Bartlett City Schools’ Geometry instructional maps are standards-based maps driven by the TN Standards and implemented using a variety of educational resources.

Students should enter Geometry with an understanding and the ability to solve and interpret linear equations and associated graphs, be familiar with quadratic equations, understand the Pythagorean Theorem, be able to identify two- and three- dimensional shapes, and be familiar with the basic geometric (measurement) formulas. Geometry provides a graphical and visual representation of the mathematical world around us. These representations should be included across all objectives. Students should be given an opportunity to develop spatial sense and an understanding of a variety means of providing reasoning, mathematical arguments, and proofs. The justifications used in geometry should include a variety of techniques including paragraph and algebraic proofs. Technology should be a component of the instruction. The instructional approach should provide opportunities for students to work together collaboratively and cooperatively as they solve routine and non-routine problems. Communication strategies should include reading, writing, speaking, and critical listening as students present and evaluate mathematical arguments, proofs, and explanations about their reasoning. Physical materials should continue to be part of the development of mathematical understanding.

The Tennessee State Standards will prepare students with essential knowledge and skills to compete in an increasingly global environment. These standards emphasize thinking, problem-solving and creativity through next generation assessments that go beyond multiple-choice tests to increase college and career-readiness among Tennessee students. Additional information for Tennessee educators, as well as curricular resources and math tasks can be found at the TN Core website at [www.tncore.org](http://www.tncore.org)

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council’s report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy).

[**The Standards for Mathematical Practice**](http://www.corestandards.org/Math/Practice)

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| **MP1. Make sense of problems and persevere in solving them.** | **MP2. Reason abstractly and quantitatively.** | **MP3. Construct viable arguments and critique the reasoning of others.** | **MP4. Model with mathematics.** |
| **MP5. Use appropriate tools strategically.** | **MP6. Attend to precision.** | **MP7. Look for and make use of structure.** | **MP8. Look for and express regularity in repeated reasoninG.** |

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| **TN Standards** | **Scope/Clarification &**  **Learning Outcomes** | **Content & Tasks** |
| **Chapter 10 – Circles**  **(Allow 2.5 weeks for instruction, review, and assessment)** | | |
| Understand and apply theorems about circles  G.C.A.1   * Recognize that all circles are similar.   G.C.A.2   * Identify and describe relationships among inscribed angles, radii, and chords.   Explain volume and surface area formulas and use them to solve problems  G.GMD.A.1   * Give an informal argument for the formulas for the circumference of a circle and the volume and surface area of a cylinder, cone, prism, and pyramid. | *Scope & Clarifications*   * G.C.A.2 – Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle, and properties of angles for a quadrilateral inscribed in a circle. * G.GMD.A.1 – Informal arguments may include but are not limited to using the dissection argument, applying Cavalieri’s principle, and constructing informal limit arguments.   *Learning Outcomes*   * Identify and use parts of circles. * Solve problems involving the circumference of a circle. * Describe the relationship between circle pairs. | Lesson 10-1 – Circles and Circumference  [Math Goodies - Circles](http://www.mathgoodies.com/lessons/vol2/geometry.html)  [Buffon’s Needle](http://mste.illinois.edu/reese/buffon/buffon.html)  [Khan Academy Video - Circles](https://www.khanacademy.org/math/geometry/circles/v/circles--radius--diameter-and-circumference?playlist=Geometry)  [On Line Math Learning - Circles](http://www.onlinemathlearning.com/circles.html)  NCTM Activities:  [Investigate Circumference and Area](http://illuminations.nctm.org/ActivityDetail.aspx?ID=116)  [Computing Pi](http://illuminations.nctm.org/ActivityDetail.aspx?ID=161) |
