

Count Me Smart ®

Teachers' Lesson Plans for

“One Plus One Equals Fun”

Addition Chapters One to Sixteen

August 15, 2001

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<i>Addition Chapters</i>	Projected # weeks	Purpose of Chapter
1.) Adding on one to single digit numbers	Two	To learn to automatically add on one to a target number instead of having to count from one through a target number in order to add one to it.
2.) Adding on one or zero to single digit numbers	One	To learn the difference between adding zero to a number and adding on one.
3.) Reading, writing, and conceptualizing 2 digits Part 1	Two	To learn the concept of a two-digit number before learning to use the standard algorithm for adding multi-digit numbers. After learning standard multi-digit addition and how to solve word problems, students build proficiency while learning addition facts.
4.) Reading, writing, and conceptualizing 2 digits Part 2	Two	
5.) Two-digit addition with re-grouping	Two	To learn the concept behind “carrying” before learning the standard algorithm for addition.
6.) Building the base of limited facts – Part one	Two	The facts of $7+7$, $7+8$, $8+7$, and $8+8$ are the first facts “memorized” by students. They are used in the standard addition algorithm without carrying.
7.) Building the base of limited facts – Part two	Two	The limited facts are used for both computation and word problems that require carrying.
8.) Adding ten to any number	Two	Students are taught eight “facts” by the simple concept of adding ten to any number.
9.) Even two’s	Two	The even 2’s can be used in the standard multi-digit addition algorithm with or without carrying.
10.) Odd two’s	Two	The odd 2’s take a bit longer to learn than even 2’s. Students learn 5 more “facts” within a week.
11.) Adding nine to any number	Two	Students learn 8 more new facts with the adding on nine rule, based on a slight modification to the retrieval rule, “adding 10 to any number.”
12.) Doubles addition	Two	Students learn “doubles” easier than other facts.
13.) Doubles plus one addition	Three	The “doubles plus one” retrieval rule builds upon the previously learned “doubles” retrieval rule.
14.) Remaining facts of three	Two	There is no simple retrieval rule for the remaining facts of three, four, or the last facts. There are only ten of them. Students don’t have much trouble learning these facts, when they are taught a few at a time, and are given several weeks to become proficient.
15.) Remaining facts of four	Two	
16.) The Last facts	Two	

Chapter One

Adding on One to a Single Digit Number**Overview for the Teacher:**

- **Prerequisites:** Students should be able to read and write their numbers from 1 to 9.
- **Purpose:** Acquire proficiency in adding one to single digit numbers. Students will learn how to respond to both the visual and verbal prompts of the algorithms of the type: “ $6+1=$ ” and eventually “ $1+6=$.” Students will acquire fluency in saying what number comes after a given number, without having to count from 1 through the given number.
- **Timeline:**

Day 1: Students will learn how to read flashcards and how to answer them. The flashcards will have the larger number on top and the 1 on the bottom

$$\begin{array}{r} 8 \\ +1 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ +1 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ +1 \\ \hline \end{array}$$

Day 2: Students review the concept of adding on and develop fluency in reading and responding to flashcards. Students begin to work with flashcards where the 1 can also appear in the top position.

$$\begin{array}{r} 1 \\ +3 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ +5 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ +9 \\ \hline \end{array}$$

Day 3 -5: Students will become proficient adding on by one through seatwork and homework assignments.

Please be sure that all students have a firm grasp of “counting on by one” before moving on to Chapter Two. The “accelerated” lessons listed in the final section entitled “Meeting Individual Needs” are recommended to keep the interest of students who have already grasped the basic concepts. Some students take a week or two to grasp the differences and similarities between $1+7$ and $7+1$.

The concepts taught in the four introductory conceptualizations are key, and each may need to be repeated several days in a row. It is better to spend four separate fifteen-minute sessions than to spend one hour working on the same concept.

- **Objectives:**

- 1.) Students will correctly read and solve flashcards that require adding one to a single digit number.
- 2.) Students will become fluent in answering oral problems requiring adding one to a single digit number.
- 3.) **WHEN GIVEN A PROMPT OF A SINGLE DIGIT NUMBER SUCH AS “FIVE,” STUDENTS WILL STATE THAT THE NEXT NUMBER IS “SIX” WITHOUT HAVING TO GO BACK AND START COUNTING AT “ONE.”**

