

# 4A: Slope

Extra Practice: Textbook  
pg

## Finding Slope!

Slope is... rate of change or  $\frac{\text{change in } y}{\text{change in } x}$

| ... in a Graph, Table, or with Two Points   |  |
|---|--|
| <p>Table: pick 2 points <math>\rightarrow</math></p> <p>Graph: Draw a <math>\Delta</math> and count</p> | <p>2 Points: <math>(x_1, y_1)</math> &amp; <math>(x_2, y_2)</math></p> $\frac{y_2 - y_1}{x_2 - x_1}$ |
| ... In an Equation  |  |
| $y = \underline{m}x + b$<br><br>$m = \text{slope}$  | <p>rewrite to look like</p> $y = mx + b$   |
| ... in a Situation  |  |
| <p>find the thing that is changing</p>  | <p>ex: 16 miles in 2 hrs = <math>\frac{16}{2}</math></p>   |

## Slope Exploration

Slope is...

| Representation                  | Work   | Where's the slope?  |   |    |   |    |     |   |   |   |     |   |   |  |
|---------------------------------|--|---|---|----|---|----|-----|---|---|---|-----|---|---|--|
| Equation                        | $y = \frac{1}{2}x + 3$   | $y = \underline{m}x + b$  |   |    |   |    |     |   |   |   |     |   |   |  |
| Table                           | <table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr><td>-2</td><td>2</td></tr> <tr><td>-1</td><td>2.5</td></tr> <tr><td>0</td><td>3</td></tr> <tr><td>1</td><td>3.5</td></tr> <tr><td>2</td><td>4</td></tr> </tbody> </table> <p>+1</p> | x   | y | -2 | 2 | -1 | 2.5 | 0 | 3 | 1 | 3.5 | 2 | 4 | $\frac{\text{change in } y}{\text{change in } x}$<br><br>$2 + \frac{1}{2}$ |
| x                               | y  |   |   |    |   |    |     |   |   |   |     |   |   |  |
| -2                              | 2  |   |   |    |   |    |     |   |   |   |     |   |   |  |
| -1                              | 2.5  |   |   |    |   |    |     |   |   |   |     |   |   |  |
| 0                               | 3  |   |   |    |   |    |     |   |   |   |     |   |   |  |
| 1                               | 3.5  |   |   |    |   |    |     |   |   |   |     |   |   |  |
| 2                               | 4  |   |   |    |   |    |     |   |   |   |     |   |   |  |
| Graph                           |  | <p>for every change in <math>x</math>, <math>y</math> goes up by <math>\frac{1}{2}</math></p> |   |    |   |    |     |   |   |   |     |   |   |  |
| Two Specific Points on the Line | Point 1: $(-2, 2)$<br>Point 2: $(2, 4)$  | $\frac{2-4}{-2-2} = \frac{-2}{-4} = \frac{1}{2}$  |   |    |   |    |     |   |   |   |     |   |   |  |
| Situation                       | Sam gets <u>one</u> new achievement every <u>two</u> days he plays his video game. He started the game with 3 achievements already.  | $\frac{1 \text{ achievement}}{2 \text{ days}}$  |   |    |   |    |     |   |   |   |     |   |   |  |