Introduction

Curriculum Overview

Congratulations on choosing an outstanding second-grade 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.

Before beginning the curriculum, please take a few minutes and look through the textbook, *Texas Go Math!* at <u>www-k6.thinkcentral.com</u>. Your student will use this digital text for all assignments and independent practice.

This course is completed entirely online in Blackboard using the PDF **Unit Lessons** and **Worksheets** documents, along with the digital textbook.

2nd Grade 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.

Because we apply math in our everyday lives, the textbook provides real world math applications in the form of printable 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. Information on logging into this website is available in the **Online Resources** section of this Introduction. Once you have accessed the website, click on *My Library*; you will have access to a variety of resources. Although the activities, practices, games, and books may not all be assigned in the curriculum, please feel free to include them when time permits.

Your student will be using manipulatives and worksheets throughout the curriculum. You will find patterns needed for several of the activities found in the **Worksheets** document in the **Resources** section of this course. **It is strongly recommended that you print these worksheets, attach them to cardstock, and have them laminated, as they will be used often.** You may choose to purchase manipulatives, or you can use the alternative manipulatives listed with the other materials in the introduction. Make sure you have all the manipulatives and other materials needed before beginning each lesson.

Have your student keep a math journal of key vocabulary terms and other information for future reference. He or she will add to the journal as new vocabulary is learned. If your student does not

keep a journal, the vocabulary terms should be displayed somewhere near the student's work area for reference.

Your student has been learning addition and subtraction facts in past years. Please help the student memorize the basic addition and subtraction facts by practicing them daily. You may use flash cards or simply have your student write down the fact families for practice. Committing these facts to memory will help your student become a more independent and confident learner.

About This Course

In Semester A of this course, your student will be introduced to second-grade math concepts through methods which have been proven highly effective for learning in multiple settings. This curriculum will specifically target the math skills and topics that seem to consistently give students the most trouble. Lessons offer fun, hands-on activities to introduce and reinforce concepts and to provide students with effective problem-solving skills. The first page of each lesson in the textbook identifies the main idea of each lesson's concept. Vocabulary words, both new and review, enable students to identify the terms being presented in each lesson. An **Essential Question** in each lesson offers your student the opportunity to use the vocabulary and math skills learned to orally demonstrate an understanding of the lesson's concept.

This curriculum offers many problem-solving opportunities throughout each chapter which allow your student to apply the math skills learned to solve problems using visual thinking, logical reasoning, and number sense. Problem-solving strategy lessons give your student different methods to effectively solve word problems. The word problems in this curriculum are not simple computations, but involve multiple steps to solve, allowing your student the opportunity to analyze what the problem is asking and decide how to use the information given.

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.

For each Unit assessment in this course, the student will download and complete PDF **Unit Test** 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.

Course Objectives

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

- Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
 - \diamond apply mathematics to problems arising in everyday life, society, and the workplace;

- 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;
- 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;
- communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
- create and use representations to organize, record, and communicate mathematical ideas;
- analyze mathematical relationships to connect and communicate mathematical ideas; and
- display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.
- 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 related to place value. The student is expected to:
 - use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones;
 - \diamond use standard, word, and expanded forms to represent numbers up to 1,200;
 - \diamond generate a number that is greater than or less than a given whole number up to 1,200;
 - use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and symbols (>, <, or =);
 - ◊ locate the position of a given whole number on an open number line; and
 - \diamond name the whole number that corresponds to a specific point on a number line.
- Number and operations. The student applies mathematical process standards to recognize and represent fractional units and communicates how they are used to name parts of a whole. The student is expected to:
 - partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words;
 - explain that the more fractional parts used to make a whole, the smaller the part; and the fewer the fractional parts, the larger the part;
 - v use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole; and
 - ◊ identify examples and non-examples of halves, fourths, and eighths.