- **Lesson Support Materials:**

- 1.) Each student in the classroom will need a pencil, paper, a bowl and a set of 10 manipulative chips. If possible, 9 should be of one color and the 10th of a different color.
- 2.) A set of chips that are semi-translucent that shows up on the overhead projector as different colors.
- 3.) One set of overhead flashcards of adding on one facts of 1+1 through 9+1. The cards should be sorted so that the cards with the 1's on the bottom are separated from the cards with the 1's on top. One set should have cards such as:

$$\begin{array}{r} 1 \\ +1 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ +1 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ +1 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ +1 \\ \hline \end{array}$$

- 4.) The other set should have cards such as:

$$\begin{array}{r} 1 \\ +2 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ +7 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ +3 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ +9 \\ \hline \end{array}$$

- 5.) For each student in the class, one set of flashcards of adding on one facts of 1+1 through 9+1. The cards should be sorted so that the cards with the ones on the bottom are separated from the cards with the ones on top.

- **Directions for Handouts:**

Once students have been introduced to the concept of flashcards depicting adding on by one, they should be assigned one computation worksheet to be completed during class time. Unless specifically noted in a lesson plan, it is best if the seatwork is done at a time other than math. For homework, students should be given one computation worksheet and possibly one word problem worksheet.

The word problems may contain words that may be too difficult for many students to read. If done as classwork, the teacher should put them on an overhead so that students can better understand what they need to do. If sent home for homework, word problem worksheets may require a parent, guardian, baby-sitter, or older sibling to read the words and write answers. At an Open House or some other gathering of parents, the teacher will need to model how a parent can help a child read the problem and write the answer without stepping in to consciously or unconsciously solve the problem for the child. The parent needs to be a resource not the person doing the homework.

Objectives Chapter 1: Adding on One to a Single-Digit Number.

- Although a number line can be an effective teaching device, the student should not be using it when he or she is being “tested” to prove mastery of the below listed skills.
 - The student must be able to complete all of the below skills at 95% to 100% accuracy. *The goal is for a student to be able to count from 1 to 20 at a slow speed every single time s/he is asked to count from 1 to 20. A standard of 95% accuracy doesn’t mean that students can consistently skip saying “twelve” every single time they are counting from 1 to 20.*
- The student will demonstrate mastery of Adding on one to a Single-Digit Number within the context of off-grade proficiency test skills: graphing, time, money, calendar, measurement, etc.
 - The student will count from 1 to 20 at a slow speed.
 - The student will count down from 20 to 0 at a slow speed.
 - The student will start counting up to 10 from any single-digit number without having to start at 1. If the teacher says, “7” the student will count “7, 8, 9, 10” without having to first say “1, 2, 3, 4, 5, 6.
 - The student will count down to 0 from any single-digit number without having to start at 10. If the teacher says, “7”, the student will count down, “7, 6, 5, 4, 3, 2, 1, 0” without first having to say “10, 9, 8, 7”.
 - The student will write all of the single-digit numbers in order from 1 to 10 AND down from 10 to 0.
 - When given an oral prompt of a single-digit number out of order, a student will be able to write down the number. When the teacher says, “seven” the student will write down, “7”.
 - When given a visual prompt of a single-digit number out of order, a student will be able to say that number. When the teacher shows a student the number “7,” the student will say “seven.”
 - A student will learn the facts of Adding One to a Single-Digit Number: 0+1, 1+1, 2+1, 3+1, 4+1, 5+1, 6+1, 7+1, 8+1, and 9+1, and their inverses of 1+0, 1+1, 1+2, 1+3, 1+4, 1+5, 1+6, 1+7, 1+8, and 1+9.
 - When shown a flashcard of adding one to a single-digit number, the student will give the answer quickly, accurately, and without having to count from 1. Students must be capable of responding accurately to flashcards with the 1 on top and on the bottom. For example:

$\begin{array}{r} 8 \\ +1 \end{array}$	$\begin{array}{r} 1 \\ +8 \end{array}$	$\begin{array}{r} 7 \\ +1 \end{array}$	$\begin{array}{r} 1 \\ +7 \end{array}$
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 - The student will give the correct answer to an Adding One fact when it is presented orally. When asked, “What is six plus one?” The student will respond, “seven.”
 - When given an adding on 1 worksheet, the student will complete the worksheet in less than three minutes without making more than 2 errors (95% accuracy).
 - The student will correctly solve five out of six word problems by setting up a computation algorithm and computing the answer.

Daily Lesson Plan Overview for Chapter One—Adding 1

The exact timing of any given daily lesson plan and/or the overall sequence of the daily lesson plans within this Chapter are merely estimates and suggestions. Teachers must ensure students master and become fluent with Count Me Smart Chapter objectives before moving on to the next Chapter.

