Introduction

Curriculum Overview

Congratulations on choosing an outstanding kindergarten curriculum! Using this curriculum, you and your student will be engaged in problem-solving, learning new mathematical concepts, practicing skills, and reading literature to reinforce mathematical concepts. One of the advantages in selecting Texas Tech University K-12 curriculum is that you will have an all-encompassing curriculum similar to what you would find in some of the most outstanding teacher's classrooms in our nation.

This course is completed entirely online in Blackboard. Use the PDF **Unit Lessons** documents and the digital textbook at **ThinkCentral** (www-k6.thinkcentral.com) for most of your classwork. Information on logging into and navigating this website is available in the **Online Resources** section of this Introduction.

View the slideshows for each day's lesson in the **Units** section, **Daily Slideshows and Worksheets** folder of this course. Slideshow notes and worksheets are provided as PDFs to download and print.

Slideshows may be viewed in the browser or downloaded for editing in Microsoft PowerPoint.

For each Unit assessment, the student will complete the assigned textbook pages, then scan or take a digital photograph of the completed pages showing his or her work. Combine the images into a single PDF (see **Requirements for Creating PDFs** on the course home page) and upload the file for grading as instructed in the assignment.

Kindergarten Mathematics

Math is a hands-on subject that builds on itself with each new lesson. It is imperative that you plan ahead and have all manipulatives and other material ready for each lesson.

Before beginning the curriculum, please take a few minutes and look through the digital textbook, ***Texas Go Math!*** Your student will use this text for all assignments and independent practice. If you also purchased the print version, you will notice that the text is consumable. This means your student may do his or her work in the book.

Because we apply math in our everyday life, the textbook provides real world math applications in the form of tear-out books, **Vocabulary Reader** activities, fun extra practice lessons, and games that you and your student can play together to reinforce math concepts in unique ways. The technology activities on the textbook publisher's website offer a different but fun approach to learning math skills. You will find these activities at www-k6.thinkcentral.com. Although the

activities, practices, games, and books may not all be assigned in the curriculum, please feel free to include them when time permits.

About This Course

Semester B of this course covers textbook Modules 6-12. In this semester, your student will be introduced to kindergarten math concepts through methods which have been proven highly effective for learning in multiple settings.

In Unit 4, your student will learn to show one more and one less and add sums up to 10. The student will learn about adding doubles. He or she will learn how to show the difference up to 10. The student will also learn about the penny, nickel, dime, and quarter. Problem solving will continue in each week's lessons, with an emphasis on acting the problem out.

In Unit 5, your student will learn to count to 100 by ones and tens. The student will learn to start at a given number and count on. He or she will identify two-dimensional shapes such as circles, triangles, rectangles, and squares. Problem solving will continue in each week's lessons, with an emphasis on counting on from a given number and creating shapes.

In Unit 6, your student will learn to identify and describe three-dimensional shapes such as cylinder, cube, cone, and sphere using math language. The student will find three-dimensional shapes in everyday surroundings. He or she will measure objects and compare objects by length, height, and weight. Collecting data and creating graphs will be presented. Students will also sort objects by multiple categories such as color, size, and shape. Financial literacy education will be introduced, along with learning the difference between earned money and money received as a gift. Wants and needs will be discussed, as well as the important difference between the two.

Linking literature with math is significant in helping your student make connections. A selection of suggested books to read to your student is provided in the materials list for each unit and in this Introduction. You may use these books or find other math-related books to read to your student.

Read to your student every day. Counting everyday objects in your home such as eating utensils, towels, chairs, people, and objects in the real world will help your student, as well. Help students find shapes in everyday life—for example, a hanger is made from a triangle, a door and bed are rectangles, a plate may be a circle, and a canned drink or food could be a cylinder.

The scripted lessons and user-friendly techniques of this curriculum will provide the instructor and student with step-by-step learning, daily reviews, and cumulative assessments. New skills build on those previously learned and ensure that the student will master each skill before moving ahead to new ones. This method will help instill confidence, a willingness to learn, and success for the student.

Course Objectives

The mathematics curriculum covers all of the Texas Essential Knowledge and Skills (TEKS) for kindergarten. At the end of this course, the student should be able to master the following:

1. **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
   A. apply mathematics to problems arising in everyday life, society, and the workplace;
   B. use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;
   C. select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;
   D. communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
   E. create and use representations to organize, record, and communicate mathematical ideas;
   F. analyze mathematical relationships to connect and communicate mathematical ideas; and
   G. display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

2. **Number and operations.** The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system. The student is expected to:
   A. count forward and backward to at least 20 with and without objects;
   B. read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures;
   C. count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in the set regardless of their arrangement or order;
   F. generate a number that is one more than or one less than another number up to at least 20;
   G. compare sets of objects up to at least 20 in each set using comparative language;

3. **Number and operations.** The student applies mathematical process standards to develop an understanding of addition and subtraction situations in order to solve problems. The student is expected to:
   A. model the action of joining to represent addition and the action of separating to represent subtraction;
   B. solve word problems using objects and drawings to find sums up to 10 and differences within 10; and
   C. explain the strategies used to solve problems involving adding and subtracting within 10 using spoken words, concrete and pictorial models, and number sentences.

