# Understanding Slope and Line Equations

## Today's Standard

8.EE.B6 - Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.

| Cues | Notes |
| --- | --- |
| Slope<br><br>Similar triangles<br><br>y = mx<br><br>y = mx + b<br><br>Coordinate plane | Slope measures the steepness of a line and is the same between any two points on a non-vertical line.<br><br>Similar triangles help explain why the slope is consistent.<br><br>The equation y = mx represents a line through the origin.<br><br>The equation y = mx + b represents a line with a y-intercept at b.<br><br>Understanding these concepts is crucial for graphing and interpreting linear relationships. |

## Summary

Understanding slope and linear equations is fundamental in mathematics. It involves using similar triangles to explain the consistency of slope and deriving equations for lines with and without a y-intercept.