| Understand and apply theorems about circles  G.C.A.2   * Identify and describe relationships among inscribed angles, radii, and chords.   Find areas of sectors of circles  G.C.B.4   * Know the formula and find the area of a sector of a circle in a real-world context. | *Scope & Clarifications*   * G.C.A.2 – Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle, and properties of angles for a quadrilateral inscribed in a circle. * G.C.B.4 – For example, use proportional relationships and angles measured in degrees or radians.   *Learning Outcomes*   * Identify central angles, major arcs, minor arcs, semicircles, and find their measures. * Find arc lengths. | Lesson 10-2 – Measuring Angles and Arcs  [Lesson on Angles and Arcs](http://mrperezonlinemathtutor.com/G/4_1_Central_Angles_and_Arcs.html) |
| Understand and apply theorems about circles  G.C.A.2   * Identify and describe relationships among inscribed angles, radii, and chords.   Make geometric constructions  G.CO.D.12   * Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). | *Scope & Clarifications*   * G.C.A.2 – Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle, and properties of angles for a quadrilateral inscribed in a circle. * G.CO.D.12 - Constructions include but are not limited to: copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; constructing a line parallel to a given line through a point not on the line, and constructing the following objects inscribed in a circle: an equilateral triangle, square, and a regular hexagon.   *Learning Outcomes*   * Recognize and use relationships between arcs and chords. * Recognize and use relationships between arcs, chords, and diameters. * Construct a circle through three non-collinear points. | Lesson 10-3 – Arcs and Chords  [On Line Math Learning – Chord Theorems](http://www.onlinemathlearning.com/chords-circle.html) |
| Understand and apply theorems about circles  G.C.A.2   * Identify and describe relationships among inscribed angles, radii, and chords.   G.C.A.3   * Construct the incenter and circumcenter of a triangle and use their properties to solve problems in context. | *Scope & Clarifications*   * G.C.A.2 – Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle, and properties of angles for a quadrilateral inscribed in a circle.   *Learning Outcomes*   * Find the measures of inscribed angles, using the Inscribed Angle Theorem. * Find the measures of angles of inscribed polygons. * Use inscribed angles in proofs. * Construct the incenter and circumcenter of a triangle and use their properties to solve problems in context. | Lesson 10-4 – Inscribed Angles  [Lesson on Inscribed Angles](http://mrperezonlinemathtutor.com/G/4_3_Inscribed_Angles_and_Arcs.html)  [TI-84 Activity – Angles and Arcs](http://education.ti.com/calculators/downloads/US/Activities/Detail?id=9977&ref=%2fcalculators%2fdownloads%2fUS%2fActivities%2fSearch%2fSubject%3fs%3d5022%26sa%3d5024%26t%3d5047%26d%3d9) |
| Understand and apply theorems about circles  G.C.A.2   * Identify and describe relationships among inscribed angles, radii, and chords.   Make geometric constructions  G.CO.D.12   * Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). | *Scope & Clarifications*   * G.C.A.2 – Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle, and properties of angles for a quadrilateral inscribed in a circle. * G.CO.D.12 - Constructions include but are not limited to: copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; constructing a line parallel to a given line through a point not on the line, and constructing the following objects inscribed in a circle: an equilateral triangle, square, and a regular hexagon.   *Learning Outcomes*   * Use properties/theorems of tangents. * Solve problems involving circumscribed polygons. * Construct a line tangent to a circle through an external point using a compass and a straight-edge. | Lesson 10-5 – Tangents;  [On Line Math Learning - Tangents](http://www.onlinemathlearning.com/tangent-circle.html)  [NCTM Lesson – Power of Points](http://illuminations.nctm.org/LessonDetail.aspx?id=L700) |