4. **Number and operations.** The student applies mathematical process standards to identify coins in order to recognize the need for monetary transactions. The student is expected to identify U.S. coins by name, including pennies, nickels, dimes, and quarters.

5. **Algebraic reasoning.** The student applies mathematical process standards to identify the pattern in the number word list. The student is expected to recite numbers up to at least 100 by ones and tens beginning with any given number.

6. **Geometry and measurement.** The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:
   A. identify two-dimensional shapes, including circles, triangles, rectangles, and squares as special rectangles;
   B. identify three-dimensional solids, including cylinders, cones, spheres, and cubes, in the real world;
   C. identify two-dimensional components of three-dimensional objects;
   D. identify attributes of two-dimensional shapes using informal and formal geometric language interchangeably;
   E. classify and sort a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size; and
   F. create two-dimensional shapes using a variety of materials and drawings.

7. **Geometry and measurement.** The student applies mathematical process standards to directly compare measurable attributes. The student is expected to:
   A. give an example of a measurable attribute of a given object, including length, capacity, and weight; and
   B. compare two objects with a common measurable attribute to see which object has more of/less of the attribute and describe the difference.

8. **Data analysis.** The student applies mathematical process standards to collect and organize data to make it useful for interpreting information. The student is expected to:
   A. collect, sort, and organize data into two or three categories;
   B. use data to create real-object and picture graphs; and
   C. draw conclusions from real-object and picture graphs.

9. **Personal financial literacy.** The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:
   A. identify ways to earn income;
   B. differentiate between money received as income and money received as gifts;
   C. list simple skills required for jobs; and

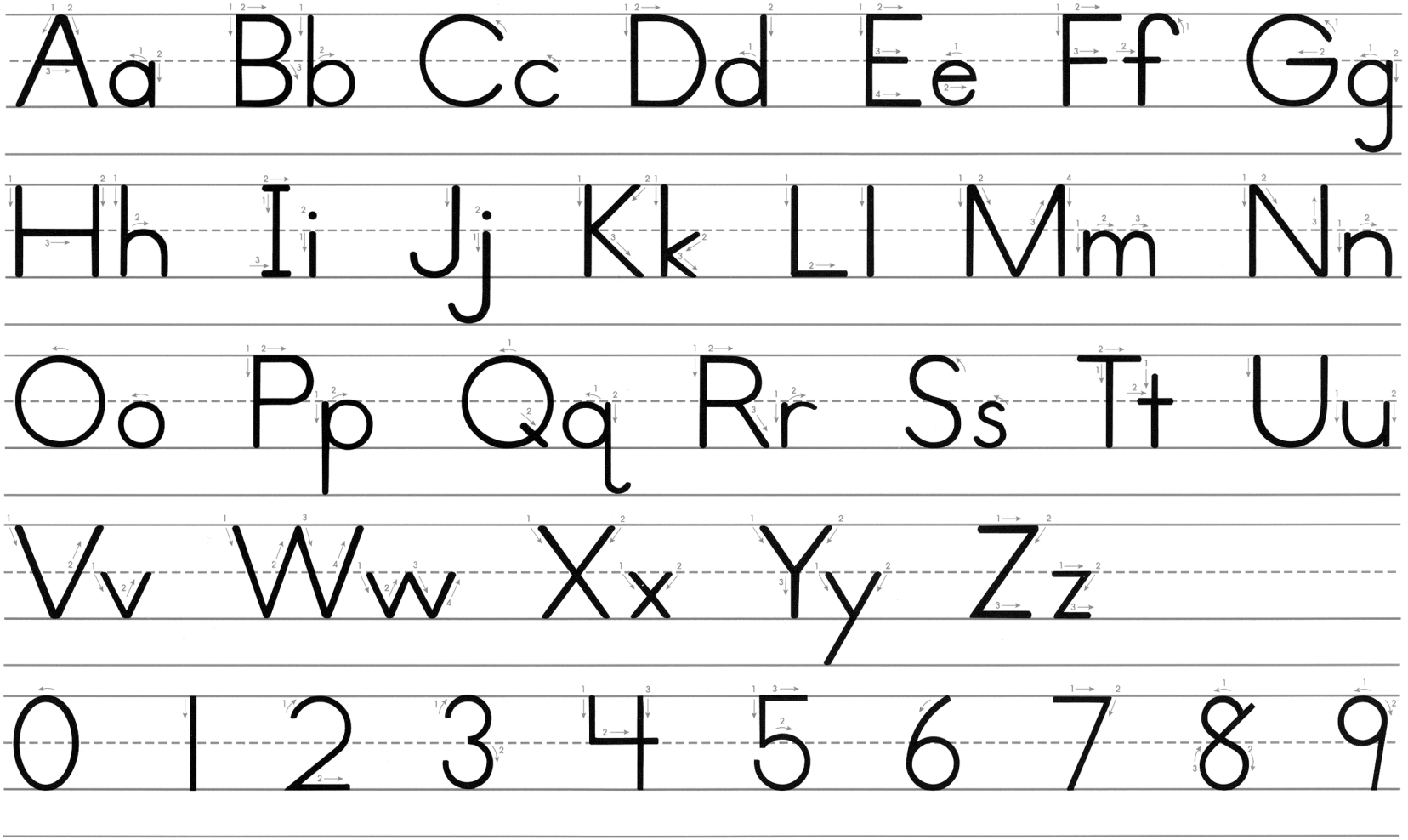
D. distinguish between wants and needs and identify income as a source to meet one's wants and needs.

