley@mathandteaching.org)

Mark Goldstein (mark@mathandteaching.org)

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