



Curriculum and Instruction – Office of Mathematics

Statistics 1st Nine Weeks

Introduction

In 2014, the Shelby County Schools Board of Education adopted a set of ambitious, yet attainable goals for school and student performance. The District is committed to these goals, as further described in our strategic plan, Destination2025. **By 2025,**

- **80% of our students will graduate from high school college or career ready**
- **90% of students will graduate on time**
- **100% of our students who graduate college or career ready will enroll in a post-secondary opportunity**

In order to achieve these ambitious goals, we must collectively work to provide our students with high-quality, College and Career Ready standards-aligned instruction. Acknowledging the need to develop competence in literacy and language as the foundation for all learning, Shelby County Schools developed the Comprehensive Literacy Improvement Plan (CLIP). The CLIP ensures a quality balanced literacy approach to instruction that results in high levels of literacy learning for all students across content areas. Destination 2025 and the CLIP establish common goals and expectations for student learning across schools. CLIP connections are evident throughout the mathematics curriculum maps.

The Tennessee State Standards provide a common set of expectations for what students will know and be able to do at the end of a grade. College and Career Ready Standards are rooted in the knowledge and skills students need to succeed in post-secondary study or careers. While the academic standards establish desired learning outcomes, the curriculum provides instructional planning designed to help students reach these outcomes. Educators will use this guide and the standards as a roadmap for curriculum and instruction. The sequence of learning is strategically positioned so that necessary foundational skills are spiraled in order to facilitate student mastery of the standards.

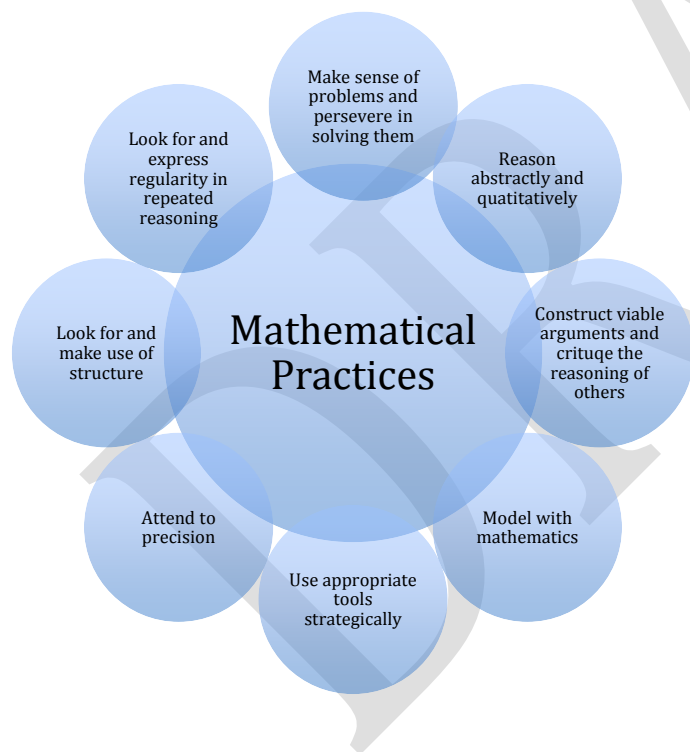
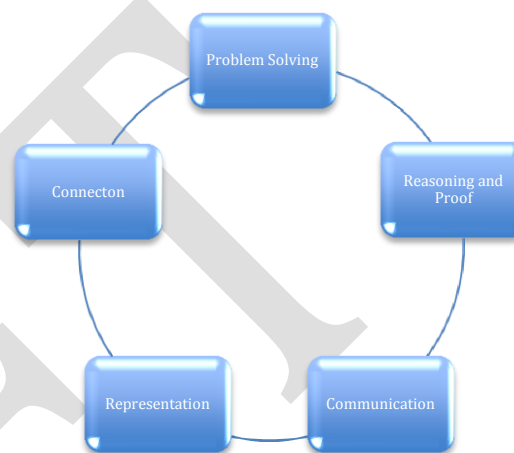
These standards emphasize thinking, problem-solving and creativity through next generation assessments that go beyond multiple-choice tests to increase college and career readiness among Tennessee students. In addition, assessment blueprints (<http://www.tn.gov/education/article/tnready-blueprints>) have been designed to show educators a summary of what will be assessed in each grade, including the approximate number of items that will address each standard. Blueprints also detail which standards will be assessed on Part I of TNReady and which will be assessed on Part II.



