Grade Level	Content Area	Course Title *(For 9-12 Samples Only)*	Unit Title
Grade KG	Mathematics		Addition and Subtraction Fun

Length of Unit	Time of Year Taught	Expected Prior Knowledge
10 Days – approximately 2 days for each of five lessons.	2nd quarter of first semester	Count to 20 by 1's, Identify pictures that represent numbers up to 10, Counting up and down from 1 to 20, Comparing numbers that are equal, more than or less than from 1 to 20, Be able to recognize and write numbers 1 through 10, Be able to be given a picture of objects and say and write how many objects there are up to 10.

Unit Description

This unit focuses on initial addition and subtraction concepts with objects, drawings, dramatization, verbal explanations or expressions and equations. Students will work on decomposing numbers up to 10, using and recording their work with objects, drawings and or equations.
Note: *In Kindergarten, routines and games that support the mathematics in this unit should be happening all year and are not limited to one unit.*
After completion of the unit, students should show progress toward mastery of the following skills:

- Model addition by counting on; model subtraction by counting down
- Recognize objects/pictures of objects and relate to an oral/written number
- Add objects to a set to show a number
- Take away objects in a set to show a number
- Explain how to add or subtract objects to show a different number
- Be able to act out an addition and/or subtraction story using manipulatives

Standards: Common Core **Domain:** Operations and Algebraic Thinking **Cluster:** Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. **Standard #1**	**Standard #1:** Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g. claps), acting out situations, verbal explanations, expressions, or equations.

Summative Assessment	Students will be assessed based on teacher observation and their ability to demonstrate addition and subtraction using manipulatives by following a word story. The summative assessment includes 10 total addition and subtraction activities using manipulatives that the students must demonstrate successfully. The class will work together as a whole to understand the assessment and then students will work one on one with the teacher and demonstrate an addition and subtraction story using Teddy Bear manipulatives. Each activity direction is worth 1 point for a total of 10 points.
Scoring for Summative Assessment	Assessment includes 10 total addition / subtraction activities Each activity is worth 1 point for a total of 10. If the student completes the activity correctly, they will receive 1 point. Mastery = 8/10 or higher (80% or higher)

Materials/Resources Needed *Include all items for the entire unit.*	***There was an Old Lady Who Swallowed a Fly*** by Simms Tabak; felt board; felt board animals: fly, spider, bird, cat, dog, goat, cow, and horse; *Unifix Towers* instructions, paper, pencils, red and blue crayons, red and blue Unifix cubes (10 of each color for each student and the teacher), two dice – one blue and one red – for each child and the teacher, red and blue chalk, hand tom tom drums (one for each student and the teacher), work mats (plastic place mats) one for each student; 10 Teddy Bear counters for each student and the teacher; ***Five Little Monkeys*** by Eileen Christelow; *Hide the Cubes* instructions; *Picture Addition Worksheets*; ***Saxon Math K First Edition*** by Nancy Larson;large basket; access to computers (one for every two students minimum); class computer, Internet access and computer projector.

This table is consistent with the methods of instruction and assessment described in the narrative.