| Understand and apply theorems about circles  G.C.A.2   * Identify and describe relationships among inscribed angles, radii, and chords. | *Scope & Clarifications*   * G.C.A.2 – Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle, and properties of angles for a quadrilateral inscribed in a circle.   *Learning Outcomes*   * Find measures of angles formed by lines intersecting on or inside a circle. * Find measures of angles formed by lines intersecting outside the circle. | Lesson 10-6 – Secants, Tangents, and Angle Measure |
| Understand and apply theorems about circles  G.C.A.2   * Identify and describe relationships among inscribed angles, radii, and chords. | *Scope & Clarifications*   * G.C.A.2 – Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle, and properties of angles for a quadrilateral inscribed in a circle.   *Learning Outcomes*   * Find measures of segments that intersect in the interior of a circle, using the Segments of Chords Theorem. * Find measures of segments that intersect in the exterior of a circle, using the Secant Segments Theorem. * Use the intersection of a secant and a tangent to find an unknown measure. | Lesson 10-7 – Special Segments in Circles |
| Translate between the geometric description and the equation of a circle  G.GPE.A.1   * Know and write the equation of a circle of given center and radius using the Pythagorean Theorem. | *Scope & Clarifications*   * There are no assessment limits for this standard. The entire standard is assessed in this course.   *Learning Outcomes*   * Know and write the equation of a circle of given center and radius using the Pythagorean Theorem. | Lesson 10-8 – Equations of Circles and Graphing Technology Lab 10.8 (using TI-Nspire)  [Math Warehouse – Equation of Circle](http://www.mathwarehouse.com/geometry/circle/equation-of-a-circle.php)  [Coordinate Geometry - Circles](http://www.maths.com/geometry/coordinate-geometry/equation-of-a-circle/index.htm) |
| **Chapter 11 – Areas of Polygons and Circles**  **(Allow 2.5 weeks for instruction, review, and assessment)** | | |
| Use coordinates to prove simple geometric theorems algebraically  G.GPE.B.5   * Know and use coordinates to compute perimeters of polygons and areas of triangles and rectangles.   Define trigonometric ratios and solve problems involving right triangles  G.SRT.C.8 (a)   * Know and use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. | *Scope & Clarifications*   * G.GPE.B.5 – For example, use the distance formula. * G.SRT.C.8 (a) – Ambiguous cases will not be included in assessment.   *Learning Outcomes*   * Find the perimeters and areas of parallelograms. * Find the perimeters and areas of triangles. | Lesson 11-1 – Areas of Parallelograms and Triangles  [Math Goodies – Area of Triangles](http://www.mathgoodies.com/lessons/vol1/area_triangle.html)  [On Line Math Learning - Areas](http://www.onlinemathlearning.com/area-formula.html)  [TI-84 Activity – Comparing Perimeters and Areas](http://education.ti.com/en/us/activity/detail?id=5BEE6ECE6CC14832BD3F1F4F6403B44A) |
| Use coordinates to prove simple geometric theorems algebraically  G.GPE.B.5   * Know and use coordinates to compute perimeters of polygons and areas of triangles and rectangles.   Define trigonometric ratios and solve problems involving right triangles  G.SRT.C.8 (a)   * Know and use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. | *Scope & Clarifications*   * G.GPE.B.5 – For example, use the distance formula. * G.SRT.C.8 (a) – Ambiguous cases will not be included in assessment.   *Learning Outcomes*   * Find areas of trapezoids. * Find areas of rhombi and kites. | Lesson 11-2 – Areas of Trapezoids, Rhombi, and Kites  [AAA Math – Review of Area](http://www.aaamath.com/geo.html#topic12) |
| Find areas of sectors of circles  G.C.B.4   * Know the formula and find the area of a sector of a circle in a real-world context. | *Scope & Clarifications*   * G.C.B.4 – For example, use proportional relationships and angles measured in degrees or radians.   *Learning Outcomes*   * Find areas of circles. * Find areas of sectors of circles, including in a real-world context. | Lesson 11-3 – Areas of Circles and Sectors  [Math Goodies – Circumference and Area](http://www.mathgoodies.com/lessons/toc_vol2.html)  [NCTM Lesson – Circle Packing](http://illuminations.nctm.org/LessonDetail.aspx?ID=U175) |
