Grade Level	Content Area	Course Title *(For 9-12 Samples Only)*	Unit Title
Grade 1	Mathematics		Addition and Subtraction Approaches

Length of Unit	Time of Year Taught	Expected Prior Knowledge
5 Days	1st quarter of first semester	Count to 100 by 1's, Identify pictures that represent numbers up to 30, Counting up and down from 1 to 100, Comparing numbers that are equal, more than or less than from 1 to 100, Be able to recognize and write numbers 1 through 100, Be able to be given a picture of objects and say and write how many objects there are up to 30. Solve contextual problems by developing, applying, and recording strategies with sums and minuends to 10 using objects, pictures, and symbols

Unit Description

In first grade, math is taught with a problem solving approach and the emphasis is on the development and understanding of mathematical concepts. The primary focus of the first grade math curriculum is on numbers and operations, which includes addition. The Saxon curriculum is also taught in a spiraling format, meaning that all the addition concepts taught are reviewed and expanded upon throughout the year. In this unit, different approaches to solving addition problems are explored, which include: acting it out, guess and check, finding patterns, using and making pictures, and number sentences.

After completion of the unit, sstudents should show progress toward mastery of the following skills:

- Recognize that addition is the progressive accumulation of a given object.
- Be able to explain what addition means.
- Recognize that subtraction is the taking of one number or amount away from another
- Be able to explain what subtraction means.
- Model addition by counting on – recognizing this pattern
- Model subtraction by taking away – recognizing this pattern
- Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
- Identify the given information that can be used to find an addition or subtraction solution.

Standards: Common Core **Domain:** Operations and Algebraic Thinking **Standard #1** **Cluster:** Represent and solve problems involving addition and subtraction. **Standard #1:**	**Domain:** Operations and Algebraic Thinking **Standard #1** **Cluster:** Represent and solve problems involving addition and subtraction. **Standard #1:** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g. by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Summative Assessment	Students will be assessed based on written answers in a test. Summative Assessment attached. Students will demonstrate their ability to • Demonstrate addition by being able to count up and subtraction by being able to take away. • Demonstrate addition and subtraction using manipulatives, drawings, or written number sentences. • Demonstrate addition and subtraction within 20 by following a word story within unknowns in all positions.
Scoring for Summative Assessment	The summative assessment has a total of 30 points available. Accurately writing, drawing, or demonstrating 80% or better represents unit mastery (24 points of better). Answer key attached
Materials/Resources Needed	***So Many Cats!*** by Beatrice Schneck de Regniers, cat picture reproducible (12 for each student), Crayons, Felt board; felt board pieces - 12 cats, ***Saxon Math 1 Lesson 21*** and ***Lesson 49*** instructions; ***Saxon Math 1 Master 19-1***; ***Saxon Master 21***; ***Saxon Master 21 Chart***; ***Saxon 49-1*** student worksheet; unifix cubes; laminated numeral cards 1 through 12 – a set for each student and the teacher, *Domino worksheet*; dominos – a set for each student (or alternatively, a laminated set of dominos one for set for each student – this set can be found at Mathwire.com http://mathwire.com/numbersense/dominoes.html); graham crackers; peanut butter; jam; raisins; Addition Word Problem worksheet; **Rooster's Off to See the World** by Eric Carle; felt board pieces – 1 rooster, 2 cats, 3 frogs, 4 turtles, and 5 fish; chart paper and marker; Subtraction Word Problem worksheet; in-class computer with internet capability, computer projector, projector screen, computers with internet capability – at minimum one for every two students; 1st Grade Summative Assessment directions, ten-frame worksheet for the summative assessment; red and yellow counters; red and yellow crayon.