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	<p>Count Me Smart Day One</p> <ol style="list-style-type: none"> 1) Use students to physically represent counting on by 1. 2) Have students use chips to represent adding-on-one flashcard facts. 3) Have students pair up to use flashcards to practice adding on one facts. 4) Have students write down answers to oral flashcards. 5) Assign and monitor adding on one computation worksheet. 	<p>Count Me Smart Day Two</p> <ol style="list-style-type: none"> 1) Use overhead chips to represent the concept of counting on. 2) Have students form groups and to compare and contrast $7+1$ and $1+7$. 3) Have students practice adding on one flashcards. 4) Assign and monitor adding on one computation worksheets. 	<p>Count Me Smart Day Three</p> <ol style="list-style-type: none"> 1) Have students orally practice counting on one from a given number. 2) Have pairs of students practice counting from 1 to 10 and from 10 to 1. 3) Have pairs of students practice adding on one flashcards. 4) Assign and monitor adding on one computation worksheet. 	<p>Count Me Smart Day Four</p> <ol style="list-style-type: none"> 1) Slight variation of counting on one from a given number. 2) Have pairs of students practice counting from 1 to 10 and from 10 to 1. 3) Have pairs of students practice adding on one flashcards. 4) Assign and monitor adding on one computation worksheet. 	<p>Count Me Smart Day Five</p> <ol style="list-style-type: none"> 1) Have students practice mental math, acceleration, and remediation activities for counting by one. 2) Have pairs of students practice counting from 1 to 10 and from 10 to 1. 3) Have pairs of students practice adding on one flashcards. 4) Assign and monitor adding on one computation worksheet.
Week 2	<p>Proficiency Exam lesson: Calendar as part of patterning and routine.</p> <ol style="list-style-type: none"> A. Mimosa--Chapter 1. B. Math Advantage -Chapter 9. C. Every Day Counts. pages 91-92 <i>Count Me Smart</i> <p>A. Patterning and Grouping. One bigger. Mimosa Chapter 1.</p> <p>Count Me Smart Fluency</p> <ol style="list-style-type: none"> 1) <i>CMS</i> Computation worksheet 2) <i>CMS</i> Mental Math 	<p>Proficiency Exam Lesson: Shapes as part of routine.</p> <ol style="list-style-type: none"> A. Math Advantage 18.1 plane shapes. B. Mimosa: Chapter 14. C. Tangrams, Geoboards. <p>Writing stories in Mimosa 1.3</p> <p>Count Me Smart Fluency</p> <ol style="list-style-type: none"> 1) <i>CMS</i> Computation worksheet 2) <i>CMS</i> Word problem worksheet completed and discussed in class 	<p>Proficiency Exam Lesson: Ordinal Number support for CMS Chapter One</p> <ol style="list-style-type: none"> A. <i>Math Advantage</i> Chapter 5.4 B. <i>Mimosa</i> Chapter 1.5 <p>Money with Mimosa. Page 50. Ordinal numbers Mimosa 1.5</p> <p>Count Me Smart Fluency</p> <ol style="list-style-type: none"> 1) <i>CMS</i> Mental Math 2) <i>CMS</i> Computation worksheet 	<p>Count Me Smart Teacher Demonstration of how students can log onto the computer.</p> <p>Counting from 1 to 100. Days of Week. Months of the year.</p> <p>Count Me Smart Fluency</p> <ol style="list-style-type: none"> 1) <i>CMS</i> Computation worksheet 2) <i>CMS</i> Word problem worksheet 	<p>Lesson Related to CMS theme: Counting by Tens Mimosa pages 163-164</p> <p>Science: Shadows kit.</p> <p>Count Me Smart Fluency</p> <ol style="list-style-type: none"> 1) <i>CMS</i> Mental Math 2) <i>CMS</i> Computation worksheet

Instructions for the teacher:

DAY ONE

- **Introductory Conceptualization:**

Call 1 student to come up to the front of the room. Ask the class to chorally respond to how many students are up front. Once the students answer, ask another student to come up. Then ask the students how many are up front.

Develop a pattern of asking a student to come up and getting a response as to how many are up, and then asking a student to sit down and asking how many are up now.

[Insert Graphic #Two].

The numerical pattern might be something like: 6, 7, 8, 7, 6, 5, 4, 5, 4, 3, 2, 3, 2, 1, 2, 3, 2, 3, 4, 5, 4, 5, 6, 5, 6, 7, 8, 7, 8, 9, 10.

The exact order doesn't matter, just get kids moving up and down and quickly answering the question of how many are up front.