| Use coordinates to prove simple geometric theorems algebraically  G.GPE.B.5   * Know and use coordinates to compute perimeters of polygons and areas of triangles and rectangles.   Define trigonometric ratios and solve problems involving right triangles  G.SRT.C.8 (a)   * Know and use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.   Apply geometric concepts in modeling situations  G.MG.A.2   * Apply geometric methods to solve real-world problems. | *Scope & Clarifications*   * G.GPE.B.5 – For example, use the distance formula. * G.SRT.C.8 (a) – Ambiguous cases will not be included in assessment. * G.MG.A.2 – Geometric methods may include but are not limited to using geometric shapes, the probability of a shaded region, density, and design problems.   *Learning Outcomes*   * Find areas of regular polygons. * Find areas of composite figures. * Apply area formulas to solve real-world problems. * Investigate areas of regular polygons. * Find the area of inscribed and circumscribed polygons on a coordinate plane. | Lesson 11-4 – Area of Regular Polygons and Composite Figures  Geometry Lab 11-4 |
| Use coordinates to prove simple geometric theorems algebraically  G.GPE.B.5   * Know and use coordinates to compute perimeters of polygons and areas of triangles and rectangles.   Apply geometric concepts in modeling situations  G.MG.A.1   * Use geometric shapes, their measures, and their properties to describe objects. | *Scope & Clarifications*   * G.GPE.B.5 – For example, use the distance formula. * G.MG.A.1 – For example, model a tree trunk or a human torso as a cylinder.   *Learning Outcomes*   * Find areas of similar figures by using scale factors. * Find scale factors of missing measures given the areas of similar figures. | Lesson 11-5 – Areas of Similar Figures  [NCTM Applet with Scale Factor](http://illuminations.nctm.org/ActivityDetail.aspx?ID=176) |
| **Chapter 12 - Extending Surface Area and Volume**  **(Allow 3 weeks for instruction, review, and assessment)** | | |
| Apply geometric concepts in modeling situations  G.MG.A.1   * Use geometric shapes, their measures, and their properties to describe objects. | *Scope & Clarifications*   * G.MG.A.1 – For example, model a tree trunk or a human torso as a cylinder.   Learning Outcomes   * Identify, describe, and draw right and oblique solids. | Geometry Lab 12-1 – Solids Formed by Translation |
| Optional Section | Optional Section (time not allocated in pacing guide) | Lesson 12-1 – Representations of Three-Dimensional Figures  [Khan Academy Video – Conic Sections](https://www.khanacademy.org/math/algebra/conic-sections/conic_basics/v/introduction-to-conic-sections?playlist=Algebra)  [On Line Math Learning - Solids](http://www.onlinemathlearning.com/solid-geometry.html#net)  [Applet of Platonic Solids](http://nlvm.usu.edu/en/nav/frames_asid_126_g_3_t_3.html?open=instructions) |
| Explain volume and surface area formulas and use them to solve problems  G.GMD.A.1   * Give an informal argument for the formulas for the circumference of a circle and the volume and surface area of a cylinder, cone, prism, and pyramid.   G.GMD.A.2   * Know and use volume and surface area formulas for cylinders, cones, prisms, pyramids, and spheres to solve problems. | *Scope & Clarifications*   * G.GMD.A.1 – Informal arguments may include but are not limited to using the dissection argument, applying Cavalieri’s principle, and constructing informal limit arguments.   *Learning Outcomes*   * Give an informal argument for the formulas for the surface area of a prism and cylinder. * Know and use the surface area formulas for prisms and cylinders. | Lesson 12-2 – Surface Area of Prisms and Cylinders  On Line Math Learning:  [Surface Area of a Cube](http://www.onlinemathlearning.com/surface-area-cube.html)  [Surface Area of a Prism](http://www.onlinemathlearning.com/prism-surface-area.html)  [Surface Area of a Cylinder](http://www.onlinemathlearning.com/surface-area-cylinder.html)  [TI-84 Activity – Surface Area](http://education.ti.com/en/us/activity/detail?id=CCCFF2775BE440D6BA02EACE4B9B9344) |
