The UbD Template, Version 2.0

<table>
<tr><td>Time Frame: 20 days</td><td>Unit Title: Dilations, Similarity, Introducing Slope</td><td>Course Name: Grade 8 Illustrative Math</td></tr>
<tr><td colspan="3">Stage 1 - Desired Results</td></tr>
<tr><td rowspan="6">Established Goals
What content standards will this unit address?

8.G.A.3: Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
8.G.A.4: Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations.
8.EE.B.6: 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.
8.F.B.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description or from two (x, y) values, including reading these from a table or from a graph.</td><td colspan="2">Transfer</td></tr>
<tr><td colspan="2">Students will independently use their learning to show concepts of dilations, similarity, and slope and their relevance in various mathematical contexts. They will recognize the connection between these concepts and real-world situations.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>UNDERSTANDINGS
● Identify and describe dilations in both two-dimensional and three-dimensional settings.
● Understand and apply the concept of similarity to solve problems involving geometric figures.
● Define slope as a measure of steepness and calculate slope using the rise over run formula.
● Interpret and analyze the slope of a line in various contexts, including graphs and real-world situations.
● Make inferences between dilations, similarity, and slope, and their applications in real-world situations.</td><td>ESSENTIAL QUESTIONS:
How can dilations be used to transform and resize geometric figures?
What is the relationship between similarity and dilations?
How does slope help us understand the steepness of a line and its representation on a graph?
In what ways do these mathematical concepts apply to real-world scenarios?</td></tr>
<tr><td colspan="2">Acquisition</td></tr>
<tr><td>Students will know…

How to construct linear functions and determine their rate of change and initial value from a description, table, or graph

The relationship between similar triangles and slope</td><td>Students will be skilled at…

Explaining the relationship between similar triangles and slope, understanding why the slope is the same between any two distinct points on a non-vertical line.</td></tr>
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	Vocab associated: Dilation Scale factor Enlargement Reduce/reduction Similarity Similar figures Congruence Transformation Translation Rotation Reflection Slope Steepness Positive slope Negative slope Zero slope Undefined slope Rate of change Coordinate plane Vertical distance/Horizontal distance Triangle similarity Corresponding angles Corresponding sides Proportional relationship Parallel lines	Constructing linear functions and determining their rate of change and initial value from various representations, such as descriptions, tables, or graphs