Source: The provisions of this §111.2 adopted to be effective September 10, 2012, 37 TexReg 7109.

Handwriting

Handwriting is taught in the Language Arts course. However, good handwriting skills are necessary in all subjects including math. In Kindergarten, Grade 1, and Grade 2, manuscript is the preferred technique. When teaching your child handwriting, please consider the appropriate letter and number formation and spacing. Please refer to the manuscript chart included on the next page to assist you in appropriately teaching your child handwriting. Please reinforce the importance of good handwriting in all subject areas.

Traditional Manuscript



Books and Materials for MATH K this Semester

Textbook

You are required to purchase the digital textbook in order to access all lesson materials. Purchase of the print textbook is strongly suggested, as well.

- Digital: *Texas Go Math!* (2015). Houghton Mifflin Harcourt. ISBN 9780544365131 (student edition)
- Print: *Texas Go Math! Volume 2* (2015). Houghton Mifflin Harcourt. ISBN 978-0-544-08678-4

Other Books

Linking math and literature is a wonderful way to introduce math concepts to your student. Although there are no other required books for this semester, it is strongly suggested that your student read or have read to him or her a math-related book daily.

Unit 4

Optional:

- *Alexander, Who Used To Be Rich Last Sunday* by Judith Viorst
- *Domino Addition* by Lynette Long
- *Each Orange Had 8 Slices: A Counting Book* by Paul Giganti, Jr., and Donald Crews
- *Lemonade for Sale* by Stuart Murphy and Tricia Tusa.
- *Math Fables: Lessons That Count* by Greg Tang
- *Measuring Penny* by Loreen Leedy
- *One Is a Snail Ten Is a Crab* by April Pulley Sayre, Jeff Sayre, and Randy Cecil
- *Pizza Party* by Sharon Gordon
- *Quack and Count* by Keith Baker
- *Tally O'Malley* by Stuart Murphy & Cynthia Jabar
- *The Action of Subtraction* by Brain Cleary
- *The Doorbell Rang* by Pat Hutchins.
- *The Mission of Addition* by Brian Cleary
- *The Penny Pot* by Stuart Murphy
- *Zero the Hero* by Joan Holub

Unit 5

Optional:

- *Alexander, Who Used To Be Rich Last Sunday* by Judith Viorst
- *Circus Shapes* by Stuart J. Murphy
- *Domino Addition* by Lynette Long
- *Each Orange Had 8 Slices: A Counting Book* by Paul Giganti, Jr., and Donald Crews
- *Lemonade for Sale* by Stuart Murphy and Tricia Tusa
- *Math Fables: Lessons That Count* by Greg Tang
- *Measuring Penny* by Loreen Leedy
- *National Geographic Little Kids Look and Learn: Shapes!* by National Geographic Kids
- *One Is a Snail Ten Is a Crab* by April Pulley Sayre, Jeff Sayre, and Randy Cecil
- *Pizza Party* by Sharon Gordon
- *Quack and Count* by Keith Baker
- *Round is a Mooncake: A Book of Shapes* by Rosanne Thong
- *Shapes, Shapes, Shapes* by Tana Hoban
- *So Many Circles, So Many Squares* by Tana Hoban
- *Tally O'Malley* by Stuart Murphy & Cynthia Jabar
- *Ten Black Dots* by Donald Crews
- *The Action of Subtraction* by Brain Cleary
- *The Doorbell Rang* by Pat Hutchins.
- *The Greedy Triangle* by Marilyn Burns
- *The Mission of Addition* by Brian Cleary
- *The Penny Pot* by Stuart Murphy
- *The Shape of Things* by Dayle Ann Dodds
- *Zero the Hero* by Joan Holub