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

	Lesson 1 (Day 1)	Lesson 2 (Day 2)	Lesson 3 (Day 3)	Lesson 4 (Day 4)	Lesson 5 (Day 5)
Instruction and Timeline	Activate Prior Knowledge: Obtain from the Phoenix public library, ***So Many Cats!*** by Beatrice Schneck de Regniers. During Circle Time: Read through the story once showing pictures from the book. Tell the story again, but using felt board and pre-made cat felt pictures – add cats to the felt board	Practice addition concepts: play the game, "*Domino Fun*." Give each student a set of dominos (or a downloaded laminated set, which can be found at Mathwire.com http://mathwire.com/numbersense/dominoes.html). Using the shuffled stack of laminated numeral cards (numbered 1 through 12), draw one card and show it to the children. Ask the children	Introduction: Obtain from the Phoenix public library, ***Rooster's Off to See the World***, by Eric Carle. During Circle Time: Read through the story once showing pictures from the book. Tell the story again, but using felt board and pre-made animal felt pictures – at first, add	Introduce Lesson 49 in ***Saxon Math 1*** – Writing Subtraction Number Sentences. Begin the lesson by modeling subtraction: have 12 children line up at the front of the room. Ask: *"How many students were standing at the front of the room?" (12)* Have two students sit down. Ask: *"How many students were taken away? (2) How many*	Practice addition using computer math games. Using the in-class computer and projector, go to websites: http://www.ixl.com/math/grade-1/addition-facts-sums-to-18

	as the story is read. Solicit number sentences from the students and write these on the board as the story is read. Have the children return to their seats. Distribute 12 cat pictures for students to color and use in the story. After students have finished coloring, have students put their cats in a pile. Read through the story again and have the students model the addition of cats as the story progresses. Ask: What happened with the cats in the story? (*More were added.)* Who can tell me what addition means? (*Any variation of: Addition is the action of joining two or more sets.)* Introduce Lesson 21 in ***Saxon Math 1*** – Writing Addition Number Sentences. Use ***Saxon Math 1, Lesson 21*** instructions. Provide students with ***Saxon Master 19-1 and Master 21***. Use ***Saxon Master 21 Chart*** as indicated in the instructions. The students will model	to find different dominoes with this total number of dots. Asks students to put these dominos in front of them. Check each student's dominos to insure that each student has found all the dominos that will total the drawn number card. Independent Practice: Have the each student put their own stack of shuffled numeral cards face down (laminated cards 1 through 12) in front of them. Have each student turn over the top card of the stack. Have students find the dominos that represent this same total number of dots. Using the *Domino Fun* worksheet, ask students to draw the dots as shown and write the number sentence. Students should repeat the activity for five different numerals. For closure and fun: Draw one last numeral card. Have students make one domino that represents that numeral using graham crackers, peanut butter (or jam), and raisins. Independent Practice: Have the students complete the Addition Word Problem	animals to the felt board as the story is read; then, second, subtract animals from the felt board as the story is read. Finally, read the story through a third time, again adding felt animals and then subtracting felt animals as before. However, as each new set of animals is added (or subtracted), solicit number sentences from the students and write these on a chart pad as the story is read. For closure, ask: What happened with the animals in the story? (*At first more were added, and then they were subtracted until there was none)* Who can tell me what addition means? *(Any variation of: Addition is the action of joining two or more sets.)* Who can tell me what subtraction means? *(Any variation of: Subtraction is the action of taking apart sets.)*	*students are remaining? (10).* Write the number sentence for the demonstration on the board (12 – 2 = 10). Repeat using a different number of students. Emphasize the words "take away" and "remaining." Then, using ***Saxon Math 1, Lesson 49*** instructions, have the students complete the ***Saxon Master 49-1*** worksheet per the instructions. Students can answer the word problems using pictures, unifix cubes, or number sentences. as indicated in the instructions. Independent Practice: Have the students complete the Subtraction Word Problem worksheet. In this worksheet the children are asked to solve subtraction word problems by taking from and taking apart, with unknowns in all positions. The students are asked to draw the subtraction sentence. Practice one type of each problem with the students to insure students have understanding. For example: I blew up 8 balloons for my party. Two of them popped. How many balloons were left? *(Draw 8 balloons, cross out 2, and*	And http://www.ixl.com/math/grade-1/subtraction-facts-numbers-up-to-18 And http://www.ixl.com/math/grade-1/addition-word-problems-sums-to-18 And http://www.ixl.com/math/grade-1/subtraction-word-problems-numbers-up-to-18 Model how to use the programs using the in-class computer and computer projector. 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 their own