After counting for a while, ask all of the students to sit down, then call up six students at the same time, and have them start counting from six.

- **Teaching and Practice:**

- 1.) Give all the students a bowl and 10 manipulative chips. If possible, 9 should be of one color and the 10th a different color. Ask students to keep the chips they aren't using in the bowl. Or, you can have students keep the chips they aren't using on the side, and then move the chips they are using onto a mat, a piece of paper, or a piece of paper with a circle or box drawn on it.
- 2.) Display an overhead flashcard on the screen. Ask the students to use their chips to represent the flashcard. For the problem:

$$\begin{array}{r} 7 \\ +1 \\ \hline \end{array}$$

- 3.) The students should put 7 chips of one color above the chip of the other color.
- 4.) Ask the students to then "read" the problem, "Seven plus one equals eight."
- 5.) Check to ensure the students are setting up the problem correctly each time.
- 6.) Go through the flashcards in a random fashion.
- 7.) Pair up the students and have them quiz each other. One should be asking questions such as, "What is seven plus one?" The other should respond with "Seven plus one equals eight."
- 8.) After several minutes, have the pair switch roles.
- 9.) Allow students to use the manipulatives, but encourage them to discontinue as soon as possible.

ADDITION CHAPTER ONE

Adding on 1 to Single Digit Numbers

- 10.) Now ask the students to put away the chips, and go through the flashcards with students giving choral responses.
- 11.) Finally, have the students get out a pencil and a piece of paper. The students should now write down the responses to the flashcards. One way of doing this is to have the students write the answers straight down the left margin. For example:

Name: Date:

	7
	8
	3
	2
	5
	10

- **Assignment:**

- 1.) For seatwork, assign one computation worksheet: “Adding-on 1 to a single-digit number.”
- 2.) For homework, assign one computation worksheet and one word problem: “Adding-on 1 to a single-digit number.”

DAY TWO

- **Introductory Conceptualization:**

Ask the students to practice counting chorally from one to ten several times. Then have them count from 10 to 1 several times.

Put a set of overhead chips on the overhead. Ask the students to count the chips as you move them one by one into view. Have them count very slowly. Many students are used to counting up to 10 real fast, but don't really know that the number after five is six. The idea is to get the students beyond the rote response to actually thinking about what they are doing when they are counting.

Then vary the pace of moving the chips. Move a few chips in a row fast, and then move some slowly.

- **Teaching and Practice:**

- 1.) Give out 10 manipulative chips to each student—with one chip being a different color.
- 2.) Group the students into fours.
- 3.) Show the overhead flashcards of:

$$\begin{array}{r} 7 \\ +1 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ +7 \\ \hline \end{array}$$

- 4.) Ask the students to use the chips and come up with a reasonable explanation for why or why not the two problems are the same. Tell them they must be prepared to defend their answers.
- 5.) Have one individual from each group give a defense of their explanation. Once the answers start sounding the same, then change the flashcards to other problems such as $8+1$ and $1+8$.
- 6.) Pair the students up and have them test each other on the 1's flashcards—with the 1 sometimes on the top and sometimes on the bottom.
- 7.) Check to make sure all students are doing well with the flashcards.
- 8.) Give each student one computation worksheet.

DAY THREE

- **Introductory conceptualization:**

Make up a set of overhead numbers from 1 through 10. First, have the students go through the cards in the regular fashion of 1 to 10.

Next, mix up the flashcards, place one on the overhead, and then have the students read the number chorally. Go through the mixed up cards twice. Be sure to go slowly, and to indicate that you aren't having students "count," but just want them to identify the numbers on the cards.

For the second part, have the class chorally answer the number on the flashcard, and the number that would follow it. Thus, if you put up six, the students should call out, "six, seven!" After everyone seems to have gotten the idea, call on individual students to answer.

In future lessons, have students give the number that comes before the number shown. If you display the number six, the students should call out, "six, five!"

- **Teaching and practice:**

- 1.) Pair up students:

- a.) Have the pairs practice counting from one to ten and back down.

- b.) Have the pairs go through the adding on one flashcards.

- 2.) Assign the students seatwork, and check to see how well they are doing.

- **Assignment:**

- 1.) For seatwork, assign one computation worksheet: adding on one to single digit numbers.

- 2.) For homework, assign one computation worksheet and one word problem worksheet: adding on one to single digit numbers.

DAY FOUR, FIVE, and possibly beyond

- **Introductory Conceptualization:**

This is an oral version of yesterday's overhead conceptualization.

Have the students warm-up by counting chorally from one to ten. Model how to count on by one when given a specific number. Say a single digit number such as 3 and then ask, "What number comes next?" Immediately respond with the answer, "4!"