Unit 6

Optional:

- *Alexander, Who Used To Be Rich Last Sunday* by Judith Viorst
- *Circus Shapes* by Stuart J. Murphy
- *Cubes, Cones, Cylinders, & Spheres* by Tana Hoban
- *Cylinder (First Step Nonfiction Solid Shapes)* by Jennifer Boothroyd
- *Domino Addition* by Lynette Long
- *Each Orange Had 8 Slices: A Counting Book* by Paul Giganti, Jr., and Donald Crews

- *If the Shoe Fits: Nonstandard Units of Measurement* by Jennifer Dussling
- *Lemonade for Sale* by Stuart Murphy and Tricia Tusa
- *Lemonade in Winter: A Book About Two Kids Counting Money* by Emily Jenkins
- *Length (Math Counts)* by Henry Pluckrose
- *Measuring Penny* by Loreen Leedy
- *Me and the Measure of Things* by Joan Sweeney
- *Measuring Penny* by Loreen Leedy
- *National Geographic Little Kids Look and Learn: Shapes!* by National Geographic Kids
- *One Is a Snail, Ten Is a Crab* by April Pulley Sayre, Jeff Sayre, and Randy Cecil
- *Pigs Will Be Pigs: Fun with Math and Money* by Amy Axelrod
- *Pizza Party* by Sharon Gordon
- *Quack and Count* by Keith Baker
- *Round is a Mooncake: A Book of Shapes* by Rosanne Thong
- *Shapes, Shapes, Shapes* by Tana Hoban
- *Size (Math Counts)* by Henry Arthur Pluckrose
- *So Many Circles, So Many Squares* by Tana Hoban
- *Tally O'Malley* by Stuart Murphy & Cynthia Jabar
- *Ten Black Dots* by Donald Crews
- *The Action of Subtraction* by Brain Cleary
- *The Coin Counting Book* by Rozanne Lanczak Williams
- *The Doorbell Rang* by Pat Hutchins
- *The Great Graph Contest* by Loreen Leedy
- *The Greedy Triangle* by Marilyn Burns
- *The Mission of Addition* by Brian Cleary
- *The Penny Pot* by Stuart Murphy
- *The Shape of Things* by Dayle Ann Dodds
- *Twelve Snails to One Lizard: A Tale of Mischief and Measurement* by Susan Hightower
- *Zero the Hero* by Joan Holub

Manipulatives and Materials

Required:

- attribute blocks
- blindfold
- calendar

- card stock
- cereal pieces
- chenille wires (pipe cleaners)
- circle to trace, small (e.g., small end of a cup)
- coins (pennies, nickels, dimes, and quarters; the nickels and pennies should be both old and new)
- connecting cubes (various amounts to show length and height)
- crackers or pieces of candy, small
- crayons or color markers
- cup, paper, small
- dominoes
- dry erase board and markers
- everyday objects of varying weights
- everyday objects to measure for capacity
- glue
- hand lens
- highlighter
- hundreds, tens, and ones containers from MATH KA
- marshmallows, small, about 20
- masking tape
- math journal from MATH KA, or new composition book (at least 75 pages)
- pancake mix (optional)
- paper, plain white
- pencils
- popsicle sticks
- pretzels, straight, about 20
- printer and paper
- rubber bands
- scissors
- shapes: two-dimensional and three-dimensional
- shoes: 1 adult's, 1 child's
- small snacks, different kinds (10 of each snack): e.g., chocolate pieces, different cereals, crackers, candy
- sticky notes in red, orange, yellow, green, blue, purple, and white; or plain sticky notes colored as appropriate for each temperature range

- straws, 4
- two-color counters
- weather graph from MATH KA, or create new graph on 11” × 17” paper or card stock
- yarn or string, 16” long piece
- zip-close plastic bags, small, 2