| Explain volume and surface area formulas and use them to solve problems  G.GMD.A.1   * Give an informal argument for the formulas for the circumference of a circle and the volume and surface area of a cylinder, cone, prism, and pyramid.   G.GMD.A.2   * Know and use volume and surface area formulas for cylinders, pyramids, cones, and spheres to solve problems. | *Scope & Clarifications*   * G.GMD.A.1 – Informal arguments may include but are not limited to using the dissection argument, applying Cavalieri’s principle, and constructing informal limit arguments.   *Learning Outcomes*   * Give an informal argument for the formulas for the surface area of a pyramid and cone. * Know and use the surface area formulas for pyramids and cones. | Lesson 12-3 – Surface Area of Pyramids and Cones  [Surface Area Formulas](http://www.math.com/tables/geometry/surfareas.htm)  [Interactives – Surface Area](http://www.learner.org/interactives/geometry/area_surface.html)  On Line Math Learning:  [Surface Area of a Pyramid](http://www.onlinemathlearning.com/surface-area-pyramid.html)  [Surface Area of a Cone](http://www.onlinemathlearning.com/surface-area-cone.html) |
| Explain volume and surface area formulas and use them to solve problems  G.GMD.A.1   * Give an informal argument for the formulas for the circumference of a circle and the volume and surface area of a cylinder, cone, prism, and pyramid.   G.GMD.A.2   * Know and use volume and surface area formulas for cylinders, pyramids, cones, and spheres to solve problems. | *Scope & Clarifications*   * G.GMD.A.1 – Informal arguments may include but are not limited to using the dissection argument, applying Cavalieri’s principle, and constructing informal limit arguments.   *Learning Outcomes*   * Give an informal argument for the formulas for the volume of cylinders and prisms. * Know and use volume formulas for cylinders and prisms. | Lesson 12-4 – Volumes of Prisms and Cylinders  On Line Math Learning:  [Volume of a Cube](http://www.onlinemathlearning.com/volume-of-a-cube)  [Volume of a Prism](http://www.onlinemathlearning.com/volume-prism.html)  [Volume of a Cylinder](http://www.onlinemathlearning.com/volume-of-a-cylinder.html) |
| Explain volume and surface area formulas and use them to solve problems  G.GMD.A.1   * Give an informal argument for the formulas for the circumference of a circle and the volume and surface area of a cylinder, cone, prism, and pyramid.   G.GMD.A.2   * Know and use volume and surface area formulas for cylinders, pyramids, cones, and spheres to solve problems. | *Scope & Clarifications*   * G.GMD.A.1 – Informal arguments may include but are not limited to using the dissection argument, applying Cavalieri’s principle, and constructing informal limit arguments.   *Learning Outcomes*   * Give an informal argument for the formulas for the volume of pyramids and cones. * Know and use volume formulas for pyramids and cones. | Lesson 12-5 – Volumes of Pyramids and Cones  [Interactives - Volume](http://www.learner.org/interactives/geometry/area_volume.html)  [Applet for Surface Area & Volume](http://www.shodor.org/interactivate/activities/SurfaceAreaAndVolume/?version=1.5.0_13&browser=Mozilla&vendor=Apple_Computer,_Inc)  [Word Problems](http://www.mathta.com/?content=geometryWordProblems)  On Line Math Learning:  [Volume of a Pyramid](http://www.onlinemathlearning.com/volume-of-a-pyramid.html)  [Volume of a Cone](http://www.onlinemathlearning.com/volume-cone.html) |
| Explain volume and surface area formulas and use them to solve problems  G.GMD.A.2   * Know and use volume and surface area formulas for cylinders, pyramids, cones, and spheres to solve problems. | *Scope & Clarifications*   * There are no assessment limits for this standard. The entire standard is assessed in this course.   *Learning Outcomes*   * Know and use volume formulas for spheres. | Lesson 12-6 – Surface Areas and Volumes of Spheres  On Line Math Learning:  [Surface Area of a Sphere](http://www.onlinemathlearning.com/surface-area-sphere-2.html)  [Volume of a Sphere](http://www.onlinemathlearning.com/volume-of-a-sphere.html) |
| \*Optional Section | Optional Section (Time not accounted for in curriculum guide) | Lesson 12-7 – Spherical Geometry |
