Textbook Alignment to the Utah Core

Instructional Materials Evaluation Criteria (name and grade of the core document used to align)

Geometry

Title ***Geometry*** **© 2008** **ISBN# 978-0-07-873826-5**

Publisher: Glencoe McGraw-Hill

Name of Person conducting alignment: not available

Overall percentage of coverage of the Utah State Core Curriculum: 100%

Standard I: Students will use algebraic and geometric ideas to understand trigonometry.

Percentage of coverage for Standard I: 100%

Objectives	Indicators	If covered, appropriate page #'s	Comments on coverage
Objective 1: Use triangle relationships to solve problems.	a. Solve problems using the properties of special right triangles, e.g., 30°, 60°, 90° or 45°, 45°, 90°.	**Student Edition:** 448-454, 462 #62-#63, 463 #7-#8, 470 #33-#35, 488 #18-#22, 491 #7-#8, 509 #47 *Extra Practice Lesson 8-3* 815 *Geometry Lab* 447 **Teacher Wraparound Edition** A 454; AE 449, 450; DI 449; F 450; I 450	

	b. Identify the trigonometric relationships of sine, cosine, and tangent using right triangles.	**Student Edition:** 456-462, 463 #10-#13, 464-470, 471-477, 479-485 *Geometry Software Lab* 478 *Graphing Calculator Lab* 455 **Teacher Wraparound Edition** A 455, 470, 485; AE 457, 458, 459, 473, 474, 480, 481; DI 458; PA 459, 465, 485; T 464	
	c. Express trigonometric relationships using exact values and approximations.	**Student Edition:** 456-462, 463 #10-#13, 464-470, 471-477, 479-485 *Geometry Software Lab* 478 *Graphing Calculator Lab* 455 **Teacher Wraparound Edition** A 455, 470, 485; AE 457, 458, 459, 473, 474, 480, 481; DI 458; PA 459, 465, 485; T 464	
Objective 2: Use the trigonometric ratios of sine, cosine, and tangent to represent and solve for missing parts of triangles.	a. Find the angle measure in degrees given the trigonometric ratio.	**Student Edition:** 459 ex 4, 460 #12-#13, 461 #44-#49, 463 #14, 464-470, 472 ex 1, 473 #14, 475 #14, 480 ex 2, 482 #3, 483 #19-#22, 489 #32, 490 #36-#37, 491 #14, 503 #49 **Teacher Wraparound Edition:** AE 459, 472, 473, 481, 482	

	b. Find the trigonometric ratio given the angle measure in degrees using a calculator.	**Student Edition:** 456-462, 463 #10-#13, 464-470, 471-477, 479-485 *Geometry Software Lab* 478 *Graphing Calculator Lab* 455 **Teacher Wraparound Edition** A 455, 470, 485; AE 457, 458, 459, 473, 474, 480, 481; DI 458; PA 459, 465, 485; T 464	
	c. Find unknown measures of right triangles using sine, cosine, and tangent functions and their inverses.	**Student Edition:** 456-462, 463 #10-#13, 464-470, 471-477, 479-485 *Geometry Software Lab* 478 *Graphing Calculator Lab* 455 **Teacher Wraparound Edition** A 455, 470, 485; AE 457, 458, 459, 473, 474, 480, 481; DI 458; PA 459, 465, 485; T 464	
Standard II: Students will model and solve problems using spatial and logical reasoning and applications of geometric principles. **Percentage of coverage for Standard II: 100%**			
Objectives	**Indicators**	**If covered, appropriate page #'s**	**Comments on coverage**
Objective 1: Use inductive and deductive reasoning to develop mathematical arguments.	a. Write conditional statements, converses, and inverses and determine the truth value of these statements.	**Student Edition:** 84 ex 1, 85 ex 2, 91-97, 104 #36-#38, 109 #31, 110 #8, 117 #39-#40, 134 #17-#22, 137 #7 *Reading Math* 98 **Teacher Wraparound Edition** A 97; AE 84, 85, 92, 93; F 94; PA 97; T 98; TNT 92, 93	

