Math 1 5.6 Parallel and Perpendicular Lines Unit 2 Day 6

*SWBAT classify lines as parallel, perpendicular, or neither, and write the equations of parallel and perpendicular lines.*

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|  | **Parallel Lines** | **Perpendicular Lines** |
| **Picture (Graph)** |  |  |
| **Things you already know** | *
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| **Definition** |  |  |
| **Example** |  |  |

**Writing an Equation of a Parallel Line:** *Find the parallel slope first, then substitute the point into y = mx + b.*

1. A line passes through (12, 5) and is parallel to the graph of $y=\frac{2}{3}x-1$. What equation represents the line in slope-intercept form?
2. A line passes through (-3, -1) and is parallel to the graph of $y=2x+3$. What equation represents the line in slope-intercept form?

**Writing an Equation of a Perpendicular Line:** *Find the perpendicular slope first, then substitute the point into y = mx + b.*

1. Write the equation of a line that passes through (2, 4) and is perpendicular to the graph of $y=\frac{1}{3}x-1$.
2. A line passes through (1, 8) and is perpendicular to the graph $y=2x+1$. What equation represents the line in slope-intercept form?