



Hitting the Slopes with the TI-Nspire

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Materials:

- TI-Nspire™ (non-CAS)
- HitTheSlope.tns
- Hitting the Slopes Nspire.pdf
- TI-Nspire™ Software (for editing)

Level: Algebra 1

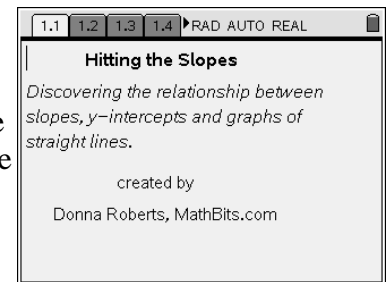
Classroom setup:

- Students may use this activity with ONLY the worksheet and their TI-Nspire, or ...
- Students may use this activity with BOTH the worksheet and the .tns file.
- Some familiarity with the calculator is assumed

Using the files:

Choose which is best for your students:

1. The worksheet (*Hitting the Slopes Nspire.pdf*) may be used without the accompanying .tns file. If you feel that your students are not ready to utilize .tns files, the worksheet alone will be a good introduction to the investigative capabilities of the Nspire. It requires the students to use the TI-Nspire to investigate rotating and translating lines with basic instructions included.



2. The worksheet, in conjunction with the .tns file, is a more in-depth activity. Students maximize their exposure to both the concepts of slope and to the capabilities of their calculators.

HitTheSlopes.tns

The activity consists of 10 screens:

- Investigation: Slope**: Instructions for rotating a line. The graph shows a line $f_1(x) = 2x + 1$ with a y-intercept of 1 and a y-value of 14.75 at $x = 2$.
- Add the graphs of $y = x + 1$ and $y = 0.5x + 1$** : Instructions to record observations of positive slopes. The graph shows a line with a y-intercept of 1 and a y-value of 10.54 at $x = 5$.
- Graph $y = -2x + 3$, $y = -x + 3$, $y = -0.5x + 3$** : Instructions to record observations of negative slopes. The graph shows a line with a y-intercept of 3 and a y-value of 29.87 at $x = 5$.
- Graph $y = 0x + 5$, $y = 2$, $y = -5$** : Instructions to record observations of zero slopes. The graph shows a horizontal line with a y-intercept of 5 and a y-value of 29.87 at $x = 5$.
- Graph $y = 2x + 5$, $y = 2x$, $y = 2x - 5$** : Instructions to record observations of equal slopes. The graph shows a line with a y-intercept of 5 and a y-value of 29.87 at $x = 5$.
- Investigation: y-intercept**: Instructions for translating a line. The graph shows a line with a y-intercept of 5 and a y-value of 29.87 at $x = 5$.
- Graph $y = 2x + 1$, $y = 2x + 7$, $y = 2x - 5$** : Instructions to record observations of changes in y-intercepts. The graph shows a line with a y-intercept of 5 and a y-value of 29.87 at $x = 5$.
- Describe the graph of $y = 4x - 5$. Then graph it.**: A final instruction screen. The graph shows a line with a y-intercept of 5 and a y-value of 29.87 at $x = 5$.