	b. Formulate conjectures using inductive reasoning.	**Student Edition:** 78-82, 90 #56-#61, 97 #60-#62, 110 #1-#3, 133 #11-#13, 137 #1-#3 **Teacher Wraparound Edition:** A 82; AE 79, 80; PA 82; T 78; TNT 79	
	c. Prove a statement false by using a counterexample.	**Student Edition:** 47 #38, 79 ex 3, 80 #5-#6, 81 #25-#30, 109 #31, 110 #1-#2, 133 #11-#13, 134 #19-#22, 137 #1-#3, 138 #1 *Extra Practice Lesson 2-1* 802 *Reading Math* 98 **Teacher Wraparound Edition** A 82; AE 80	
Objective 2: Analyze characteristics and properties of angles.	a. Use accepted geometric notation for lines, segments, rays and angles.	This objective is met throughout the textbook. See the following specific examples. **Student Edition:** 6-11, 20 #62-#65, 29 #66-#71, 38 #55-#57, 39 #1-#2, 69 #6-#8, 73 #1-#3, 74 #1, 75 #10 *Reading Math* 12 **Teacher Wraparound Edition:** A 11, 12; AE 7, 8; DI 11; T 12	
	b. Identify and determine relationships in adjacent, complementary, supplementary, or vertical angles and linear pairs.	**Student Edition:** 40-47, 57 #57-#58, 66 #40-#41, 71 #26-#29, 73 #16, 74 #5, 77 #16-#17, 196 #4, 197 #7 **Teacher Wraparound Edition** A 47; AE 41, 42, 44; DI 43; PA 42; T 48	

	c. Classify angle pairs formed by two lines and a transversal.	**Student Edition:** 142-147, 149-154, 192 #9-#12, 195 #1, 196 #4 *Geometry Software Lab* 148 **Teacher Wraparound Edition** A 154; AE 144, 150, 151; PA 147; T 148; TNT 144	`
	d. Prove relationships in angle pairs.	**Student Edition:** 124-131, 136 #45, 137 #17-#18, 147 #56, 153 #26 **Teacher Wraparound Edition:** A 131; AE 127; F 126; GL 128; PA 131	
	e. Prove lines parallel or perpendicular using slope or angle relationships.	**Student Edition:** 142-147, 149-154, 159 ex 3, 161 #23-#28, 164 #14-#15, 172-179, 194 #24-#26 *Geometry Lab* 158 *Geometry Software Lab* 148 *Study Tip* 174 **Teacher Wraparound Edition** A 159; AE 159, 173, 174, 175; F 175	
Objective 3: Analyze characteristics and properties of triangles.	a. Prove congruency and similarity of triangles using postulates and theorems.	**Student Edition:** 388-396, 397-403, 404 #11-#13, 414 #36-#60, 422 #39-#40, 425 #12-#13, 427 #6-#8 **Teacher Wraparound Edition** A 396; AE 389, 390, 391, 398, 399; DI 389; F 398; PA 396, 403	

	b. Prove the Pythagorean Theorem and its converse in multiple ways and find missing sides of right triangles using the Pythagorean Theorem.	**Student Edition:** 440-446, 454 #42-#47, 462 #62-#63, 463 #4, 487 #15-#17, 491 #7-#8, 492 #3, 493 #8 *Geometry Lab* 439 **Teacher Wraparound Edition:** A 439, 446; AE 441, 442, 443; PA 443; T 439	
	c. Apply triangle inequality theorems.	**Student Edition:** 280-287, 296-301, 302-309, 311 #12-#16, 312 #18-#22, 313 #9-#12, 314 #6, 323 #45-#50 *Graphing Calculator Lab* 95 **Teacher Wraparound Edition:** A 287; AE 281, 283, 294, 297, 298; F 282; PA 283, 298; TNT 297; TT 442	
	d. Identify medians, altitudes, and angle bisectors of a triangle, and the perpendicular bisectors of the sides of a triangle.	**Student Edition:** 269-278, 287 #53-#55, 293 #37-#8, 294 #1-#5, 310 #5-#6, 311 #9-#11, 313 #1-#3 *Geometry Lab* 266-268 *Reading Math* 279 **Teacher Wraparound Edition** A 268; AE 270, 272; DI 271; T 266	
Objective 4: Analyze characteristics and properties of polygons and circles.	a. Use examples and non-examples to classify subsets of quadrilaterals.	**Student Edition:** 325-330, 333-339, 340-346, 347 #12-#13, 348-354, 356-362 *Geometry Lab* 355 *Graphing Calculator Lab* 332 *Reading Math* 331 **Teacher Wraparound Edition** A 331, 332, 339; AE 334, 335, 336, 343, 350; DI 335, 354; EA 346; PA 339, 351	

