Curriculum Coverage in 7th Grade Mathematics for the 2018-2019 School Year as Outlined by TN Standards.

TN Standards Major Work of the Grade:

* Operations with fractions
* Proportional Relationships
* Equivalent Expressions from properties
* Contextual problems involving equations and inequalities

Supporting:

* Geometrical figures
* Angle measure, area, surface area, volume
* Random sampling
* Compare two populations
* Probability
* Data Sets

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

|  |  |  |  |
| --- | --- | --- | --- |
| **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.** |

**3rd Nine Weeks**

|  |  |  |  |
| --- | --- | --- | --- |
| **Geometry**  **(Allow 3 - 4 weeks for instruction, review, and assessment)** | | | |
| **TN Standards** | **Learning Outcomes** | **Instructional Focus** | **Content** |
| 7.G.A.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.  -----------------------------------------------  7.G.A.2 Draw geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.  7.G.B.3 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.  **“Know the formula” does not mean memorization of the formula. To “know” means to have an understanding of**  **why the formula works and how the formula relates to the measure (area and circumference) and the figure. This**  **understanding should be for all students.**  **--------------------------------------------------------**  7.G.B.4 Know and use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in the figure.  7.G.B.5 Solve real-world and mathematical problems involving area, volume, and surface area of two- and three- dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. | I can……………….  Solve proportions involving scale drawings.  Compute actual lengths and areas from a scale drawing  Reproduce a scale drawing at a different scale.  -----------------------------------------------------  I can………………  Draw geometric shapes within given parameters which may include: parallel lines, angles, perpendicular lines, line segments, etc.  I can……  Determine the parts of a circle including radius, diameter, area, circumference, center and chord  Recognize the formulas for area and circumference of a circle  Determine the formulas for area and circumference of a circle, find its area  Find its circumference, given the area of a circle  Justify that π can be derived from the circumference and diameter of a circle  Apply the circumference or area formulas to solve mathematical and real-world problems  Justify the formulas for area and circumference of a circle and how they relate to π  Informally derive the relationship between circumference and area of a circle  **-----------------------------------------------------**  I can……  Identify supplementary, complementary, vertical, and adjacent angles on a figure.  Use understandings of angles to write and solve equations used to find the missing measure based on the angle relationships.  Calculate the area of 2-dimensional figures such as rectangles and triangles.  Explain how to use the area of each face on a 3-dimensional figure to find the surface area.  Determine how to find the volume of a 3-dimensional figure as multiplying the area of the base times the height of the figure.  Determine the dimension of a figure given the area or volume. | **Instructional Focus:**  Students should employ their understanding of proportionality in order to demonstrate their conceptual understanding of the connections that exist between measurements in real- world problems and those in their scale drawings. Students should also be able to redraw scale drawings using different scales and explain their reasoning using precise mathematical language when presenting solutions to real-world problems. Students will extend this concept in future grades when working with proportional relationships with similar triangles and figures. | **GO Math Lesson:**  Lesson 8.1 Similar Shapes and Scale Drawings (p. 237)  **Engage NY Task:**  [Module 4, Topic C, Scale Drawings](https://www.engageny.org/resource/grade-7-mathematics-module-4)  [Module 1, Topic D](https://www.engageny.org/resource/grade-7-mathematics-module-1)  [Ratios of Scale Drawings](https://www.engageny.org/resource/grade-7-mathematics-module-1)    .  **GO Math Lesson:**  Lesson 8.2 Geometric Drawings  (p. 237)  Lesson 8.3 Cross Sections (p.247)  **Engage NY Task:**  [Module 6 Topic B and Topic C](https://www.engageny.org/resource/grade-7-mathematics-module-6)  [Constructing Triangles](https://www.engageny.org/resource/grade-7-mathematics-module-6)  [Slicing Solids](https://www.engageny.org/resource/grade-7-mathematics-module-6)  **GO Math Lesson:**  Lesson 8.4 Angle Relationships (p.251)  Lesson 9.1 Circumference (p. 265)  Lesson 9.2 Area of Circles (p.271)  Lesson 9.3 Area of Composite Figures (p.277)  Lesson 9.4 Solving Surface Area Problems (p. 283)  Lesson 9.4 Solving Volume Problems (p. 289)  **Engage NY Task**:  [Module 6 Topic A, Topic D, Topic E](https://www.engageny.org/resource/grade-7-mathematics-module-6)  [Unknown Angles](https://www.engageny.org/resource/grade-7-mathematics-module-6)  [Problems Involving Area and Surface Area](https://www.engageny.org/resource/grade-7-mathematics-module-6)  [Problems Involving Volume](https://www.engageny.org/resource/grade-7-mathematics-module-6)  [Module 3 Topic C](https://www.engageny.org/resource/grade-7-mathematics-module-3)  [Use Equations and Inequalities to Solve Geometry Problems](https://www.engageny.org/resource/grade-7-mathematics-module-3) |