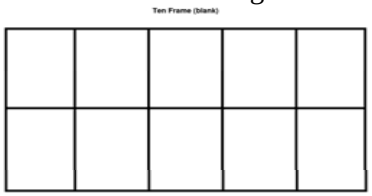
	addition problems using a large drawn apple and coloring in apple seeds on the left and right hand sides of the apple as directed by the ***Saxon*** teacher instructions. The students will then practice writing number sentences which goes with each drawn apple picture. Provide each student one crayon to draw the apple seeds. Note to the Teacher: This is the student's first encounter in first grade with addition using the Saxon textbook. The concept of addition will continue to be taught with increasing difficulty in Saxon Lessons 23, 27, 28, 30, 32, 34, 36, 37, 41, 58, 59, 61, 76, 77, 78, 79, 80, 94, 95, 105, 106, 111, and 115.	worksheet. In this worksheet the children are asked to solve addition word problems by adding to and putting together with unknowns in all positions. The students are asked to draw the addition sentence. Practice one type of each problem with the students to insure students have understanding. For example: Tom had 5 toy cars. His father gave him 3 more toy cars. How many toy cars does Tom have in all? (8) And for example: My sister gave me 3 pencils. Then my brother gave me some more pencils and then I had 5 pencils. How many pencils did my brother give me? (2) Have the students use unifix cubes to aid in symbolizing the numbers given, and to determine the unknown.	Independent Practice: Have the students practice subtraction problems by drawing pictures. Draw a large pocket on the board. Instruct the children to draw a pocket on their paper. Say: "Tom had 7 coins in his pocket. He lost some. How many did he lose? How many did he have left? Draw on your paper as many solutions as you can. Then write the number sentence that goes with each drawn picture." Show one solution on the board → a pocket drawn with five coins in the pocket and two coins out of the pocket. Then underneath, write 7 – 2 = 5. Allow the children to use unifix cubes to aid in this subtracting practice.	*then write the result of 6.*) And for example: Some cookies were in a jar. I took out 3 cookies and then the jar had 2 cookies. How cookies were in the jar to begin with? (*Draw a jar with 2 cookies inside of it and 3 cookies outside of it. And then write the result of 5.*) And another example: I had 6 toy trucks. I gave some to my brother and then I had 4 left. How many toy trucks did I give to my brother? (*Draw 6 trucks. Circle 4 of the trucks. And then write the result of 2.*) Have the students use unifix cubes to aid in symbolizing the numbers given, and to determine the unknown.	game. Summative Assessment: Have the students complete the Addition and Subtraction Word Problems summative assessment. Achievement of 80% represents mastery.