	b. Prove properties of quadrilaterals using triangle congruence relationships, postulates, and theorems.	**Student Edition:** 326 ex 1, 328 #3-#5, 329 #34-#37, 338 #18-#19, 339 #36, 343 ex 4, 345 #33-#36, 348 ex 1, 351 #1, 352 #9-#14, 356 ex 1, 359 #1, 360 #7-#10, 363-368 **Teacher Wraparound Edition** AE 326, 334, 336, 343, 349, 357	
	c. Derive and justify formulas for the number of diagonals, lines of symmetry, angle measures, perimeter, and area of regular polygons.	**Student Edition:** 318-323, 329 #31, 330 #43, 346 #41 *Geometry Lab* 358, 630, 638 *Graphing Calculator Lab* 324 *Spreadsheet Lab* 324 **Teacher Wraparound Edition** A 324; AE 319, 320, 321; DI 327, 341; F 320; GL 631, 638; PA 320; TNT 639	
	d. Solve problems involving radii, diameters, chords, secants, arcs, sectors, central angles, inscribed angles, and tangents of circles.	**Student Edition:** 554 ex 1, 555 ex 2, 557 #1-#4, 563-569, 570-577, 578-586, 588-596, 599-606 *Geometry Lab* 597-598, 607-613 **Teacher Wraparound Edition** A 569, 596; AE 555; DI 565; F 591, 601; GL 589; PA 577; T 607	
	e. Prove and use relationships between the measures of intercepted arcs and inscribed or central angles.	**Student Edition:** 578-586, 587 #14, 596 #40-#42, 606 #50-#52, 622 #35-#40, 625 #9, 627 #9 *Geometry Lab* 597-598 **Teacher Wraparound Edition** A 586; AE 579, 580, 581, 582; PA 586	

Objective 5: Analyze characteristics and properties of three-dimensional figures.	a. Classify three-dimensional figures by their distinguishing characteristics.	**Student Edition:** 60-66, 72 #33-#37, 75 #10 **Teacher Wraparound Edition** A 66; AE 61	
	b. Identify three-dimensional objects from different perspectives using nets, cross-sections, and two-dimensional views.	**Student Edition:** 682 ex 3, 683 #14-#19, 684 #33-#35, 691 #41-#43 *Geometry Lab* 681 **Teacher Wraparound Edition** AE 682; GL 681	
Standard III: Students will use coordinate geometry to explore geometric relationships and solve problems. **Percentage of coverage for Standard III: 100%**			
Objectives	**Indicators**	**If covered, appropriate page #'s**	**Comments on coverage**
Objective 1: Describe spatial relationships using coordinate geometry.	a. Verify the classifications of geometric figures using coordinate geometry to find lengths and slopes.	**Student Edition:** 329 #31-#33, 336 ex 5, 343 ex 4, 344 #6, 345 #30-#31, 347 #12-#13, 350 ex 3, 354 #45-#46, 357 ex 3, 359 #3-#4, 360 #13-#16, 361 #25-#26, 364 ex 3, 370 #17-#19, 371 #20 **Teacher Wraparound Edition** AE 336, 343, 350, 357, 364	
	b. Find the distance between two given points and find the coordinates of the midpoint.	**Student Edition:** 21-29, 38 #49-#51, 39 #7-#11, 47 #44-#49, 70 #15-#21, 73 #8-#10, 75 #7, 204 ex 4, 205 #7-#8, 206 #17-#20, 207 #37, 227 ex 2, 229 #2-#3, 230 #9-#12, 252 ex 3 **Teacher Wraparound Edition:** AE 22, 23, 24, 204, 227, 252; DI 24; I 23	

	c. Write an equation of a line perpendicular or parallel to a line through a given point.	**Student Edition:** 167 ex 4, 168 #9-#10, 169 #29-#32, 179 #42, 187 #42-#43, 193 #16-#17, 195 #13-#14 *Geometry Lab* 171 **Teacher Wraparound Edition:** AE 166	
	d. Graph a circle given the equation in the form $(x-h)^2+(y-k)^2=r^2$ and write the equation when given the graph.	**Student Edition:** 615 ex 3, 617 #6-#7, 624 #56, 625 #21, 627 #13 **Teacher Wraparound Edition** AE 616	
	e. Determine whether points in a set are collinear.	**Student Edition:** 8 ex 4, 9 #25 **Teacher Wraparound Edition:** AE 8	
	f. Use translation, reflections, and rotations in the context of coordinate geometry.	**Student Edition:** 497-503, 504-509, 510-517, 518 #10, 524 #38-#41, 525-532, 544 #11-#13, 546 #31-#32, 547 #7-#9, 548 #2, 549 #7 *Geometry Lab* 496 **Teacher Wraparound Edition** AE 498, 499, 505, 511, 527, 528; F 512; PA 509	
Objective 2: Solve real world problems using visualization and spatial reasoning.	a. Solve problems using the Pythagorean Theorem.	**Student Edition:** 440-446, 454 #42-#47, 462 #62-#63, 463 #4, 487 #15-#17, 491 #7-#8, 492 #3, 493 #8 *Geometry Lab* 439 **Teacher Wraparound Edition:** A 439, 446; AE 441, 442, 443; PA 443; T 439	

