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| **Teachers: Ms. Moore, Ms. Baker, Ms. Pedrazine, Ms. Scherer, Ms. Uhling** |
| **Date:** April 26, 2016 (STEM Thursday) |
| **Grade Level/Subject: 8th Grade/Math - Slope** |
| **Materials:**   1. **Slippery Slope Student Hand-out** 2. **Rulers** 3. **Transparent centimeter grid** 4. **Dry erase markers** 5. **Markers/Sharpies** |
| **TEKS:**  **8.4** The student applies mathematical process standards to explain proportional and non-proportional relationships involving slope. The student is expected to:  **(A)** use similar right triangles to develop an understanding that slope, *m*, given as the rate comparing the change in *y*-values to the change in *x*-values, (y2 - y1)/ (x2 - x1), is the same for any two points (x1, y1) and (x2, y2) on the same line. |
| **ENGAGE**  1.Students will be shown a video about Ski Slopes. Students are told to ask for examples of: negative slope, positive slope, zero slope as they watch video?  [Ski Slope](http://www.pbslearningmedia.org/resource/mgbh-math-ee-rpslope/ski-jumping-understanding-proportional-relationships/) video: http://www.pbslearningmedia.org/resource/mgbh-math-ee-rpslope/ski-jumping-understanding-proportional-relationships/  **Probing questions**:   * What example is given in the video of a positive slope? Negative slope? Zero slope? * What are similar triangles? (same angles, proportional sides) * In similar right triangles, what part of the triangle shows the slope? (hypotenuse) * What formula do we use to calculate slope?   Transition statement: Now that we have begun to think about finding slopes in the real world, let’s explore some more places outside of the classroom where you will encounter slope. |
| **EXPLORE**   1. Pass out Slippery Slope student hand-out 2. Teacher will guide students through the Ski Slope (#1). 3. Teacher will then allow students to work in partners to complete the exploration. Students may use rulers and markers to help identify the points more easily. 4. Answers to worksheet:    1. Ski Slope- negative ⅔    2. Roller Coaster- ¾    3. Ramp- ½    4. Slide- negative 1   **Probing questions:**   * If we use any two points along the slope line to make a right triangle, then the slope line represents what part of this triangle? * How can you tell if a slope is negative or positive? (either visually or as x increases, y decreases) |
| **EXPLAIN**   1. Teacher will call the whole class back together to explain their findings.   **Probing questions**:   * Which pictures showed a positive slope? * Which pictures showed a negative slope? * Is it possible to create a right triangle with two points along the same line that is not similar to the ones we have drawn? * Where else would you find slope other than the examples given? (roof, handicap ramp, mountain). * What can we conclude about all points on the same line? (they have the same slope)   **Transition Statement**: Now that you have a better understanding of where to find slope outside of the classroom, it is time for you to create your own word problem. |
| **ELABORATE**   1. Teacher will pass out transparent grids. 2. Students will draw a picture with a slope (any of the examples used in explore, roof, handicap ramp, mountain). 3. They will then write a question using their picture. |
| **EVALUATE**   1. Students will independently solve the problem below: |