| **Statistics**  **(Allow 3 weeks for instruction, review, and assessment)** | | | |
| 7.SP.A.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.  7.SP.A.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.  -----------------------------------------------------  7.SP.B.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.  -----------------------------------------------------  7.SP.B.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. | I can…………  Apply statistics terms such as population, sample, sample size, random sampling, generalizations, valid, biased and unbiased  Recognize sampling techniques such as convenience, random, systematic and voluntary  Recognize that generalizations about a population from a sample are valid only if the sample is representative of that population  Apply statistics to gain information about a population from a sample of the population  Generalize that random sampling tends to produce representative samples and support valid inferences  Macintosh HD:Users:dlindsey:Desktop:Screen Shot 2015-06-12 at 4.04.31 PM.png  *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on random sampling survey data. Gauge how far off the estimate or prediction might be.*  Define random sample  Identify an appropriate sample size  Analyze and interpret data from a random sample to draw inferences about a population with an unknown characteristic of interest  Generate multiple samples (or simulated samples) of the same size to determine the variation in estimates or predictions by comparing and contrasting the samples  -----------------------------------------------------  dentify measures of central tendency (mean, median, and mode) in a data distribution  Identify measures of variation including upper quartile, lower quartile, upper extreme-maximum, lower extreme minimum, range, interquartile range, and mean absolute deviation (i.e. box-and-whisker plots, line plot, dot plots, etc.)  Compare two numerical data distributions on a graph by visually comparing data displays, and assessing the degree of visual overlap  Compare the differences in the measure of central tendency in two numerical data distributions by measuring the difference between the centers and expressing it as a multiple of a measure of variability  EX: *the mean height of players on the basketball team is 10cm greater than the mean height of players on the soccer team; on a dot plot or box plot, the separation between the two distributions of heights is noticeable.*  -----------------------------------------------------  I can find measures of central tendency (mean, median, and mode) and measures of variability (range, quartile, etc.)  Analyze and interpret data using measures of central tendency and variability  Draw informal comparative inferences about two populations from random sample  EX. *Decide whether the words in a chapter of a 7th grade science book are generally longer than the words in a chapter of a 4th grade science book*. |  | **GO Math Lesson:**  Lesson 10.1 Populations and Samples (p. 311)  Lesson 10.2 Making Inferences from a Random Sample (p. 317)  Lesson 10.3 Generating Random Samples (p. 323)  **Engage NY Task:**  [Module 5, Topic C](https://www.engageny.org/resource/grade-7-mathematics-module-5)  [Random Sampling and Estimated Population Characteristics](https://www.engageny.org/resource/grade-7-mathematics-module-5)  **GO Math Lesson:**  Lesson 11.1 Comparing Data Displayed in Dot Plots  (p. 335)  Lesson 11.2 Comparing Data Displayed in Box Plots (p. 341)  Lesson 11.3 Using Statistical Measures to Compare Populations (p. 347)  **Engage NY Task:**  [Module 5 Topic D](https://www.engageny.org/resource/grade-7-mathematics-module-5)  [Comparing Populations](https://www.engageny.org/resource/grade-7-mathematics-module-5) |

|  |
| --- |
| **Resource Toolbox:**  <http://www.kutasoftware.com/free.html>  <http://illuminations.nctm.org/>  <http://cuacs8.mck.ncsu.edu/mathsampleitems/main.html>  <http://www.ilovemath.org/index.php?option=com_docman>  <http://www.math-aids.com>  <http://www.commoncoresheets.com>  <http://www.mathworksheetsland.com> |