	b. Solve problems using the distance formula.	**Student Edition:** 21-29, 38 #49-#51, 39 #7-#11, 47 #44-#49, 70 #15-#21, 73 #8-#10, 75 #7, 204 ex 4, 205 #7-#8, 206 #17-#20, 207 #37, 227 ex 2, 229 #2-#3, 230 #9-#12, 252 ex 3 **Teacher Wraparound Edition:** AE 22, 23, 24, 204, 227, 252; DI 24; I 23	
	c. Solve problems involving trigonometric ratios.	**Student Edition:** 456-462, 463 #10-#13, 464-470, 471-477, 479-485 *Geometry Software Lab* 478 *Graphing Calculator Lab* 455 **Teacher Wraparound Edition** A 455, 470, 485; AE 457, 458, 459, 473, 474, 480, 481; DI 458; PA 459, 465, 485; T 464	`
	d. Solve problems using geometric properties.	This objective is met throughout the textbook. See the following specific examples. **Student Edition:** 318-323, 329 #31, 330 #43, 346 #41 *Geometry Lab* 358, 630, 638 *Graphing Calculator Lab* 324 *Spreadsheet Lab* 324 **Teacher Wraparound Edition** A 324; AE 319, 320, 321; DI 327, 341; F 320; GL 631, 638; PA 320; TNT 639	

Standard IV: Students will use measurement tools, formulas, and techniques to explore geometric relationships and solve problems. **Percentage of coverage for Standard IV: 100%**			
Objectives	**Indicators**	**If covered, appropriate page #'s**	**Comments on coverage**
Objective 1: Perform basic geometric constructions, describing and justifying the procedures used.	a. Investigate geometric relationships using constructions.	**Student Edition:** *Construction* 16, 25, 33, 35, 48, 182, 186, 225, 228, 234, 266, 267, 268, 341, 350, 409, 413, 576, 592, 594, 597	
	b. Copy and bisect angles and segments.	**Student Edition:** *Construction* 16, 33, 35, 268, 409, 413	
	c. Construct perpendicular and parallel lines.	**Student Edition:** *Construction* 48, 172, 182, 188, 266	
	d. Justify procedures used to construct geometric figures.	**Student Edition:** *Construction* 16, 25, 33, 35, 48, 182, 186, 225, 228, 234, 266, 267, 268, 341, 350, 409, 413, 576, 592, 594, 597	
	e. Discover and investigate conjectures about geometric properties using constructions.	**Student Edition:** *Construction* 16, 25, 33, 35, 48, 182, 186, 225, 228, 234, 266, 267, 268, 341, 350, 409, 413, 576, 592, 594, 597	
Objective 2: Find measurements of plane and solid figures.	a. Find linear and angle measures in real-world situations using appropriate tools or technology.	**Student Edition:** 13-20, 31-38, 69 #14, 70 #25 **Teacher Wraparound Edition:** AE 16, 34; DI 15; T 13	
	b. Derive surface area and volume formulas for polyhedra, cones, and cylinders.	**Student Edition:** 686-691, 693-697, 698 #9-#10, 699-705, 706-710, 728-735, 737-742 **Teacher Wraparound Edition** A 691, 697, 705; AE 687, 688, 694, 700, 701, 707, 708; DI 707; F 695; PA 694	`

	c. Determine perimeter, area, surface area, lateral area, and volume for prisms, cylinders, pyramids, cones, and spheres given the formulas.	**Student Edition:** 686-691, 693-697, 698 #9-#10, 699-705, 706-710, 728-735, 737-742 **Teacher Wraparound Edition** A 691, 697, 705; AE 687, 688, 694, 700, 701, 707, 708; DI 707; F 695; PA 694	
	d. Calculate or estimate the area of an irregular region.	**Student Edition:** 658-663, 671 #35-#36, 674 #30-#22, 675 #15, 676 #1 **Teacher Wraparound Edition** AA 665; AE 632, 659, 660; PA 659	
	e. Find the length of an arc and the area of a sector given the angle measure and radius.	**Student Edition:** 565 ex 2, 566 ex 4, 567 #5-#8, 568 #32-#35, 577 #53-#55, 587 #5, 621 #17-#20, 625 #7-#9, 666 ex 2, 668 #2-#3, 669 #14-#16, 671 #33, 674 ex 5 **Teacher Wraparound Edition** A 569; AE 565, 566, 666; DI 565; PA 569	