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Instruction and Timeline	Obtain from the Phoenix public library, ***There was an Old Lady Who Swallowed a Fly*** by Taback, Simms. During Circle Time: Read (sing/song) through the story once showing pictures from the book. Tell the story again, but using felt board and pre-made animal pictures (fly, spider, bird, cat, dog, goat, cow, and horse), place the animal on the felt board as the animal is swallowed. Next, have the class sing/song with you and again put up pictures of each animal as it is swallowed. From time to time, stop the song and ask the children to count the number of animals that have been swallowed. Then ask how many animals the old lady will have swallowed when she swallows one more (and then two more). After circle time and students are back in their seats, introduce the concept of addition using students as counting objects **Say:** *I would like two volunteers to help me act out a story.* Have two children come up to the front of the classroom.	Practice the concept of addition: During circle time, have the children listen to the number of drum beats they hear when you beat the hand tom-tom drum (beat the drum three times). Ask them how many drum beats they would hear all together if you added one more drum beat. Then, reproduce the sound, counting as you beat. Pause slightly after the third beat, and then add one more to make four. Say, "*three beats plus one more beat is four beats all together.*" Now provide students with drums of their own. (Initially students will want to play their drums, allow a few minutes to let them play.) Ask the students to silence the drums and listen to your directions. Call on one student to make 2 drum beats. Call on another student to make 1 more beat. Ask: "*How many beats were made all together.*" Emphasize that we started with 2 beats and added 1 more beat to make a total of three beats. Repeat again calling on different students. With each of the examples, be sure to solicit for the addition words and emphasize them as necessary.	Obtain from the Phoenix Public Library, ***Five Little Monkeys*** by Eileen Christelow. During Circle Time: Read through the story once showing pictures from book. Tell the story again, but using felt board and five pre-made monkey pictures and a bed picture. Place all five monkeys above the bed on the felt board. Ask the children to count aloud (and together) the number of monkeys on the felt board. As one monkey falls off the bed (as dictated by the story), remove one from the felt board. Ask the children, "How many monkeys fell off the bed?" (1) "How many monkeys are remaining on the bed" (4). "Good, five monkeys take away one monkey leaves four	Guided Lesson: Larson, Nancy, <u>Saxon Math K</u>, Lesson 18 – Edited for Subtraction, "Acting Out Story Problems." Guide the students through the lesson focusing on subtraction concepts. Student uses Teddy Bear counters and a work mat to model a playground in which Teddy Bears must leave the playground. Seat the children in a semicircle on the floor. Say: *Today you will practice how to act out stories using our teddy bear counters. I'm going to give everyone a mat and some Teddy Bears.*" Distribute the work mats and give each child ten Teddy Bears. Say: *Let's pretend our mat is a playground. I'm going to put ten*	Practice addition and subtraction using computer math games. Using the in-class computer and projector, go to websites: IXL: Addition with Pictures up to 5: http://www.ixl.com/math/kindergarten/addition-sentences-sums-up-to-5 – And – IXL: Subtraction with Pictures up to 5: http://www.ixl.com/math/kindergarten/subtract-with-pictures-numbers-up-to-5 – And – IXL: Addition