Alternative Manipulatives

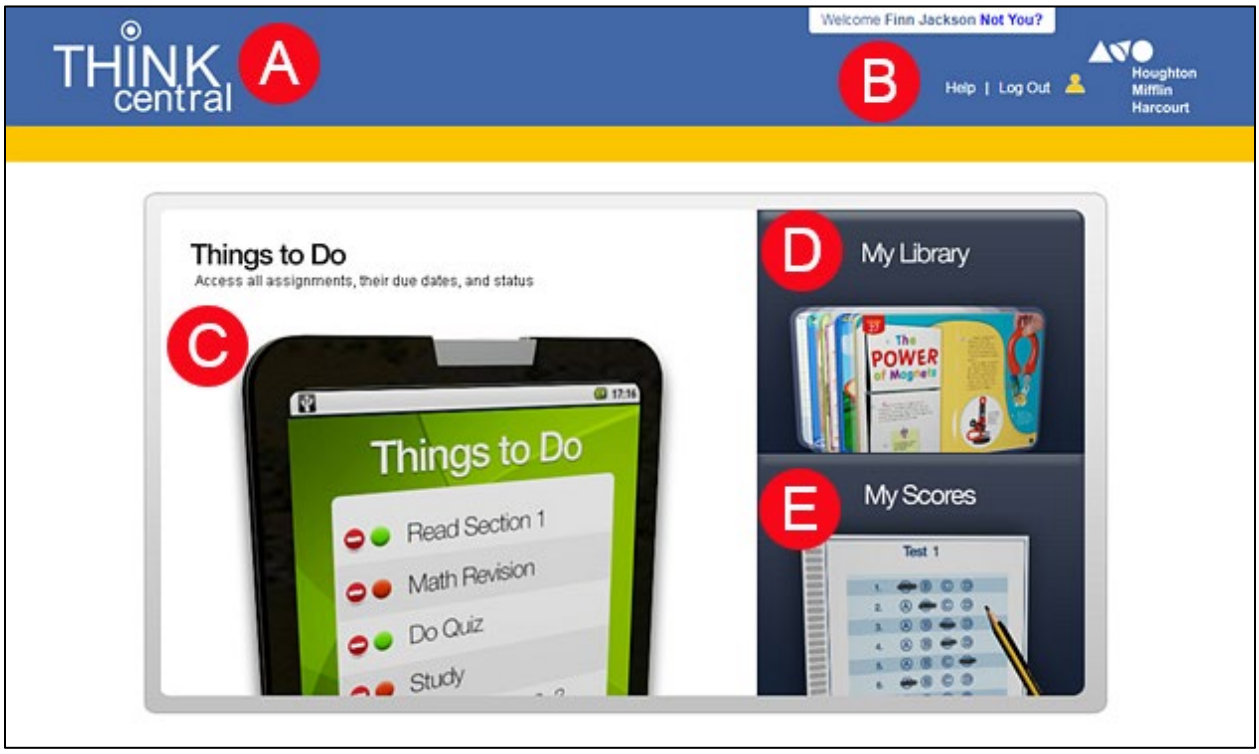
Manipulative:	***Suggested Alternative:***
connecting cubes	paper clips
number cubes	spinner, playing cards
two-colored counters	buttons, coins, beans, small toys, small candies
pattern blocks	construction paper (cut pattern blocks from it)
base-ten blocks	grid paper cut into squares of ones (units), tens, hundreds, etc.

Online Resources

Navigate ThinkCentral

To move around in *ThinkCentral*:

➔ Click one of the areas on the *ThinkCentral* home page to open that page: **Things to Do**, **My Library**, or **My Scores**.

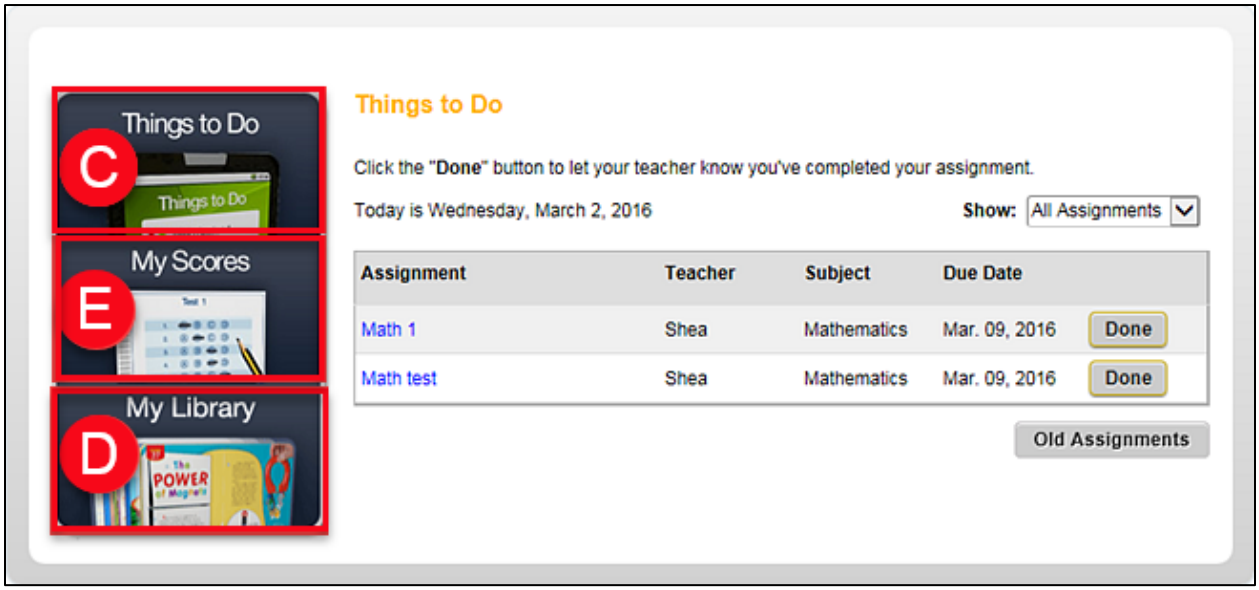


Descriptions of each area is provided in the following table.