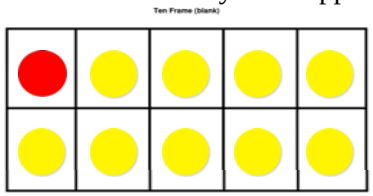
Student Activities and Timeline	Students will provide number sentences orally. Students will color cat pictures and then model the story, ***So Many Cats!*** by Beatrice Schneck de Regniers using their cat pictures. Students will respond orally to teacher prompted questions. Using ***Saxon Master 19-1, Saxon Master 21*** and a crayon, students will participate in demonstrating addition (adding one more and making addition fact families) and drawing seeds onto an apple picture to understand the concept of addition.	Students will practice writing addition sentences identified with their domino pieces. Students will make their own edible dominoes and subsequent addition sentences. Using the Addition Word Problem worksheet, students will practice addition word problems by drawing pictures to represent addition. In addition, students will practice word problems with math manipulatives (unifix cubes). Students will practice adding to and putting together with unknowns in all positions.	Students will provide number sentences orally during the reading of ***Rooster's Off to See the World***, by Eric Carle. Students will respond orally to teacher prompted questions. Students will practice drawing subtraction problems (pockets and coins) and writing subtraction sentences. Students can use unifix cubes in determining subtraction picture and written sentences.	Using ***Saxon Master 49-1,*** and unifix cubes, students will demonstrate subtraction (taking away students standing in a line) and / or by drawing a picture to represent the subtraction word problem. Using the Subtraction Word Problem worksheet, students will practice subtraction word problems by drawing pictures to represent subtraction. In addition, students will practice word problems with math manipulatives (unifix cubes). Students will practice taking from and taking apart with unknowns in all positions.	Students will answer addition and subtraction fact sentences and addition and subtraction word problems using the computer. Students will complete the Addition and Subtraction Word Problem Summative Assessment.

1st Grade Math Summative Assessment

1. *Materials: 9 Red and 9 yellow counters, paper with pre-printed multiple ten frames and counter number sentences, red and yellow colored pencils, pencil*
   Directions: Read aloud the number story to the students. Draw one example solution on the board and have the students do the same on their paper. Students will then record as many different solutions to the problem as they can using the ten frame template and the red and yellow colored pencils. The students may use the counters to aid in their determinations. In addition the student will write the corresponding number sentence. (16 points)

   NUMBER STORY: The grocer wanted to make a pack of ten apples with some red and some yellow apples.

   Ex:  ____ + ____ = 10

    __1__ + __9__ = 10

   (Write in the correct numbers)

   (Color on the board)

2. *Materials: Unifix cubes, paper, pencil.*
   Directions: Read aloud the number story to the students. For each of the situations have the students add to, take from, put together, or take apart by using the unifix cubes, drawings (on a separate sheet of paper), or number equations (on a separate sheet of paper). After each number story is read, review each student's response and record 2 point for each correct depiction. (14 points total)

   a. I frosted 6 cupcakes with chocolate frosting and 6 cupcakes with vanilla frosting for my sister's birthday party. How many cupcakes did I frost in all?
   b. Three pigs rolled in the mud. Some more pigs came to roll in the mud and then there were 14 pigs rolling in the mud. How many more pigs came to roll in the mud?
   c. A bowl had some apples in it. I put in 2 more and then there were 9 apples in the bowl. How many apples were in the bowl to begin with?
   d. Mr. Steve went fishing on the weekend. He caught 12 trout and 4 bass. How many fish did he catch in all?
   e. Fourteen birds were in a tree. Two birds flew away. How many birds were left in the tree?
   f. A plate had some cookies on it. I ate 3 cookies and then there were 5 cookies left on the plate. How many cookies were in the plate to begin with?
   g. Thirteen children played outside in the snow. Some got cold and came inside the school building and 8 children continued to play outside. How many children went inside the school building?

1st Grade Math Summative Assessment Answer Key

1. Each answer has a ten frame answer (1 point) and a counter number sentence (1 point). There are 8 solutions (for a total of 16 points) (in addition to the teacher example): **2R, 8Y**; 3R, 7Y; **4R, 6Y**; 5R, 5Y; **6R, 4Y**; 7R, 3Y; **8R, 2Y**; 9R, 1Y

2. Each answer is worth 2 points. Students may demonstrate their answer with either a picture, with manipulatives, or with a number sentence.

   a. 12
   b. 11
   c. 7
   d. 16
   e. 12
   f. 8
   g. 5

Grading for 1st Grade Math: The summative assessment has a total of 30 points. Mastery is 80% and above (24 points or greater)

Grade	Number of Answers correct
A	27 - 30
B	24 - 26
C	21 - 25
D	18 - 20
F	17 and below