SEMPLE MATH FOR OLDER STUDENTS
Addendum to Level I

Semple Math is an alternative basic skills mathematics program designed primarily for students who have difficulty learning. Therefore, the teaching strategies differ from those used in a traditional, rote-level approach. The special mnemonic strategies require all students to begin at the beginning and progress sequentially through the program. Both strategies and sequence are vital to setting the stage for higher level learning.

Older disabled students who have failed to achieve the basics of mathematics often object to starting at the beginning in Semple Math. They have worked so hard and accomplished so little that they find it frustrating and depressing to have to repeat what they feel they already know, or worse, to fail again what they do not know.

These older students frequently still count fingers, manipulatives or dots to retrieve answers to facts. Word problems, long multiplication, long division, place value and the abstract language of mathematics continue to trouble them. Older disabled students, in spite of years of struggling, have failed to internalize even the rudiments of the Base 10 number system.

While it may be true that older students have learned some beginning level skills, there are many more beginning skills they have not learned. And, they have learned none of the mnemonic associations connected with either group of skills. The associations are needed to enhance memory and promote understanding of concepts. Associations also help to create a filing system in memory for storing new information and building higher level skills. In order to progress successfully in Semple Math, students need to establish a firm mnemonic base from which to grow.

This addendum is designed to help teachers consolidate the first seventeen lessons in the program so that older students can form the necessary foundation in a more sophisticated way. Most middle and high school math disabled students can manage this quicker pace at the beginning. However, some severely disabled older students cannot progress at the speed required by the condensed version presented here. These students should complete the first seventeen lessons in the Level I Teacher's Manual and the activities in Level I Workbook A one lesson at a time. If your students succeed with the two lessons described below, continue the program by introducing Lesson 18 in the Level I Teacher's Manual. Begin these students with Level I Workbook B. From Lesson 18 on, <u>all</u> students progress one lesson at a time.

LESSON 1: Combining Level I Lessons 1-14

OBJECTIVES: The student will spot, name, symbolize, visualize, print, sequence, count, interpret, order, picture and internalize numbers 1-6.

MATERIALS: Level I Semple Math Cards 1-19
Copy of Appendix A for each student

TEACHING ACTIVITY:

Part 1: Spotting and Naming Numbers 1-6

Shuffle together Level I Semple Math Cards 1, 2, 3, 10, 13 and 17. Quickly flash one card at a time and ask, "How many?" Do not give students time to count the dots on the cards. Flash each card for a split second only. Demand an immediate answer. If your older students have difficulty spotting and naming any number 1-6, discard the addendum and teach the first 17 lessons in the Semple Math Level I Teacher's Manual.

Part 2: Spotting, Naming and Counting 1-6

Play a board game with your students. Check to see that each student can roll a die, spot and name the number of dots and move the correct number of spaces on a game board. Of particular importance is knowing where to begin the counting. Students should not count the space their marker is on. They should begin the counting on the next space. If your students have difficulty with this task eliminate the addendum and teach the first seventeen lessons in the Semple Math Level I Teacher's Manual. Your students need the first seventeen lessons of the program.

Part 3: Symbolizing and Visualizing 1-6

Shuffle together Level I Semple Math Cards 4, 5, 6, 11, 14 and 18. Flash one card at a time and ask, "How many?" Insist that students answer quickly. Combine and shuffle cards 1, 2, 3, 4, 5, 6, 10, 11, 13, 14, 17 and 18. Flash one card at a time and ask, "How many?" Students should be able to answer correctly after a split second exposure. If they cannot, do not continue with the addendum. Instead, teach the first seventeen lessons of the program.

Print several sets of numerals 1, 2, 3, 4 on the chalkboard. Be sure to form each numeral like those in Figure 1.1.

Figure 1.1

Let students draw the dots on the numerals in the correct places. Insist on spatial accuracy. (See Figure 1.2.) If students have difficulty with this task eliminate the addendum and teach the first 17 lessons.