Area	Area Name	Description
A	***ThinkCentral* logo**	Returns you to the *ThinkCentral* home page.
B	**Banner Links**	• **Help** – Opens an online help system that provides detailed instructions for ThinkCentral tasks. • **Log Out** – Logs you out of ThinkCentral.

Area	Area Name	Description
		• Account linking icon – If you have more than one account (accounts in more than one school or more than one class), this allows you to select and open another account.
C	**Things to Do**	Opens the **Things to Do** page, which lists all of the tests and assignments your teacher has assigned to you. You can even find your old assignments after you are done with them.
D	**My Library**	Opens the **My Library** page, where you can find all of your online classroom resources, such as books, movies, sound files, worksheets, and more.
E	**My Scores**	Opens the **My Scores** page, which lists the scores that you received on tests and assignments that you have taken. If your teacher has written a comment on your assignment, you can find it here. You can even look at your old tests to see how well you did on each question.

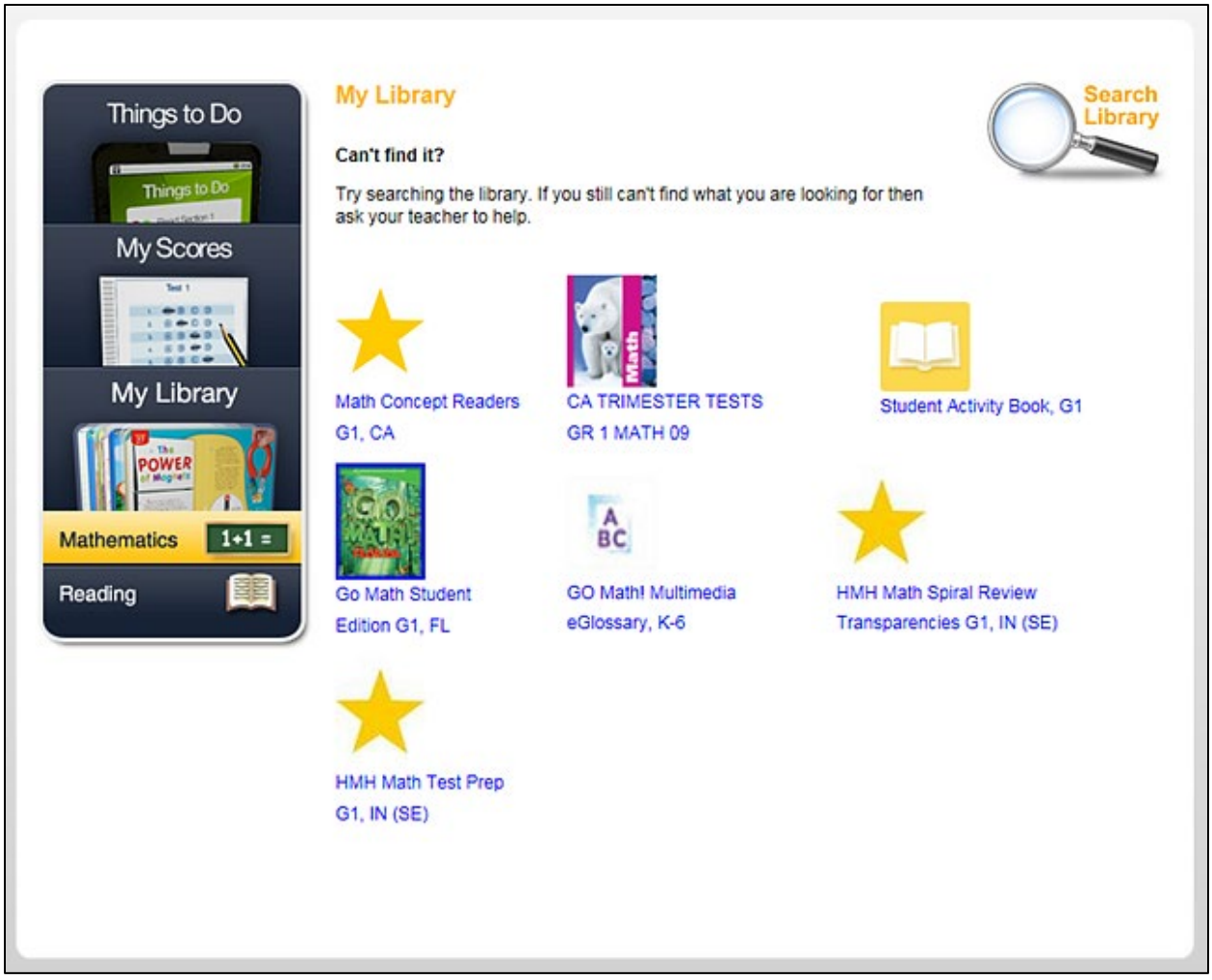
➔ Once you open a page, you can move to a different page by clicking the area with the page name on the left panel.