- **Number and operations.** The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve addition and subtraction problems with efficiency and accuracy. The student is expected to:
 - ◊ recall basic facts to add and subtract within 20 with automaticity;
 - add up to four two-digit numbers and subtract two-digit numbers using mental strategies and algorithms based on knowledge of place value and properties of operations;
 - solve one-step and multi-step word problems involving addition and subtraction within 1,000 using a variety of strategies based on place value, including algorithms; and
 - generate and solve problem situations for a given mathematical number sentence
 involving addition and subtraction of whole numbers within 1,000.
- Number and operations. The student applies mathematical process standards to determine the value of coins in order to solve monetary transactions. The student is expected to:
 - ♦ determine the value of a collection of coins up to one dollar; and
 - vuse the cent symbol, dollar sign, and the decimal point to name the value of a collection of coins.
- Number and operations. The student applies mathematical process standards to connect repeated addition and subtraction to multiplication and division situations that involve equal groupings and shares. The student is expected to:
 - Image: model, create, and describe contextual multiplication situations in which equivalent sets of concrete objects are joined; and
 - Imodel, create, and describe contextual division situations in which a set of concrete objects is separated into equivalent sets.

Source: The provisions of this §111.5 adopted to be effective September 10, 2012, 37 TexReg 7109; amended to be effective October 15, 2013, 38 TexReg 7112.

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.



Books and Materials for MATH 2 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! (Houghton Mifflin Harcourt, 2015), ISBN 978-0-544-36498-1
- Print: *Texas Go Math!* (Houghton Mifflin Harcourt, 2015), ISBN 978-0-544-13652-6 (2-volume set)

Optional Suggested Literature

These books can be purchased from any book vendor or borrowed from your public library.

Unit 1

Modules 1-3:

- Cave, Kathryn, Out for the Count: A Counting Adventure, Francis Lincoln Children's Books, 2006
- McGrath, Barbara Barbieri, The Cheerios Counting Book, Scholastic, Inc., 1998
- Murphy, Stuart J., Henry the Fourth, HarperCollins Children's Books, 1998
- Pallotta, Jerry, One Hundred Ways to Get One Hundred, Scholastic, Inc., 1999
- Rocklin, Joanne, The Case of the Missing Birthday Party, Scholastic, Inc., 1997

Module 4:

- Gifford, Scott, *Piece = Part = Portion*, Tricycle Press 2008
- Marzallo, Jean, Shanna's Pizza Parlor, Hyperion Books for Children, 2004
- Mathews, Louise, Gator Pie, Sundance Publishing, 1995
- Pallotta, Jerry, Apple Fractions, Cartwheel Books, 2003
- Pallotta, Jerry, The Hershey's Milk Chocolate Fractions Books, Cartwheel Books, 1999

Unit 2

Modules 5-6:

- Berenstain, Stan and Jan, *The Berenstain Bears and the Missing Dinosaur Bone*, Random House Books for Young Readers, 1980
- Cuyler, Margery, 100th Day Worries, Simon & Schuster Children's Publishing, 2000
- Murphy, Stuart J., *Double the Ducks*, HarperCollins Children's Books, 2003
- Murphy, Stuart J., Mall Mania, HarperCollins Children's Books, 2006

Modules 7-8:

- Hulme, Joy N., Sea Sums, Hyperion Books for Children, 1996
- Leedy, Loreen, Mission Addition, Holiday House, 1997
- Long, Lynette, Domino Addition, Charlesbridge Publishing, 1996
- Murphy, Stuart J., Safari Park, HarperCollins Children's Books, 2001
- Tang, Greg, Math Fables, Scholastic, Inc., 2000

Unit 3

Modules 9-10:

- Leedy, Loreen, Subtraction Action, Holiday House, 2002
- Long, Lynette, Domino Addition, Charlesbridge Publishing, 1996
- McGrath, Barbara Barbieri, More M&M's Math, Charlesbridge Publishing, 1998
- McGrath, Barbara Barbieri, The M&M's Subtraction Book, Scholastic, 2006
- Nagda, Ann Whitehead, Panda Math: Learning About Subtraction, Henry Holt & Co., 2005
- Wise, William, *Ten Sly Piranhas: A Counting Story in Reverse*, Puffin Books (Penguin Group), 2004

Module 11:

- Adams, Barbara Johnston, The Go-Around Dollar, Simon & Schuster Children's Publishing, 1992
- Hoban, Tana, 26 Letters and 99 Cents, HarperTrophy, 1995
- Leedy, Loreen, The MonSter Money Book, Holiday House, 2000
- McMillan, Bruce, Jelly Beans for Sale, Scholastic, 1996
- Murphy, Stuart J., Slugger's Car Wash, HarperCollins Publishers, 2002
- Viorst, Judith, Alexander, Who Used to be Rich Last Sunday, Aladdin, 1987

