discover unknown—and that is a rough explanation of what is meant by **thinking.**

And so pupils proceed from number to number thinking their way. At every stage in the process the truths discovered are applied to what are known as practical problems. For instance, "4 cabbages and 2 cabbages are how many cabbages?" "Three pairs of boots make how many boots?" "How often are two inches contained in 6 inches?"

Because thought power is emphasized in all this work the teacher will, from time to time, make use of such questions as, "How did you get it?" Pupils must learn that they are expected to do two things—to get results and to explain how the results are obtained. Of course, the work of explanation may be overdone.

All the number work at this stage is conducted orally. There is no need for blackboard work, no seat work, no copying of columns of figures. Good brisk class work is quite enough.

Now arithmetic is taught not simply because it is a means of developing power to think clearly and to express the results of thought, but because it has a very practical value in the affairs of life. Therefore the practical problems given should have for the pupils a real meaning. Every term employed should have a content. For this reason it will be well in school to make much use of practical measurement. The foot-rule, the pint and quart measures, the standard weights, the common coins should all be used in class work, and continual reference should be made to the measures used in the home and in the market place. This thought should be in the mind of the teacher as she deals with the senior grades. There are dozens of terms used in some of the text-books in arithmetic that have no real meaning for the pupils. It gives an arithmetic an air of wisdom if it contains such expressions as "Egyptian consols" and "super-tax," but it is unfair to ask children in any grade to work problems that have no real significance. Therefore, along with number study, there should be practical study in measuring, trading, counting. It was no extravagance of thought which prompted one teacher to set up on the play-ground of the school a toy store, nor was it an error on the part of another teacher to make use of a crokinole board in the class-room. Both of these teachers asked pupils to think their way to answers, but every problem asked had a real meaning.

Numbers 11–20

There are many opinions as to the order in which the facts of number from 11-20 should be presented. Some people believe in presenting the additions and subtractions first, and the multiplications, divisions and fractional parts afterwards. Another class believe that the first facts are the even divisions such as 6+6, 7+7, 8+8, etc., and that all other combinations should be derived from these. Still another class of teachers say that the numbers should be presented in order of magnitude and dealt with just as the numbers below 10. Of this class there is a well-known school of teachers who urge that each of the numbers above 10 must be thought of in relation to 10, since we have a decimal system of expressing numbers. It is necessary to pause a moment to consider this claim.

In arriving at the number of fours in 17, shall a pupil say "I know 4 fours are 16, therefore 4 fours and 1 make 17?" Or shall he say "17 is 10 and 7. The fours in 10 are 2 and 2 over, and the fours in 7 are 1 an 3 over, therefore the fours in 17 are 3 and 5 over, that is 4 and 1 over?" Please do not laugh at this. The advocates of the method are very much in earnest. They tell us that it is logically absurd to think of 17 as anything else than 10 and 7 since that is exactly what the word seventeen means. Our answer to that is just this, that for purposes of counting, seventeen is surely 10 and 7, but that 17 is just as much 16 and 1 or 15 and 2 or 14 and 3 as it is 10 and 7. We can always, for purposes of calculation, substitute for 17 any equivalent. That is the meaning of **thinking. Thinking** is getting out of a difficulty by using knowledge already acquired. There-