

questions and explains difficulties. The class is then warned that on a certain day they will be expected to work a question without assistance. Most of the children look quite confident of the outcome of this test—but there are surprises. Perhaps half the class displays with pride the question correctly worked. Half as many more have met with difficulties, easily explained—due perhaps to inaccuracy—and the rest are entirely at sea. The difficulties are soon cleared up, and then comes the real work of making the process clear to the dull ones—a process not one whit more difficult than teaching subtraction to the same individuals.

Teaching children to write numbers involving billions, millions, etc., is one of the things calling for patience and ingenuity, and yet it is wonderful how soon the immature brain of grade four seizes on the idea presented.

It is comparatively easy to teach the child to read numbers correctly, but when it comes to writing them for himself, he finds it a rather more difficult undertaking. Suppose he is asked to write the number 17,009,084. He has been drilled on the different families, billions, millions, thousands, etc., and knows their relative positions. The first step is clear. He writes the seventeen and places after it a comma, and the position of that comma cannot be changed. A reminder that the nine in the thousands' place must fill three places and still read nine, does away with the tendency to represent the family of thousands by a single nine; and the same statement concerning the eighty-four which must fill three places and still read eighty-four soon results in a correct placing of those figures.

Should any family lower than the first one in the given number not be represented, the child soon sees that in order to make the number read correctly when completed, the space must be filled in with ciphers.

Of course there are children, and will always be children, to whom this explanation will mean very little. In such cases, I have tried starting with twelve ciphers divided into periods of three and named respectively, billions, millions, thousands, etc., and by actually placing the number under the corresponding cipher above, have seen the light of understanding gradually break on the slow mind, and have allowed the child to use this device in writing a series of numbers and getting them placed correctly for

adding. This, however, might have its objections in any but extreme cases.

A tendency to shirk names and explanations, and to ignore decimal points is one of the difficulties to be overcome in this grade. If one will accept slipshod work of this kind, one will get it from nearly every member of the class, but to insist on this attention to detail means just as surely to get it, and to get also greater accuracy in the work itself.

One could never hope to explain the various problems to be covered, without the help of mental arithmetic. A mental problem, simple in itself, but whose working out is similar to that of the larger question to be solved, often proves most illuminating.

Above all, children of these grades can be treated as though they possessed both intelligence and the power of application. They have both; and do not require every dose of arithmetic to be sugar-coated by being put into the form of a story. Too much "story" and explanation and "method" serves only to hopelessly befog the child who is much better able to grasp a straight statement. Neither is it necessary to base one's questions on things relating to dollies and doggies and kitties—practical questions relative to everyday life will be found to be much more appreciated. When one sees the "devices" and "methods" adopted, or presumably adopted, since they occupy a large amount of space in some school journals—to teach children the most ordinary combinations in arithmetic, one sometimes wonders if the race of children with intellect is supposed to have become extinct.

Text-books have their places, but only as a guide in the hands of the teacher or as a special treat for the class on rainy days or Fridays.

There is no royal road to teaching arithmetic. After one's best efforts, there will always be members of the class whose number work is the teacher's despair. But if the majority of the pupils in grade four can answer intelligently simple questions based on the work covered, and can work addition, subtraction, multiplication and division with a fair amount of speed and accuracy—accuracy to be demanded rather than speed, although the latter is to be most earnestly coveted—the teacher of a large class in this grade is justified in feeling a certain amount of satisfaction over the result of the year's work.