Using My Library

The **My Library** page lists all of the library items available to you, including online classroom books, movies, sound files, worksheets, and more.

➔ To open the **My Library** page, click **My Library** on the left panel.



On the My Library page, you can do any of the following:

➔ Open a library item by clicking the item. The item opens in a separate window.

Note: When you close an item, the **My Library** page is still open.

➔ Filter the items that appear by clicking one of the subject buttons (e.g., Mathematics and Reading) located at the bottom of the left panel.

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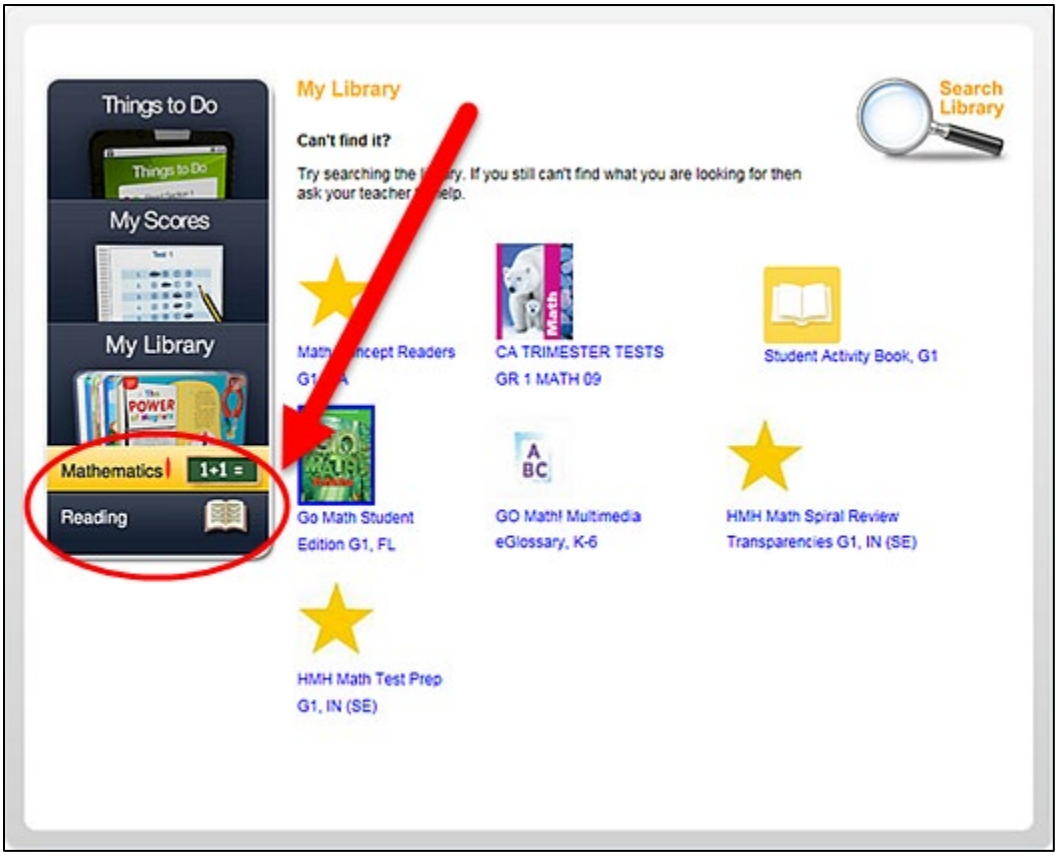


➔ Click **My Library** to see all of your items again.

➔ Click the **Search Library** magnifying glass. 

Search My Library

My Library lists all of the library items that are available to you. You can search for a specific library item using the **Search Library** option.

To search My Library:

1. In **My Library**, click the **Search Library** magnifying glass. 

The **Search Library** page appears.