Do this several times, and then start motioning for the whole class to get involved by giving the response on a pointing cue. Once all the students are involved, drop the questioning and just have the students respond to the cue.

Finally, explain that you now want individual students to respond. Say a number, and then point at an individual student. If another student answers, admonish him, and give the called upon student another chance.

If too many students are counting out the answer and taking too long, go back to getting choral responses.

- **Teaching and practice:**

1.) **Work on the mental math, remedial, and accelerated lessons to ensure all students have grasped the concept of adding one to a number. It is important to realize that you must be willing to individualize these lessons. Five days is just a suggested amount of time to complete this Chapter. Students may need far longer to gain a real sense of counting and adding on by one. Many students will count the answer to $7 + 1$ by starting out with 1, and then counting through 7 and then adding on the one to get to 8.**

2.) Pair up the students:

- a.) Have them practice counting from one to ten and back down.
- b.) Have them go through the adding on one flashcards.

3.) Monitor seatwork and homework to ensure all students are automatically adding on one to single digit numbers.

4.) Teach other math concepts such as time, graphing, and money.

- **Assignment:**

1.) For seatwork, assign one computation worksheet: adding on one to single digit numbers.

2.) For homework, assign one computation worksheet and one word problem worksheet: adding on one to single digit numbers.

Meeting Individual Needs:

- **A Break in the Action:**

To give students a break in the middle of a three or four part lesson, you can have them play "the running game."

While the students are seated, have them practice counting down from twenty. Then explain that in a few moments they will once again count down from twenty, but this time they will be allowed to run in place, jump up and down, do jumping jacks, etc., until they reach zero. Once they reach zero, they will all be expected to be quietly sitting in their seats with their hands folded.

- **Mental math:**

In spare moments, before going to lunch, gym, or some other subject, have the class as a whole work on counting down from ten, and give numbers that come after a given prompted number. Each time, call on individual students to add on one to various numbers. Be sure to pick students of differing abilities levels to get a sense of how well the class is doing.

Acceleration:

- 1.) Have students who easily grasp the concept of "adding on one" also give answers for the single-digit number that would come BEFORE the prompt number. When you say "four," have the accelerated students respond with "five" and "three." *At some point, all students in the class should be required to understand the concepts of "subtracting one" and "adding and subtracting ten".*
- 2.) Have students write their own word problems that involve adding on one to another number.

- **Remediation:**

- 1.) Ask students who are having difficulties to bring in 10 small collectible toys of the same type: a set of miniature cars, dolls, plastic dinosaurs, or stuffed animals. Put a pile of 1 to 9 toys in front of the student. Ask the student to count the number of toys. Add another toy with a lot of hocus-pocus hand movements. Encourage the student to give an immediate response of having added on one.

For example, put 6 dolls in a pile. Have the student count the number of dolls as the student lines them up. After the student says "six," you dramatically add a seventh. Immediately, the student should respond, "seven!" Many students will want to go back and count the six dolls all over again, and then say seven. Humor the student and allow this a few times, but gradually wean the student from the habit. This may take several days of short sessions. If you don't take the time now, the student might never grasp the conceptual aspects of addition.

- 2.) Sit across the table from an individual or small group. Use a set of chips, Unix Cubes®, or some other markers, and slowly go through counting from one to ten and back down again. Be sure that students can follow patterns of going up and

down the scale such as: 1, 2, 3, 4, 3, 2, 3, 4, 5, 4, 5, 6, 7, 6, 5, 4, 5, 6, 7, 8, 7, 8, 7, 8, 9, 8, 7, 8, 9.

- a.) Have a group of students work with each other while you are supervising them. It is usually best not to leave students who are having a hard time grasping a concept by themselves, or with a peer tutor, as they may learn the concept incorrectly.
 - 3.) Work on any of the other introductory conceptualizations in a small group.
- **Assessment:**
 - 1.) Have students fold a piece of paper into 8 sections and write their name on it. Read off a list of 8 single digit numbers and have the students write down the number in one of the sections, and the number that follows it by one.
 - 2.) Have the students turn the paper over. Slowly put up all but one of the overhead flashcards. Have the students write down the answer
 - 3.) Students will complete a computation worksheet of adding one to single digit numbers with 90% accuracy.
 - 4.) Students should be completing a computation worksheet in less than 7 minutes by the end of this lesson sequence.

Related Lessons:

- 1.) There are no specific chapters that precede this one, but students must have mastered counting, and the reading and writing of single digit numbers.