	Ask: *How many children are at the front of the room?* Children should say "2." **Say:** *Two people are at the front of the room. One, Two.* Ask another child to come to the front of the room. **Say:** *Now one more person is at the front of the room. Let's count how many people are at the front of the room now.* Have the children count aloud to 3. **Ask:** *What did we do when we asked another person to come to the front of the room?* (We increased the group by one.) Continue adding one more child and counting the new number until five children are at the front of the room. **Ask:** *What did we do each time?* Children should say that we added one more to the group. **Ask:** *What happened to the number of children each time we added one more to the group?* (The group had 1 more each time. The group got bigger.) Practice the concept of addition with the *Unifix Towers*. (See *Unifix Towers* directions.) Give each child 6 red Unifix cubes, 6 blue Unifix cubes, a blue die, a red die, a blue crayon, a red crayon, and a piece of paper. Demonstrate the process of making a tower with the students. Roll the dice and build the tower as indicated on the dice. For example, if a red "2" is rolled and a blue "5" is rolled, build a tower with 2 red cubes and 5 blue cubes. Count aloud the number of red cubes, count aloud the	Guided Lesson: Larson, Nancy, Saxon Math K, Lesson 18 – Edited for Additon, "Acting Out Story Problems." Guide the students through the lesson focusing on addition concepts. Student uses Teddy Bear counters and a work mat to model a playground in which Teddy Bears come to the playground to play. Seat the children in a semicircle on the floor. Say: *Today you will learn how to act out stories using our teddy bear counters. I'm going to give everyone a mat and some Teddy Bears."* Distribute the work mats and give each child seven Teddy Bears. Say: *Put the Teddy Bears on the floor next to your mat. Let's pretend our mat is a playground. I'm going to put three Teddy Bears on my playground."* Demonstrate for the children. Say: *Now I would like you to put three Teddy Bears on your playground. One more Teddy Bear wanted to play. What do we need to do? (Put one more Bear on the mat) How many Teddy Bears are playing now? (4). Three more friends came to play. What do we need to do? (Put three more Bears on the mat) How many Teddy Bears are playing now? (7). Very good, children. Now let's clear our mats and practice one more Teddy Bear story.* Play the game again. The number of Bears can be altered. Practice: Addition using *Picture Addition Worksheets*. The children will count the number of objects in one frame and the number of objects in another frame, in which the frames are	monkeys jumping on the bed." Continue until all monkeys have fallen off the bed. Finally sing and act out the nursery rhyme song, *Five Little Monkeys*, using your fingers and body. (The palm of your other hand can be the bed, for example). Repeat and have the children sing the song and duplicate your actions. Practice the concept of subtraction with unifix cubes. Play the game, *Hide the Cubes*. (See *Hide the Cubes* directions.) Guided Practice: Model the game with a student. Build a stick of 6 connecting cubes (color is not important). Count the cubes together aloud. Put the stick behind your back and break it into two sections (i.e., a stack 4 and stack of 2). Show one section (i.e., stack of 4) to the student and ask, *"How many cubes do I have behind my back?"* (2) Let the student respond and then check to see if the student is correct. Then say, *"Six cubes take*	*Teddy Bears on my playground."* Demonstrate for the children. Say: *Now I would like you to put ten Teddy Bears on your playground.* (Count aloud as the children put the Teddy Bears on their mat. "*One, two, three, …*") Say: *Two Teddy Bears got sick and they went home. What do we need to do? (Take 2 Bears off the mat) How many Teddy Bears are playing now? (8). Two Teddy Bears went home to take a nap. What do we need to do? (Take 3 Bears off the mat) How many Teddy Bears are playing now? (5). Very good, children. Now let's clear our mats and practice one more Teddy Bear story.* Play the game again. The number of Bears removed can be altered. Note to the Teacher: The student will have an opportunity to revisit this standard with Saxon lessons 25, 43, 80, 91 and 109 in the Saxon Text in which addition and subtraction is modeled using a	with Pictures up to 10: http://www.ixl.com/math/kindergarten/addition-with-pictures-sums-up-to-10 – And – IXL: Subtraction with Pictures up to 10: http://www.ixl.com/math/kindergarten/subtract-with-pictures-numbers-up-to-10 Model how to use the programs. Arrange for students to have their own computer (or two students for every one computer) such that each student (or pairs of students) can play on their own game. Summative Assessment: Have the students complete the summative assessment by representing addition and subtraction with Teddy Bear