Figure 1.2

Part 4: Sequencing, Ordering and Printing 1-6

Erase the chalkboard. Shuffle and flash Level I Semple Math Cards 1-19. Ask, "How many?" after each split second exposure. You should get 100% accuracy. Instruct students to print numbers 1-6 on paper at their desks. Students should have no difficulty with this task. Call out numbers 0-5 randomly and ask, "I want one more, who's next?" Students should be able to name the next number easily.

Part 5: Visualizing Numbers 1-6

Duplicate Figure 1.3 on the chalkboard.

Figure 1.3

Let students draw the dot configurations for numbers 1-4 in the blank squares. Their drawings should resemble Figure 1.4.

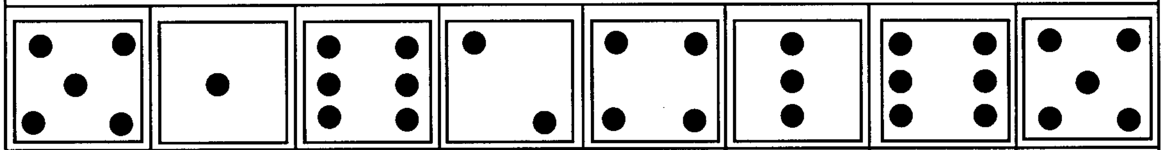
Figure 1.4

Give each student a copy of Appendix A from the addendum. Read the directions with your students - one activity at a time. Encourage students to move quickly, but insist on total accuracy. Of particular importance is the ability to draw the dots on numerals 1-4.

RATIONALE: The skills emphasized in this lesson provide students with the ability to picture "number-ness." Your students will use this ability throughout the Semple Math Program to understand and work with higher level concepts.

Appendix A

Spot, name and print the numeral.



Draw the dots on each numeral.

2	3	4	1	4	2	3	1

Draw the dots on each numeral.

4 1 3 2 3 4 2 1 3 2 4 1 2 3 1 4 2

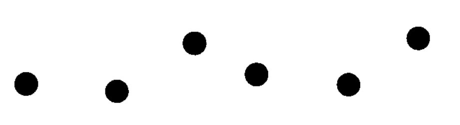
Print numbers one - six in the boxes.

I want one more, who's next?

5	2	3	1	5	3	4	1	2	3	4	2	1	5	4	3

Draw 1- 4 dots on white squares.

Count and record the amount.



Read and draw items.

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LESSON 2: Combining Level I Lessons 15-16

OBJECTIVES: The student will spot, name, symbolize, visualize, print, sequence, count, interpret, order, and internalize numbers 7-10.

MATERIALS: Level I Semple Math Cards 1-33
Appendices D, G, and H from the Level I Teachers' Manual

TEACHING ACTIVITY:

Part1: Preparing the Older Student

Read and discuss the following with your students:

> One of the ways we can make our brains remember something is to connect what we want to remember with a mental image. To remember the shape of Italy, for example, we form an image of a boot in our minds. Once we make that connection we will not forget it. When someone asks you "What's the shape of Italy?" you cannot stop your brain from thinking of a boot. Try it. I want you to think of the shape of Italy. Don't think of a boot!

Continue the monologue.

> We are going to use this picture-making process in our brains to learn math. From now on when you are given a math problem to do, pictures will tell you the answers. You will never have to count on your fingers again. Your brain will automatically remember. Math will be easy and fun.

Continue to inform your students.

> Now, brace yourself. Some of the pictures we are going to make in our brains will be crazy. Some will be silly. Others will be real dumb! But, do you know what researchers have found? The crazier and the sillier and the dumber the pictures are, the easier they are to remember!
>
> The first pictures I want you to make in your minds are rather silly. I want you to think of numbers 0-9 as people. We are going to concentrate on numbers 7, 8 and 9 right now. Picture the number 7 as a guy with one arm. Stick your arm out just like 7. Have you got the picture? Who's the guy with one arm? (Seven!)

Think of number 8 as a snowman with two fat bellies. He has two bellies and two belly buttons! Can you see him in your mind? Who's the snowman with 2 belly buttons? (Eight!)

