

Table of Contents¹**Similarity, Proof, and Trigonometry**

Module Overview	3
Topic A: Scale Drawings (G-SRT.A.1, G-SRT.B.4, G-MG.A.3)	9
Lesson 1: Scale Drawings	11
Lesson 2: Making Scale Drawings Using the Ratio Method	27
Lesson 3: Making Scale Drawings Using the Parallel Method	44
Lesson 4: Comparing the Ratio Method with the Parallel Method	59
Lesson 5: Scale Factors	72
Topic B: Dilations (G-SRT.A.1, G-SRT.B.4)	88
Lesson 6: Dilations as Transformations of the Plane	90
Lesson 7: How Do Dilations Map Segments?	104
Lesson 8: How Do Dilations Map Lines, Rays, and Circles?	120
Lesson 9: How Do Dilations Map Angles?	135
Lesson 10: Dividing the King's Foot into 12 Equal Pieces	148
Lesson 11: Dilations from Different Centers	162
Topic C: Similarity and Dilations (G-SRT.A.2, G-SRT.A.3, G-SRT.B.5, G-MG.A.1)	179
Lesson 12: What Are Similarity Transformations, and Why Do We Need Them?	181
Lesson 13: Properties of Similarity Transformations	195
Lesson 14: Similarity	217
Lesson 15: The Angle-Angle (AA) Criterion for Two Triangles to be Similar	229
Lesson 16: Between-Figure and Within-Figure Ratios	242
Lesson 17: The Side-Angle-Side (SAS) and Side-Side-Side (SSS) Criteria for Two Triangles to be Similar	255
Lesson 18: Similarity and the Angle Bisector Theorem	271
Lesson 19: Families of Parallel Lines and the Circumference of the Earth	283
Lesson 20: How Far Away Is the Moon?	297

¹ Each lesson is ONE day, and ONE day is considered a 45-minute period.

Mid-Module Assessment and Rubric	306
<i>Topics A through C (assessment 1 day, return 1 day, remediation or further applications 4 days)</i>	
Topic D: Applying Similarity to Right Triangles (G-SRT.B.4)	333
Lesson 21: Special Relationships Within Right Triangles—Dividing into Two Similar Sub-Triangles	334
Lesson 22: Multiplying and Dividing Expressions with Radicals	348
Lesson 23: Adding and Subtracting Expressions with Radicals	363
Lesson 24: Prove the Pythagorean Theorem Using Similarity	373
Topic E: Trigonometry (G-SRT.C.6 , G-SRT.C.7 , G-SRT.C.8)	385
Lesson 25: Incredibly Useful Ratios	387
Lesson 26: The Definition of Sine, Cosine, and Tangent	401
Lesson 27: Sine and Cosine of Complementary Angles and Special Angles	414
Lesson 28: Solving Problems Using Sine and Cosine.....	424
Lesson 29: Applying Tangents.....	437
Lesson 30: Trigonometry and the Pythagorean Theorem	450
Lesson 31: Using Trigonometry to Determine Area	462
Lesson 32: Using Trigonometry to Find Side Lengths of an Acute Triangle	473
Lesson 33: Applying the Laws of Sines and Cosines	485
Lesson 34: Unknown Angles	498
End-of-Module Assessment and Rubric	511
<i>Topics A through E (assessment 1 day, return 1 day, remediation or further applications 4 days)</i>	