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Our collective goal is to ensure our students graduate ready for college and career. 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 and sensible, useful and worthwhile, coupled with a belief in diligence and one’s own efficacy). Throughout the year, students should continue to develop proficiency with the eight Standards for Mathematical Practice.



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How to Use the Mathematic Curriculum Maps

This curriculum map is designed to help teachers make effective decisions about what mathematical content to teach so that ultimately our students can reach Destination 2025. To reach our collective student achievement goals, we know that teachers must change their instructional practice in alignment with the three College and Career Ready shifts in instruction for Mathematics. We should see these shifts in all classrooms:

- 1) **Focus**
- 2) **Coherence**
- 3) **Rigor**

Throughout this curriculum map, you will see resources as well as links to tasks that will support you in ensuring that students are able to reach the demands of the standards in your classroom. In addition to the resources embedded in the map, there are some high-leverage

The TNCore Mathematics Standards	
The Tennessee Mathematics Standards: https://www.tn.gov/education/article/mathematics-standards	Teachers can access the Tennessee State standards, which are featured throughout this curriculum map and represent college and career ready learning at reach respective grade level.
Mathematical Shifts	
Focus http://achievethecore.org/shifts-mathematics	The standards are focused on fewer topics so students can learn more
Coherence http://achievethecore.org/shifts-mathematics	Topics within a grade are connected to support focus, and learning is built on understandings from previous grades
Rigor http://achievethecore.org/shifts-mathematics	The standards set expectations for a balanced approach to pursuing conceptual understanding, procedural fluency, and application and modeling

resources around each of the three shifts that teachers should consistently access:



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Curriculum Maps:

- Locate the TDOE Standards in the left column. Analyze the language of the standards and match each standard to a learning target in the second column.
- Consult your *Elementary Statistics: A Step by Step Approach, 7th edition by Bluman* Teachers' Edition (TE) and other cited references to map out your week(s) of instruction.
- Plan your weekly and daily objectives, using the standards' explanations provided in the second column. Best practices tell us that making objectives measurable increases student mastery.
- Carefully review the web-based resources provided in the 'Content and Tasks' column and use them as you introduce or assess a particular standard or set of standards.
- Review the CLIP Connections found in the right column. Make plans to address the content vocabulary, utilizing the suggested literacy strategies, in your instruction.
- Examine the other standards and skills you will need to address in order to ensure mastery of the indicated standard.
- Using your TE and other resources cited in the curriculum map, plan your week using the SCS lesson plan template. Remember to include differentiated activities for small-group instruction and math stations.



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TN State Standards	Essential Understandings	Content & Tasks	CLIP Connections
Chapter 1 (2 weeks for instruction, review, and assessment)			
S-IC.A.1 Understand statistics as a process for making inferences about population parameters based on a random sample from that population. S-ID	1-1 Descriptive and Inferential Statistics Demonstrate knowledge of statistical terms.	Elementary Statistics Textbook Elementary Statistics PowerPoint for Chapter 1 Video: Against All Odds Video Unit 1 What is Statistics?	<i>Statistics Today</i> <i>Critical Thinking Challenges</i> <i>Speaking of Statistics</i> <i>Applying the Concepts</i> <i>Extending the Concepts</i> <i>Data Projects</i>
S-ID.A.1 Summarize, represent, and interpret data on a single count or measurement variable S-ID	1-2 Variables and Types of Data Identify the measurement level for each variable.	Elementary Statistics Textbook Elementary Statistics PowerPoint for Chapter 1	
S-IC.B.3 Recognize the purposes of and differences among sample surveys, experiments, and observational studies. S-IC	1-3 Data Collection and Sampling Techniques Demonstrate knowledge of the four basic sampling methods.	Elementary Statistics Textbook Elementary Statistics PowerPoint for Chapter 1	
S-IC.B.3 Recognize the purposes of and differences among sample surveys, experiments, and observational studies. S-IC	1-4 Observational and Experimental Studies <ul style="list-style-type: none"> • Explain the difference between an observational study and an experimental study. • Describe the role of randomization in surveys and experiments. • Recognize faulty questions on a survey and other factors that can bias responses. • Know the characteristics of well-designed 	Elementary Statistics Textbook Elementary Statistics PowerPoint for Chapter 1	

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[TN Statistics Standards](#)