Number 9 is the guy with one leg. He has a round face and one leg! Can you picture him? Who's the guy with one leg? (Nine!)

You have learned to "spot" numbers 1-6 on cards and on dice. We are now going to learn to spot numbers 7-10. Get ready to use pictures to answer my questions.

Part 2: Spotting and Naming Numbers 7-10
Computing Four Facts

Place Level I Semple Math Cards in the following order: Cards 20, 26, 30, 21, 24, 27, 31, 22, 25, 28, 32, 23, 29, 33. Beginning with Card 20, expose one card at a time in the above sequence as you engage students in the dialogue below. Insist that students give the answer (shown in parentheses) to each question.

STIMULUS	TEACHER	STUDENT
Card 20	How many? One what?	(A six and a one.) (One dot.)
Card 26	Who's the guy with <u>one</u> arm who likes to hang on <u>one</u> dot?	(Seven.)
Card 30	How many are a six and a one?	(Seven.)
Card 21	How many? Two what?	(A six and a two.) (Two dots.)
Card 24	I am going to move these two dots to make two belly buttons. How many? Two what?	(A six and a two.) (Two belly buttons.)
Card 27	Who's the guy with two belly buttons that likes to hang on?	(The snowman! Eight.)
Card 31	How many are a six and a two?	(Eight.)
Card 22	How many? Three what? I am going to move these three dots to make a face.	(A six and a three.) (Three dots.)
Card 25	How many? Can you see this guy's face? He has two eyes and a mouth. His name is Old No Nose! He's magic. He can breathe without a nose and walk on one leg!	(A six and a three.)
Card 28	How many are a six and a three?	(Old No Nose! Nine.)
Card 32	How many are a six and a three?	(Nine.)
Card 23	How many? Four what?	(A six and a four.) (Four dots.)
Card 29	Suppose I tie these four dots together. What number do I make?	(Ten.)
Card 33	How many are a six and a four?	(Ten.)

Part 3: The Puzzles (From the Manual)

Make 4 copies of Appendix D and one copy each of Appendices G and H from the Level I Teacher's Manual. Cut out the squares on Appendix G and the numerals on Appendix H. Let the student put the puzzles together so that they resemble Figure 2.1.

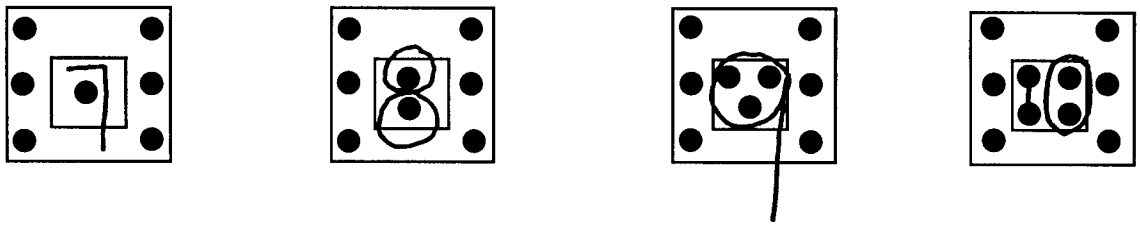

Figure 2.1

NOTE TO THE TEACHER:

You will notice that Lessons 4, 8, 11, 14 and 17 in the Level I Teacher's Manual have been eliminated in this condensed version of Lessons 1-17. In these five lessons, students are instructed on how to print numerals 1-10. Older disabled students usually do not need this instruction. If, however, one or more of your older students reverses numbers or confuses numeral shapes, you should teach these lessons. You will have to be the judge of whether or not they are needed.

RATIONALE:

In this lesson you are teaching your older students to picture "number-ness". They can easily form a mental image of one, two, . . . six dots on a die. Now they can combine one to six dots in such a way that they can picture seven, eight, nine and ten. The concept of eight-ness or seven-ness etc., can be pictured. It is no longer abstract. It is concrete.

Appendix B