| Apply geometric concepts in modeling situations  G.MG.A.1   * Use geometric shapes, their measures, and their properties to describe objects. | *Scope & Clarifications*   * For example, model a tree trunk or a human torso as a cylinder.   *Learning Outcomes*   * Identify congruent or similar solids. * Use properties of similar solids. | Lesson 12-8 – Congruent and Similar Solids  [NCTM Lesson – Scaling Away](http://illuminations.nctm.org/LessonDetail.aspx?ID=L584) |
| **Chapter 13 – Probability and Measurement**  ***Optional Chapter - Time not accounted for in curriculum guide***  ***The Statistics Conceptual Category is not part of the TNReady Content Framework for Geometry*** | | |

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| **RESOURCE TOOLBOX:**  **FORMATIVE ASSESSMENT**  Compass Learning Odyssey:<https://www.thelearningodyssey.com/>  Discovery Education:<http://www.discoveryeducation.com/>  **GLENCOE TOOLS**  [ConnectED Site - Textbook and Resources](http://connected.mcgraw-hill.com/connected/login.do)  [Glencoe Video Lessons](http://glencoe.mcgraw-hill.com/sites/0078884845/sitemap.html?resource=personaltutor)  [Hotmath - solutions to odd problems](http://hotmath.com/help/bookindexes/cumminsgtn12/)  **Comprehensive Geometry Help:**  [http://www.onlinemathlearninG.com/geometry-help.html](http://www.onlinemathlearning.com/geometry-help.html)  <http://illuminations.nctm.org/>  [I Love Math - Geometry](http://www.ilovemath.org/index.php?option=com_docman&task=cat_view&gid=27)  <http://jc-schools.net/dynamic/math/math11.html>  <https://njctl.org/courses/math/geometry/>  **Geometry Test Prep:**  [USA Test Prep](http://usatestprep.com/Member-Login)  [Regents Exam Prep Center](http://www.regentsprep.org/regents/math/geometry/math-GEOMETRY.htm#m1)  <http://cuacs8.mck.ncsu.edu/mathsampleitems/main.html>  **ACT Test Prep**: <http://www.actstudent.org/testprep/>  **GEOMETRY UNITS WITH EXAMPLES** <http://teachers.henrico.k12.va.us/math/igo/>  <http://caccssm.cmpso.org/geometry-task-force/geometry-resources>  <http://mdk12.org/instruction/curriculum/mathematics/index.html>  **VIDEOS**  <https://www.khanacademy.org/math/geometry>  <http://www.teachertube.com/>  [http://www.mathtv.com/videos\_by\_topic#](http://www.mathtv.com/videos_by_topic)  [The Teaching Channel](https://www.teachingchannel.org/)  **TECHNOLOGY-GRAPHING CALCULATORS:**  <http://www.ti-mathnspired.com>  <http://education.ti.com/educationportal/activityexchange/activity>  <http://www.casioeducation.com/educators>  <http://www.stemresources.com/>  <http://www.ilovemath.org/index.php?option=com_docman>  <http://mathbits.com/MathBits/TISection/Openpage.htm> | **ADDITIONAL TASK RESOURCES:**  [Mathematics Assessment Project](http://map.mathshell.org/materials/tasks.php?taskid=265&subpage=apprentice)  [The Charles A Dana Center](http://www.utdanacenter.org/k12mathbenchmarks/tasks/tasks.php)  [NYC Dept of Education - Units with Tasks](http://schools.nyc.gov/Academics/CommonCoreLibrary/TasksUnitsStudentWork/default.htm)  [Georgia Dept of Education - Units with Tasks](https://www.georgiastandards.org/Common-Core/Pages/Math-9-12.aspx)  **\*Graphing Calculator Note:** [TI tutorials](http://movies.atomiclearning.com/k12/search?p=25&lang=en*&q=TI+84&submit=Go%21) are available through **Atomic Learning** and also at the following link: [Math Bits - graphing calculator steps](http://mathbits.com/MathBits/TISection/Openpage.htm)  Some activities require calculator programs and/or applications. Use the following link to access **FREE software for your MAC**. This will enable your computer and TI Calculator to communicate**:** [Free TI calculator downloads](http://education.ti.com/educationportal/downloadcenter/SoftwareDetail.do?website=US&tabId=1&appId=286)  SOFTWARE  [GeoGebra](http://www.geogebra.org/cms/en/) – Free software for dynamic math and science learning  [NCTM Math Tools](http://www.nctm.org/resources/content.aspx?id=32702)  <http://www.keycurriculum.com/products/sketchpad> (Not free)  Any activity using Geometer’s Sketchpad can also be done with any software that allows construction of figures and measurement, such as Cabri, Cabri Jr. on the TI-83 or 84 Plus, TI-92 Plus, or TI-Nspire. |