Subject: Math Grade: 7 Unit #: 2 Title: Stretching and Shrinking

UNIT OVERVIEW

STAGE ONE: Identify Desired Results

Established Goals/Standards

Standards
7.RP.A.2
7.RP.A.2a, 2b
7.RP.A.3
7.EE.B.3
7.EE.B.4
7.EE.G.2
7.EE.G.6
7.EE.B.4a

Long-Term Transfer Goal

At the end of this unit, students will use what they have learned to independently…
Apply their knowledge of similarity to better understand real world geometry in their environment. Students have frequent encounters outside of the classroom that require understanding of enlargement, reduction, scale factors, and similarity-related concepts.

Meaning

Enduring Understandings
Students will understand that…
- Develop an understanding of similarity
- Use proportional reasoning to solve problems involving similarity

Essential Questions
Students will consider such questions as…
- What does it mean for two shapes to be similar?
- How can similarity properties be used to solve problems?

Acquisition

What knowledge will students learn as part of this unit?

Students will know
- What a scale factor is
- Properties of similar figures
- Algebraic rules that produce similar figures
- The role that multiplication plays in similar figures
- The relationship between scale factor and ratio in similar figures
- The effect on an image of a figure if a number is added to the x or y coordinates of the figure's vertices
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What skills will students learn as part of this unit?

Students will be skilled at
- Finding scale factor
- Comparing corresponding sides and angles of similar figures
- Using scale factor/ratios to describe relationships among the side lengths, perimeter, and area of similar figures
- Determining if an algebraic rule produces a similar figure
- Determining if a rule will shrink or enlarge a figure
- Using properties of similarity to find distances and heights that cannot be measured directly
- Predicting ways that stretching and shrinking a figure will affect side lengths,

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			angle measurements, perimeters, and area • Using scale factors and ratios to find missing side lengths in a pair of similar figures • Using similarity to solve real world problems

STAGE TWO: Determine Acceptable Evidence	
	Assessment Evidence
Criteria for to assess understanding: *(This is used to build the scoring tool.)*	Performance Task focused on Transfer: Flag pole question (#8 on unit assessment) to be used as a transfer question
	Other Assessment Evidence: Formative Assessments with Feedback • Check Up 1 after investigation 1 • Check Up 2 after investigation 2 • Partner Quiz in the middle of investigation 4 Summative Assessment Common assessment at the end of the unit

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T, M, A *(Code for Transfer, Meaning Making and Acquisition)*	**STAGE THREE: Plan Learning Experiences**	
	Learning Events:	Evidence of learning: *(formative assessment)*
	Investigation 1: Enlarging and Reducing Shapes	
M	1.1-Solving a Mystery 1.2 Scaling Up and Down	Check Up 1 for written feedback
	Investigation 2: Similar Figures 2.1 Drawing Wumps	
M	2.2 Hats off to the Wumps 2.3 Mouthing Off and Nosing Around	Check Up 2 for written feedback
	Investigation 4: Similarity and Ratios 4.1 Ratios Within Similar Parallelograms	Partner Quiz to be done in the middle of Investigation 4 for written feedback
M	4.2 Ratios Within Similar Triangles 4.3 Finding Missing Parts 4.4 Using Shadows to Find Heights	