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	studies. 1-5 Uses and Misuses of Statistics		
Chapter 2 (3 weeks for instruction, review, and assessment)			
S-ID.A.1 Represent data with plots. S-ID	2-1 Organizing Data Organize univariate data using a frequency distribution.	Elementary Statistics A Step by Step Approach Textbook 7 th edition by Bluman Elementary Statistics PowerPoint Chapter 2	Statistics Today Critical Thinking Challenges Speaking of Statistics Applying the Concepts Extending the Concepts Data Projects
S-ID.A.1 Represent data with plots. S-ID	2-3 Bar Graphs, Pareto Charts, Pie Graphs, and Time Series Graphs Represent Data using bar graphs, Pareto charts, time series graphs, and pie graphs.	Elementary Statistics A Step by Step Approach Textbook 7 th edition by Bluman Elementary Statistics PowerPoint Chapter 2 Q1_statsactivity_M&Ms1	
S-ID.A.1 Represent data with plots. S-ID	2-2 Histograms, Frequency Polygons, and Orgives Represent quantitative data graphically using histograms, dot plots, and orgives.	Elementary Statistics A Step by Step Approach Textbook 7 th edition by Bluman Elementary Statistics PowerPoint Chapter 2 Prudential Commerical Q1_statsactivity_MatchingDisplays2	
S-ID.A.1 Represent data with plots. S-ID	2-4 Draw and interpret a stem and leaf plot.	Elementary Statistics A Step by Step Approach Textbook 7 th edition by Bluman Elementary Statistics PowerPoint Chapter 2	

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[TN Statistics Standards](#)



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		Q1_statsactivity_PresidentsAges	
Chapter 3 (4 weeks for instruction, review, and assessment)			
S-IC.A.1 Understand statistics as a process for making inferences about population parameters based on a random sample from that population. S-ID	3-1 Measures of Center Use a variety of numerical techniques to describe the central tendency of a distribution. These should include mean, median, mode, and midrange.	Elementary Statistics A Step by Step Approach Textbook 7 th edition by Bluman Elementary Statistics PowerPoint Chapter 3 Q1_statsactivity_MatchingDisplays3	Statistics Today Critical Thinking Challenges Speaking of Statistics Applying the Concepts Extending the Concepts Data Projects
S-ID.A.1 Summarize, represent, and interpret data on a single count or measurement variable S-ID	3-2 Measures of Variation Use a variety of numerical techniques to describe the variation in a distribution. These should include variance, standard deviation, and range.	Elementary Statistics A Step by Step Approach Textbook 7 th edition by Bluman Elementary Statistics PowerPoint Chapter 3 Q1_stattask_M&Ms2	
S-IC.B.3 Recognize the purposes of and differences among sample surveys, experiments, and observational studies. S-IC	3-3 Measures of Position <ul style="list-style-type: none"> Identify the position of a data set using various measures of position. These should include z-scores, percentiles, and interquartile range. Interpret graphical displays in terms of shape, center, and spread of the distribution, as well as gaps and outliers.	Elementary Statistics A Step by Step Approach Textbook 7 th edition by Bluman Elementary Statistics PowerPoint Chapter 3 Q1_stattask_YankeevsMets Q1_stattask_M&Ms3	
S-IC.B.3 Recognize the purposes of and differences among sample surveys,	3-4 Exploratory Data Analysis <ul style="list-style-type: none"> Use the techniques of exploratory data 	Elementary Statistics A Step by Step Approach Textbook 7 th edition by Bluman	

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TN State Standards	Essential Understandings	Content & Tasks	CLIP Connections
experiments, and observational studies. S-IC	analysis, including boxplots and five-number summaries, to discover various aspects of data.	Elementary Statistics PowerPoint Chapter 3 Q1_statsactivity_MatchingDisplays1 Q1_statsactivity_MatchingDisplays4 Q1_stattask_HumanBoxPlot	

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RESOURCE TOOLBOX		
<p>Textbook Resources Elementary Statistics 7th edition Bluman</p>	<p>Standards Common Core Standards - Mathematics Common Core Standards - Mathematics Appendix A State Academic Standards (Statistics) TN Core The Mathematics Common Core Toolbox Link to common core glossary Tennessee's State Mathematics Standards</p>	<p>Videos Against All Odds Video Unit 1 Khan Academy Prudential Commercial</p>
<p>Calculator Texas Instruments Education http://www.casioeducation.com/educators</p>	<p>Interactive Manipulatives Stat Trek AmStat.org Applet Collection</p>	<p>Additional Sites The Data and Story Library Fed Stats Bureau of Labor Statistics Educational Statistics NCTM Math Illuminations United States Census Bureau Core Math Tools Statistics Education Web</p>
<p>CLIP Literacy Skills and Strategies for Content Area Teachers (Math, p. 22) Glencoe Reading & Writing in the Mathematics Classroom Graphic Organizers (9-12)</p>		

Subject to revision

[TN Statistics Standards](#)