	number of blue cubes, and then count aloud the total number of cubes. Say, "*Two red unifix cubes added to five blue unifix cubes makes seven unifix cubes all together.*" Next model drawing the tower on the board with red and blue chalk. Have the children draw the tower on their paper using the red and blue crayons. (Five blue squares drawn on top of two red squares). After creating the drawing, have the children break apart their tower and begin again, but this time independently with their own die. After making the tower, have the students draw the tower on their paper as before with the red and blue crayons. The teacher should monitor the students' progress asking leading questions about the addition representations made with cubes. Daily Practice: Ask questions throughout the day that foster addition knowledge (e.g., "*You have two bows in your hair and Nancy has one so how many bows are there in total?*")	separated horizontally by the "+" sign, i.e., 3 cherry pictures "+" 2 cherry pictures. And then the children will determine the total number of cherry pictures by counting on. (3, one more is 4, and one more is 5.) In the final horizontal frame, which is separated by the first two frames with an "=" sign, the children will draw the total number of objects, i.e., draw 5 cherries. Complete the 1st worksheet together as a class (guided practice) and then have the children complete one more worksheet on their own. If students finish early, provide them with an additional practice sheet. Daily Practice: Ask questions throughout the day that foster addition knowledge (e.g., "You have four crayons on your desk and Alice has three so how many crayons are there in total on the desk?")	*away 4 cubes leaves 2 cubes.*" Repeat again using a different number for the two sticks. Independent Practice: Have the students work with a partner and have them play *Hide the Cubes*. Monitor the students' progress. Daily Practice: Ask questions throughout the day that foster addition and subtraction knowledge (e.g., "You have five grapes for a snack and John has three grapes for a snack. How many grapes are there all together?" – and – "There are 4 children at the computers. There are only 3 computers in the computer center. How many children should leave this center?")	story and manipulatives. (The Saxon method is to continue to revisit concepts throughout the school year.) Practice the concept of subtraction with unifix cubes. Play the game, *Hide the Cubes*. (See *Hide the Cubes* directions and Lesson 3.) Play the game with 10 cubes instead of 6 cubes as was done in Lesson 3.	manipulatives and following verbal explanations in a story. The summative assessment with answers and rubric is attached.
Student Activities and Timeline	Circle Time: ***There was an Old Lady Who Swallowed a Fly***. Students will participate in acting out the story. Students will participate in singing the song and providing answers to teacher addition questions. Students will participate in demonstrating addition using themselves as counting objects for adding onto and determining the final	Circle Time: Students will participate in determine the number of drum beats and modeling of addition with hand tom-tom drums. Students will provide answers to teacher questions. Students will respond using appropriate addition vocabulary: add, plus, all together, total Students will participate in oral addition word stories and act out the stories using Teddy Bear	Circle Time: ***Five Little Monkeys.*** Students will participate in acting out the story. Students will participate in singing the song and providing answers to teacher subtraction questions. Students will participate and	Students will participate in oral subtraction word stories and act out the stories using Teddy Bear manipulatives. Students will participate and demonstrate the concept of subtraction by using unifix cubes. Students,	Students will practice addition with pictures and subtraction with pictures using the computer. Students will play progressively more difficult games after mastering easy problems.

	amount all together. Students will build unifix cube towers to show addition and make drawings of their towers. Students will use blue and red unifix cubes to represent the two addends and corresponding crayons to draw the sum. Students will respond to teacher questions. Student will respond to teacher addition questions throughout the day.	manipulatives. Students will complete *Picture Addition* worksheets. Students will orally count the number of objects pictured in one frame and orally add to it the same type of objects pictured in the next frame. Students will draw and color the total number of objects from both frames in a third frame. Students will respond to teacher questions. Students will respond to teacher addition questions throughout the day.	demonstrate the concept of subtraction by using unifix cubes. Students, working in partners, will build a SIX-cube tower for a "total" and then, without their partners viewing, break the tower in two pieces. One part of the broken tower will be revealed and the partner must determine the amount of cubes in the remaining unseen second portion of the broken tower. By correctly determining the number in the second tower, the student demonstrates subtraction using manipulatives. Students will respond to teacher subtraction questions throughout the day.	working in partners, will build a TEN-cube tower for a "total" and then, without their partners viewing, break the tower in two pieces. One part of the broken tower will be revealed and the partner must determine the amount of cubes in the remaining unseen second portion of the broken tower. By correctly determining the number in the second tower, the student demonstrates subtraction using manipulatives.	Student will start with addition and subtract up to 5, and then will progress to addition and subtraction up to 10. Students will complete the summative assessment in which students participate in oral addition and oral subtraction word stories and act out the stories using Teddy Bear manipulatives. Students will complete the summative assessment in a one to one setting with the teacher.

Summative Assessment – Addition / Subtraction Story Prompt

Materials
Basket of Teddy Bear counters (10 for each student and for you)
Work mats (one for each student and you)
Unifix Cubes at student desks (10 cubes for each student)

The Lesson – Acting Out Addition and Subtraction Story Problems

- Seat the children in a semicircle on the morning circle time carpet.
  "Today we will practice how to act out stories using our Teddy Bear counters."
  "I'm going to give everyone a mat and some Teddy Bears."

- Distribute the work mats.

- Give each child ten (10) Teddy Bears.
  "Put the Teddy Bears on the carpet next to your mat."
  "Let's pretend out mat is a playground."
  "Two Teddy Bears were playing at the playground."
  "I'm going to put two Teddy Bears on my playground."

