Till they can as readily subtract as they can add, the process of subtracting may be gone over on slates or on the blackboard as under:

46	46
5	8
41	38
7	7
34	31
9	2
25	29
4	4
21	25
4	4
17	21
2	9
15	12
7	7
8	5
8	5
0	0

Explain how reversely the processes of adding and subtracting correspond.

Every step of every process has its answer; and as we train, we are training children to make every step, every result correct, whether in adding, subtracting, multiplying, or dividing; and to repeat, understandingly, the different steps of the operation till they are able to go over them with correctness, and with a degree of mastering skill. No process should be passed leaving any part in SHADE; and the *place* of every figure in a sum or process should be understood; and how and why each figure, as used, gives certain demonstrative results.

Many may consider it unnecessary to so repeatedly insist on thoroughness and skill at every step of a pupil's advance. But experience, and, I think, common sense, are altogether in favour of both. Ask the man of business, the clerk in the counting house, or even the scholar, troubled and annoyed by his blunders,—not well knowing whether to blame the book or the teacher, the puzzling nature of a question, his own liability to error, his want of sufficient capacity to comprehend, or of sufficient insight into the various steps of a process,—taking each in its proper place,—the difficulties and troubles, waste of time, of thought and mental effort, mistakes in computations are the cause of.

Let us now proceed to another stage of training. The principle of subtraction has already been explained and illustrated, and sufficiently, I think, to prepare your pupils to more extended and complex process-forms.

In beginning to teach a new rule, or work by new principles, be sure to adopt the simplest principles of graduation.

Subtraction.

1. Give examples requiring no borrowing;
2. Then examples requiring continued borrowing to the last figure or figures;
3. Then examples including both;
4. And until the subtractive principle is well understood, often lead them through processes analytically.

Example in which no borrowing is required.

34,768,954,236
12,515,413,224

22,253,541,012 dif.

The process of this example is plain enough; still there may be some things about it not well understood; and, therefore, there must be questioning.—Quest. Which line of figures is to be made less? How much less?—How many are to be taken from the ones, the tens, the hundreds, the thousands, &c. Read the answer—giving each figure its relative value. What would you subtract from the answer to leave nothing? &c.

2. Example.

80,000,000
20,000,000

60,000,000 dif.

From 60,000,000 subtract in succession 30,000,000, 20,000,000, and 10,000,000; tell the remainder?

60,000,000
30,000,000

30,000,000
20,000,000

10,000,000
10,000,000

Make 9876, less by 3214, 2531, 4111—what number remains?

9876
3214

6662
2531

4131
4111

20 remains.

Till the principle of subtraction in *borrowing*, (as it is learned), is well understood, illustrate much by analysis, as follows:

1. Numbers up to 100.—Example.

36 to be made less by 18 (36 — 18) = by analysis =

1		2		3
30		30		36
10 sub.		8 sub.		20 sub.
20 dif.		22 dif.		16 dif.
8 sub.	Or =	10 sub.	Or =	2 add
12 dif.		12		18 ans.
6 add.		6 add.		
18 ans.		18 ans.		

First, go over each step of the processes, explaining as you proceed, and making the class repeatedly *return* your explanations—your processive steps, till they become familiar with every part of the operation. Then question them on the whole,—thus: What number is to be made less?—36. By how many?—18. How have I proceeded in making it less by 18? You first take the 10 from the 30; which leaves 20; then the 8 from the 20; which leaves 12. To the 12 you add 6, as 36 is 6 more than 30. How do you know that to get the difference between 36 and 18, by the first analysis, 6 must be added to the second difference?—Because 36 is 6 more than 30, from which 10 and 8 were successively subtracted. How does the second process in obtaining the same result differ?—You first subtract from 30 the 8 digits, and from the remainder the 10? Why take the 30, and not the 36, as a minuend to make the subtraction planer. And so on,—always continuing the questioning, (accompanied with explanations, and suggestive hints, when required,) till convinced that every thing about the operation is understood. And study how to give *variety*, as well as *simplicity* to your exercises.

To make them expeditious in subtracting numbers up to 100, exercise them as follows, and teach them how to drill themselves—giving them examples,—select numbers, as 100, 70, 55, 41, 20, &c., &c., and from the selected numbers, make them take away smaller numbers. Begin first with the nine digits, and prog essively, as they improve, make the exercises more and more complex, as follows:—Quest. Exhaust 20 of threes? = 20, 17, 14, 11, 8, 5, 2 remaining. Quest. Subtract 5 from 55, successively? = 55, 50, 45, 40, 35, 30, 25, 20, 15, 10, 5, 0 remains. Quest. Subtract 9 from 70 in series? = 70, 61, 52, 43, 34, 25, 16, 7 remaining. Make them then reverse the processes by adding; and continue these exercises till they can rapidly, and without mistakes give sums and differences, without any hesitation. Two things must ever be