Module 12:

- Aker, Suzanne, What Comes in 2's, 3's, and 4's?, Scholastic, 1993
- Bruce, Sheila, Everybody Wins!, Kane Press, 2001
- Giganti, Paul Jr., Each Orange Had 8 Slices, Greenwillow Books, 1992
- Mazzola, Frank, Jr., Counting is for the Birds, Charlesbridge Publishing, 1997
- Pinczes, Elinor J., A Remainder of One, Houghton Mifflin, 1995
- Rocklin, Joanne, One Hungry Cat, Cartwheel Books, 1997

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Manipulatives and Materials

Required:

- apples or paper apples, 3
- brass fasteners, 2
- coins, real or play: pennies, nickels, dimes, and quarters
- connecting cubes (or alternate manipulatives), two colors, 20
- counters, two-color, 30
- crayons
- dice or number cubes, 3
- dollar bills, real or play
- dry erase board and markers
- envelopes, 5
- glue
- index cards
- magazines, newspapers, or books
- marker
- masking tape
- mini chocolate chips, peanut butter chips, or small candies
- number cards or index cards numbered 0-99
- paper clips
- paper plates, dinner or dessert size
- paper: construction, drawing, graph, lined notebook, plain white
- pencils
- poster board or chart paper
- pretzels, stick
- ruler
- saltine crackers
- scissors, 2 pairs (at least one child's safety scissors)
- small objects to use as counters: connecting cubes, game pieces, beads, buttons, building blocks, small candies, etc. (two colors)
- stickers
- sticky notes
- tagboard or construction paper, 2
- wide-ruled spiral notebook or three-ring binder

• yard stick or similar measuring tool

Optional:

- apple
- bags, small, 5
- base-ten blocks
- beans, tokens, or beads for counters
- boxes
- clothesline
- clothespins
- color pencils
- dimes, 9
- envelopes, 2
- flying disc, football, or baseball
- knife
- marbles, 10
- paper clips
- pennies, 20
- playing cards
- sandwiches, 4
- sentence strip
- tape

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

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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	<i>ThinkCentral</i> logo	Returns you to the <i>ThinkCentral</i> 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.
8	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.

Things to Do	Things to Do	hist your togehor know your	ús completed you	rassianment	
Things to Do	Today is Wednesday, Ma	rch 2, 2016	ve completed you	Show: All As	signments 🗸
My Scores	Assignment	Teacher	Subject	Due Date	
	Math 1	Shea	Mathematics	Mar. 09, 2016	Done
	Math test	Shea	Mathematics	Mar. 09, 2016	Done
				Old	Assignments

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:

 \rightarrow 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 ope	en.
		2		,	•	•		

→ 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.

	Search Criteria	
Things to Do	Subject Mathematics	
My Scores	Text Search: test prep)
	O Exact Match Any Word	
		Find Clear
	Search Results	
POWER		
	Title	
	Indiana Tes: Pres SE - Introduction	
	Indiana Test Prep SE - Contents	(
	Indiana Test Prep SE - Tips for Success	
	Indiana Test Prep SE - Problem Solving on Location	
	Indiana Test Prep SE - Skills Practice	
	Indiana Test Prep SE - Practice B	
	Indiana Test Prep SE - Practice A	
	Indiana Test Prep SE - Standards Practice	
	Indiana Test Pres SE - Practice C	

- 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 1, Unit 2, and Unit 3. The semester grade is an average of the three unit grades. The unit grades will include a test for each unit. Unit Tests 1 and 2 are located in their respective Unit folders in this online course; the Unit 3 Test is in the Final Exam folder.

The Unit assessments will be uploaded to Texas Tech University K-12 to be graded. After the student has finished each test, scan or take a digital photograph of the assigned pages showing his or her work. Combine the images into a *single* PDF (see "Requirements for Creating PDFs" on the course home page). When you save the document, use the naming convention given for each Unit Test as the name of your file. Upload the file according to the instructions given in the assignment.

Schedule for tests

Unit 1, Day 25

• Unit 1 Test

Unit 2, Day 50

• Unit 2 Test

Unit 3, Day 75

• Unit 3 Test (Final Exam)