- Demonstrate for the children → put two Teddy Bears on your mat.
  "Now I would like you to put two Teddy Bears on your playground."
  "Next, three more Teddy Bears came and wanted to play."
  "What do we need to do?" (Put three more bears on the mat)
  "How many Teddy Bears are playing now?" (5)
  "Two Teddy Bears were hiding in a tree. They wanted to play, too"
  "What do we need to do?" (Put two more bears on the mat)
  "How many Teddy Bears are playing now?" (7)
  "Four Teddy Bears needed to go home and eat lunch."
  What do we need to do? (Take four bears off the mat)
  "How many Teddy Bears are playing now?" (3)
  "Now I am going to play the Teddy Bear story game with each of you. I am first going to play with _____. When I am NOT telling a Teddy Bear story with you, you can play Unifix Towers with a partner. When I call your name, it will be your turn to play the Teddy Bear story with me. "

- Choose one student. Have everyone else clear their work mat and put their Teddy Bears in the basket. Collect the work mats, except from the first student. Dismiss students, except _____, to their desks to play Unifix Towers.

- Give the student a work mat and 10 Teddy Bear counters. Tell the story as before changing the number of Teddy Bears and changing the events that occur for the Teddy Bears ("adding to" or "taking away"). Have a total of ten events that will require "adding to" or "subtracting from" in the story. The story should be the same for each student.

- Story Prompt:
    1. Five Teddy Bears were at the park playing. (Place 5 Teddy Bears on the mat)
    2. Two Teddy Bears heard the ice cream truck and went to get ice cream (Remove 2 Teddy Bears from the mat) (There are now 3 Teddy Bears)
    3. One Teddy Bear fell down and hurt his knee and had to go home (Remove 1 Teddy Bear from the mat) (There are now 2 Teddy Bears)
    4. Four Teddy Bears road up on their bikes and wanted to play. (Add 4 Teddy Bears to the mat) (There are now 6 Teddy Bears)
    5. Three Teddy Bears went to McDonald's to eat lunch. (Remove 3 Teddy Bears from the mat) (There are now 3 Teddy Bears)
    6. One Teddy Bear's mother called for her to come home. (Remove 1 Teddy Bear from the mat) (There are now 2 Teddy Bears)
    7. Two Teddy Bear's came from the school and wanted to play. (Add 2 Teddy Bears to the mat) (There are now 4 Teddy Bears)
    8. One Teddy Bear went home to take a nap. (Remove 1 Teddy Bear from the mat) (There are now 3 Teddy Bears)
    9. Three Teddy Bears came from the library and wanted to play. (Add 3 Teddy Bears to the mat) (There are now 6 Teddy Bears)
    10. Two Teddy Bears had to go home to finish their homework. (Remove 2 Teddy Bears from the mat) (There are now 4 Teddy Bears)

- Encourage the student to demonstrate the event by "adding to" or "taking away" and respond orally the new total of Teddy Bears after you have said the event.

- Encourage responses if necessary by asking, "What do we need to do now?" or "How many are playing now?" Praise the student if correct answers are given without prompting.

- Call up each student one by one.

- Score students according to the rubric. Mastery is defined as "Good" with 80% correct answers.

Test Scoring Rubric:

Mastery is represented by "Good" (or higher) on the scoring rubric and is achieved by performing 8 out of 10 activities (80%) correctly in the Addition / Subtraction Story Prompt

E - Excellent:	Student participates and is engaged, student provides answers with minimal prompting (orally or demonstrating), and correctly demonstrates every answer	Answers correctly 10 out of 10
G - Good:	Student participates and student provides correct answers with minimal prompting eight out of ten times (orally or demonstrating)	Answers correctly 9 out 10 - or - 8 out of 10 (8 out of 10 or better is required for mastery)
S - Satisfactory:	Student participates and student provides correct answers with prompting seven out of ten times (orally or demonstrating)	Answers correctly 7 out of 10
I - Improving:	Student has minimal participation and/or correctly answers six out of ten times with prompting	Answers correctly 6 out of 10
N - Needs Improvement:	Student does not participate and/or answers less than six answers correctly	Answers correctly 6 out of 10 - or - less