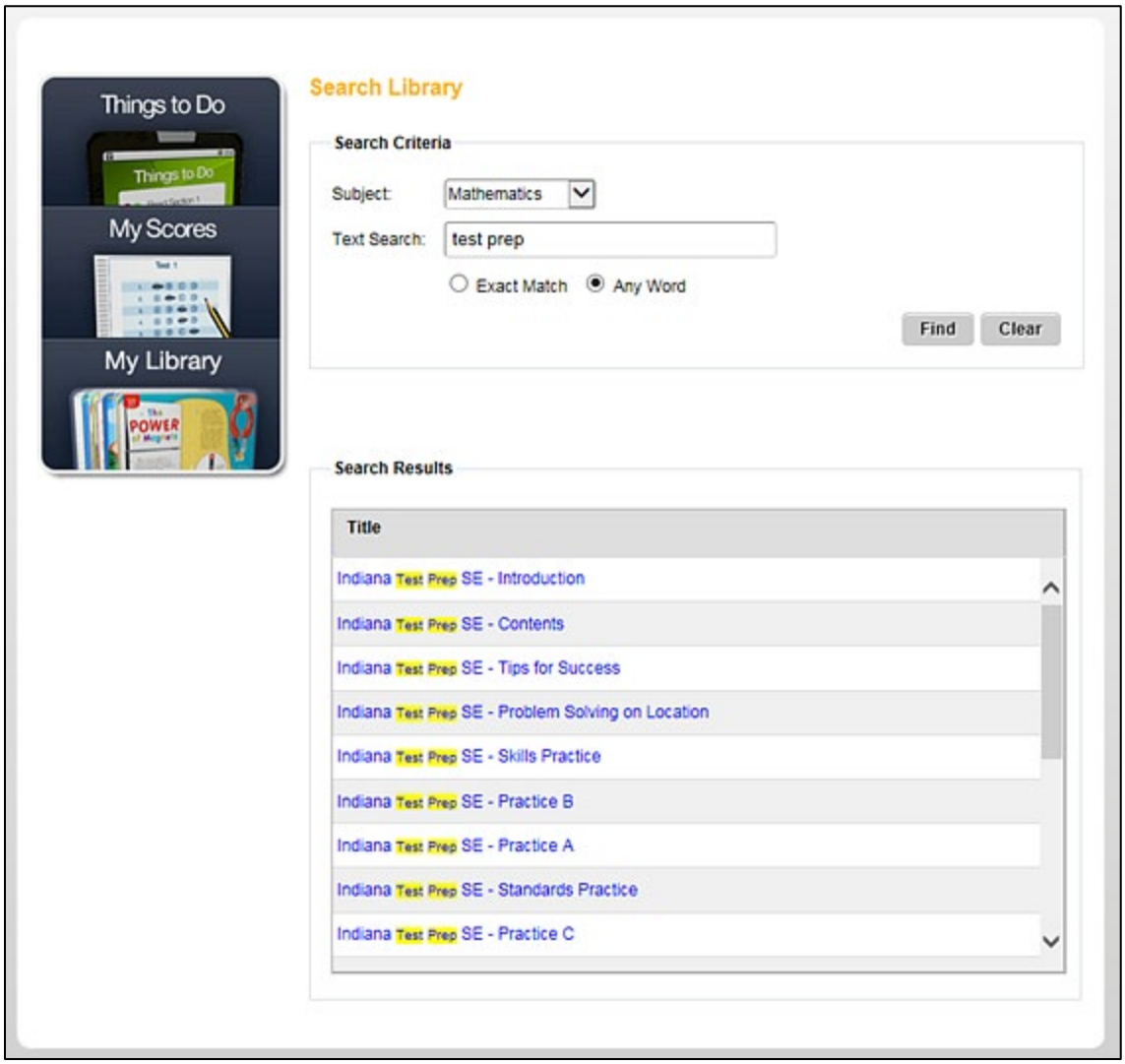
   You can search for a library item by subject, by words, or by both subject and words.

2. In the **Subject** list, select the subject of the item.

3. In the **Text Search** box, type a word or words that identify the item.

Note: To empty the **Search Criteria** area and start a new search, click **Clear**.

4. Click **Find**. The items that match your search filters are listed in the **Search Results** area.



5. To open an item in the list, click the name of the item. The item opens in a separate window.
6. To return to **My Library**, click **My Library** on the left side of the page.

Grading Procedures and Unit Assessment Checklists

Grades are calculated for Unit 4, Unit 5, and Unit 6. The semester grade is an average of the three unit grades. You can see these point values within the assignment or in My Grades on the course website.

For each Unit assessment, the student will complete the assigned textbook pages, then scan or take a digital photograph of the completed pages showing his or her work. Combine the images into a single PDF (see **Requirements for Creating PDFs** on the course home page) and upload the file for grading as instructed in the assignment.

At the end of the course, the student's assignments grade will be determined by dividing the total number of points earned by the total number of points available in the course.

Make sure your student completes the following items for each Unit assessment and uploads them to Texas Tech University K-12 for evaluation.

Schedule for Assessments

Unit 4, Day 100

- *Texas Go Math! Volume 2,* pages 467-468, 493-494, and 525-530

Unit 5: Day 125

- *Texas Go Math! Volume 2,* pages 567-570 and 613-614

Unit 6: Day 150

- *Texas Go Math! Volume 2,* pages 645-646, 671-676, 719-722, and 759-762